



FINAL PROJECT – TI 141501
CREATING DECISION SUPPORT SYSTEM USING TECHNIQUE FOR
ORDER OF PREFERENCE BY SIMILARITY TO IDEAL SOLUTION
FIVE FACTOR MODEL CASE STUDY PT. ABS

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Faculty of Industrial Technology
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APPROVAL SHEET

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FINAL PROJECT

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ABSTRACT

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PT ABS is a company engaged in outsourcing. PT. ABS has over 20 + types of jobs to outsourcing. PT. ABS has more than 1000 + employees active working, but sometimes occurs problems of PT ABS are not able to do recruitment in a desired time, so that it takes longer than it should.

This final project proposes to undertake the implementation of the information system in PT ABS to simplify the hiring process. By using the Decision Support System (DSS) and the method of the Five Factor Model (FFM) to identify the character of Labor candidate. FFM has 30 psychological attribute table, by using the method of weighting for Borda, TOPSIS method for connecting and any weighting criteria value personality assessment conducted by the Labor candidate. In the final project will be used to resolve two cases of PT ABS namely General Cleaning and Security, using 20 Labor candidate as a case study of PT ABS.

**Keyword : Borda, Five Factor Model (FFM), Decision Support System
(DSS), TOPSIS, Recruitment, Outsourcing**

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PREFACE

Praise the Mighty Lord, Allah SWT, for His Blessing and Guidance, in helping the author to successfully accomplish this research for final project titled “Creating Decision Support System Using Technique for Order or Preference Similarity To Ideal Solution Five Factor Model Case Study PT. ABS” on time. This final project is composed as one of the requisite to achieve a Bachelor degree in Industrial Engineering Department, Institut Teknologi Sepuluh Nopember. In finishing this final project, author had received a lot of help, support, and motivation from many parties. Therefore, in this occasion, author would like to say thank you for those who had been involved in supporting the completion of this final project. Those are:

1. Allah SWT for had given all the grace and blessing so that the author got the ability to accomplish this final project.
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4. PT. ABS crew, Mr. Mada, Mr. Danang, Mr. Erik, and Ms. Jessica as authors that has helped author to collect data
5. The author realizes that this research is far from perfection. Nevertheless, the author expects constructive recommendation and critics regarding to the shortcoming in this final project so that it can be improved. Hopefully this report can bring benefits and contribution in enriching the knowledge of the readers.

Surabaya, 28th June 2018

Ivan Avianda Widagdo

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CHAPTER 1

INTRODUCTION

In this chapter will be discussed the introduction regarding to this Final Project. The introduction will include the background of this Final Project, problem formulation, objectives, benefits, scope that consists of limitations and assumptions, and the systematic report outline for this Final Project.

1.1 Background

In the industrialized world are great as well as the need for labor that produces complex experts skilled in doing the job. The existence of a strong link between the company and labor create equally benefit. Labor is one of important component to support the company in its plans to achieve the goals and targets of the business company that has been set. Therefore, the labor candidate recruitment process is a critical process that the quality standards should be maintained, because by having a Labor candidate with high competence are important assets so that the recruitment process should be done carefully.

In generals the company wanted large revenue with minimal outlay as possible. To achieve that goal, many companies resorting to the use of labor outsourcing service as part of a strategy to reduce costs but still have the performance standards of competent workforce and experienced. Outsourcing is to allocate the risks and responsibilities to perform functions or services to another entity (Ashley, 2008). The selection of outsourcing can evaluate and be able to reduce operational costs and make the company reinvested for Excellence (Jiang & Qureshi, 2006). By using the strategy of outsourcing, internal company will focus on core competence and can have a corporate structure that sleek and not entrenched to enhance responsive to market changes.

According to Statista (2017), The Global Outsourcing gross \$89 billion and said the trend will increase in the coming years (Statista, 2017). Recent research conducted by Deloitte in the year 2016 indicate that increased use of outsourced mainly on field service increased 32% to 47% overall in total (Deloitte, 2016). These data suggest that the rate of use of outsourcing labor is indeed a favorite for use as part of a corporate strategy. The use of outsourcing services set forth in the regulation of the Minister of manpower and transmigration (*Permenakertrans*) No.

19 year 2012 limiting outsourcing is only for five different types of work, i.e. businesses that provide/assist cleaning (cleaning service); businesses that provide food for workers or labor (catering); business security officers (security). Later, support mining and petroleum; and the provision of transport for workers.

PT Absolute Business Service (ABS) is a provider of workers engaged in the services outsourcing venture, PT ABS is in the position of liaison between the labor candidate with companies in need. This means the company will send the candidate of labor required by the partner company. Thus the labor candidate actually contracted by outsourcing companies, not by the partners of the company. Therefore, it can be said that the performance of the outsourcing company known by partner companies based on the performance of the employees employed by the company outsourcing partner in the company. It means PT ABS claimed to be able to do the process of selection and recruitment system well and fit, to achieve a competent workforce and have good performance. According to the House (2014), a good selection process is a process that is able to test the extent to which personality ability to adapt in real conditions

The principle of the right people in the right place will result in the labor which able to adapt to his work, and can work well, as well as being able to provide the best for the company. For the start, PT ABS will search candidates from various regions. Then the labor candidates will submit the document selection that has been arranged by PT ABS. After document selection then followed by MBTI psychological test. Whereas interview test will be conduct after. Interview test conducted in two phase, the first phase conducted for the determine position of labor candidate and the second is intended to acceptance of labor candidate. After accepting labor candidate, then it will proceed to do training regarding work placements which already set. PT ABS has 4 key aspects of assessment in receipt of labor candidate, that is; appearance, experience, attitude, and education. Psychological test is included on attitude aspects aside from direct expert assessment.

In the context of industrial organizational, psychology tests hold a very important role. Especially in the process of recruitment and selection of employees. Individual information obtained through personality assessment can be a Predictor

predicts the performance of individuals in a given task (Murphy et al, 2005). According to research carried out by JobStreet, 73% of workers are dissatisfied with their jobs, 54% the cause is because the workers are forced to do work not in accordance with the educational background (Jobstreet, 2014). According to Jewell (1998) personality assessment becomes essential in the employee selection process because certain positions require specification of people with certain personality characteristics that are not only viewed based on general ability or intelligence (Jewell & Siegall, 1998). By creating a Decision Support System (DSS) that can assist companies in determining recruitment placement position of labor using the candidate's personality as the indicator assessment. Not only assisting in work placements, but also reduces the time of recruitment. The test was carried out online and simultaneous. With the use of personality assessment to identify prospective interns and criteria based on the criteria of an ideal match the required position on that part. Personality has been found to correlate strongly with life satisfaction (Boyce et al, 2013).

Personality assessment has various types namely; Five Factor Model (FFM), Myers-Briggs Type Indicator (MBTI), and Dominance Influences Steadiness Compliant (DISC). Personality assessment to be used was the Five-Factor Model (FFM), according to the Mount (Mount, et al., 2009) Five Factor Model methods can be used to help selection process workers. FFM able to predict performance and integrity of a potential labor candidate from the personality-based description. Five Factor Model according to (Goldberg, 1992), is divided into 5 main factors, namely, Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (OCEAN). 5 main factors are further divided into 30 sub factors specific to a more specific personal assessment. There are several methods for performing measurements of the FFM, namely the International Personality Item Pool (IPIP), NEO-PI-R, The Ten Item Personality Inventory (TIPI) and others. On this final assignment will be tested using the method of IPIP Neo personality 120. IPIP Neo is testing method created by Goldberg (2005) is based by necessity of easily-available & broad bandwidth personality inventory.

In this case, PT ABS trouble to fulfill demand in time & determine the candidate placement. But due to the large number of labor candidates to be

interviewed which led in require quite a long time and potentially inhibit the recruitment process. For examples is when the PT ABS cannot meet the demand of general cleaning labor for PT ABS in the specified time. At that time there were 100 candidate passes the selection file, and worth to follow the process of the interview. Based on a selection process that has been there, PT ABS should do the interview for the 100 labor candidate to qualify for the selection of the file so it can be said to be fair. However, doing so will make the PT ABS not being able to meet the demand of PT ABS within the time. These conditions often encountered by PT ABS on certain conditions when receive a huge demand from partner/consumer companies. Hence the needs of solution in the use of technology to create information and communication systems in assisting decision making through personality assessment. This research will implement use of the DSS by using FFM personality assessment methods and give the recommendation of candidate based on the result.

1.2 Problem Formulation

Based on the identification of a problem that has already been done, thus the formulation of problems on the research is creating the decision support system (DSS). The role of DSS is to help decision making in recruitment Labor candidate by using the decision support system based on the assessment of personality Five Factor Model (FFM) as the ideal criteria identification in the placement of labor candidates.

1.3 Objective of Research

The destination can be reached from the existence of this research, including the following:

1. Create DSS that is intended to help companies in decision making Labor candidate recruitment
2. Implementing the results of the DSS in helping the company to put the Labor candidate in the appropriate section

1.4 Benefit of Research

This is the benefit of doing the research, as follows:

1. The company was able to predict the performance of Labor candidate
2. The company was able to avoid the recruitment of Labor candidate with bad prospects.
3. The company was able to save time in the hiring process
4. The company was able to improve objectivity in the recruitment of labor.

1.5 Scope of Research

In the subsection of this chapter will be discussed limitations and assumptions that are used today in the final task, as follows:

1.5.1 Limitation

The following are limitations do research, as follows:

1. Research only on the part of Labor's candidate recruitment process
2. Research only on the part of Psychological & Interview process
3. This study uses an online questionnaire models namely IPIP Neo 120 personality assessment
4. Expertise on the research it is employees who work directly on the Labor candidate recruitment process

1.5.2 Assumption

The assumptions used in the final assignment is as follows:

1. The company assumes that the personality is an important aspect in decision-making
2. The absence of policy changes in the process of recruitment system

1.6 Systematic Writing

This section later on will be explained about the Systematics of writing that will be used in the preparation of this final task.

CHAPTER 1 INTRODUCTION

In Chapter 1 introduction will be explained about the background problems, formulation of the problem, the objectives and benefits of the research in this thesis. In addition, there is the scope of the research consists from the constraints and assumptions used in this final assignment with the Systematics of writing.

CHAPTER 2 LITERATURE REVIEW

Chapter 2 Literature review will explain about the literature study will be used as the basis of the work of the task. It would explain regarding Outsourcing, recruitment, selection, Manpower, Five Factor Model (FFM), Design Software by MySQL, Language Unified Modelling (UML)

CHAPTER 3 RESEARCH METHODOLOGY

Chapter 3 research methodology will be explained about the flow of work and measures in research in this final task. Research methodology on this final project will consist of the identification and formulation of problems, data collection, system development life cycle, and the analysis of decision support system for obtaining conclusions and suggestions for future development.

CHAPTER 4 DATA COLLECTING & PROCESSING

Chapter 4 will be explained about the collection and processing of data to solve problems that have been formulated. In addition, this section will be explained about the steps of creating software and UML as a base of the software will be created.

CHAPTER 5 ANALYSIS & INTERPRETATION DATA

Chapter 5 of this will be explained about the analysis software of the DSS. The analysis is carried out based on the data that has been processed in the previous chapter. The result of the processing of data will be relied upon in determining conclusions and suggestions for improvement on subsequent research.

CHAPTER 6 CONCLUSION

Chapter 6 will be explained about the conclusion of the results of research that has been done, after that it will be given the improvements that aim to research next.

CHAPTER 2

LITERATURE REVIEW

In this chapter will be explain literature used as the basis foundation in the implementation of the final tasks of research, the study of the literature that helps researchers in determining the proper method to be applied in solving problems.

2.1 Outsourcing System

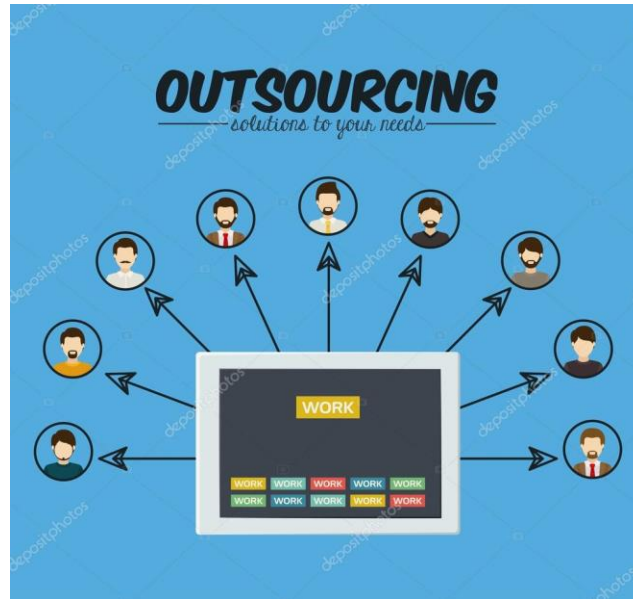


Figure 2. 1 outsourcing System (source: <http://www.google.com>)

Outsourcing is to allocate the risks and responsibilities to perform functions or services to another entity (Ashley, 2008). The selection of outsourcing can evaluate and be able to reduce operational costs and make the company reinvested for Excellence (Jiang & Qureshi, 2006). Based on some of the existing references, there are various advantages in doing outsourcing practices, such as the following:

1. The ability to spread risk.
2. Internal company could do to better control (concentrate internal value).
3. Overhead costs and reduced operational costs.
4. Possibility to convert fixed costs (fixed cost) became variable costs (variable cost).
5. Low capital involvement
6. The availability of new service options
7. Acquisitions specialist or technical expertise to.
8. Facilitate access to new technologies in a more economical cost.

9. Help price your products/services produced the company become more compete.
10. High flexibility and better able to meet fluctuations in demand.
11. Companies can better focus on their core business.
12. Improve the quality of products/services produced.

According to Khairani (2012) There are three reasons the adoption of the concept of outsourcing in the employment system in Indonesia, namely:

1. The flexibility of the job market will improve the investment climate.
2. open the expansion of employment opportunities in the formal sector.
3. the company was able to make a contribution on the reduction of poverty

In addition to the definitions and the benefits already mentioned previously, there is some types of cooperation with a third party that has characteristics similar with outsourcing. There are 4 types in cooperation with third parties (excluding outsourcing) IE (Indrajit, et al, 2003):

1. Contracting

Contracting is a form of surrender of the company's activity on the simplest of third-party and is its most conventional. Usually this concerns a simple activities or types of lower-level services such as office cleaning, maintenance of lawn and garden and more. This type is a type of short-term strategy, only has the meaning of tactical. This type also is not part of a corporate strategy to take positions in the market but merely seek a practical way only. Practical in the sense of avoiding unnecessary difficulties and also save costs. Due to the nature of the work is very simple, then the selection of the giver of services is not a serious problem because almost all people or companies with a short exercise can do the job. In terms of costs, may not be a big part of the whole of the costs incurred by the company.

2. Insourcing

Insourcing is the opposite of outsourcing, which the company is not submitting the activity on other companies that are considered more competent, but instead take a job or receive from other companies with different motivations. One important motivation is keeping the level of productivity and maximum use of assets so as to safeguard and increase the profits of the company. Thus, the primary

competence of the company are not only used by the company itself, but can be used by other companies in return for certain. This is particularly important when production capacity is not used in full

3. Co-sourcing

Co-sourcing is related to the kind of relationship work and activity, where the relationship between the company and the partners more closely than just outsourcing relationship. For example, the company's specialist staff seconded on a counterparty give services due to the scarcity of skills required or because the company doesn't want to lose the specialist staff. In this way, then the success of the work as being a shared responsibility, as well as the risk of failure.

Benefit-based outsourcing relationship is the relationship-between the two parties held a joint investment with the Division of a particular job. Thus, both parties really support each other mutually as well and vice-versa are suspended. Both sides got a profit sharing based on the approved deal together.

2.2 Manpower

According to Hamzah (1990) defines, manpower are products that are already or are currently working, or are looking for jobs, and who are carrying out other work. Practically, the workforce is composed of two terms, namely the labor force and not the work force:

- Labor force comprises the working and unemployed or are looking for work.
- Not a work force made up of the educated classes, who take care of the household, and the others or receive income from other parties, such as retirees etc.

Labor in the Government of the Republic of Indonesia set up in the Ministry of employment, and went into the Field Coordinator of the Ministry of economy. As for some description of the workforce on the basis of legislation, as follows:

- According to law No. 14 of 1969 principal provisions concerning labor, Chapter 1 about the sense and the principle, article 1, mentioned that the workforce is any person who is capable of doing work both within and outside the working relationship in order to producing goods or services to meet the needs of the community.

- According to law No. 13 year 2003 about the employment, Chapter 1 on general provisions, article 1 paragraph 2, stated that labor is any person who is able to do the work to produce goods and or services, both to meet the needs of its own as well as for society.
- According to law No. 13 year 2003 about the employment, Chapter 1 on general provisions, article 1 paragraph 3, also mentioned that the workers/workers are any persons who work with pay or remuneration in other forms.

From the definition of Hamzah (1990) and regulations will be concluded that labor is divided into two types, namely the work force rather than the work force. Example not work force were retired, school children, and housewives. In this study, the context of workforce covered are the labor force.

2.3 Selection Process

The selection process of labor is one of the important section, because it consists of various specific steps to determine which applicants will be accepted and which applicants will be rejected (Wayne et al, 2014). Recruitment may also refer to the process involved in selecting individuals for the position of unpaid (volunteer), as is the role of voluntary or unpaid trainee roles. According to Kumari (2012) the important step done on recruitment process as follows:

1. Reception
2. Screening Interview
3. Application Blank
4. Selection Test
5. Selection Interview
6. Medical Examination
7. Reference Check
8. Hiring Decision

Based on the book written by w. House (2014), House describes the stages in the selection process must be performed in sequence. The following sequence of stages of the selection process:

1. The Shortlisting

The first stage of selection, through the selection of administration (file sorted) are suitable or not in accordance with the terms of the already determined.

2. References

Stages of the recommendations and preferences to the file that is already in, if they can continue or not.

3. Interviews

Stages of face-to-face interviews with prospective employees, done to dig out the extra information and interrogation related to files already qualify.

4. Testing

Stages to test the ability of intelligence, personality, attitude and proficiency of prospective workforce.

5. Group Assessment

Stages to see the extent to which the capabilities of individual psychology and adaptation in real conditions, in particular in cooperation and sharing.

6. Job Offer

Stages to compare the performance of Worker Candidates during the selection process for the job spec is available.

2.4 Five Factor Model & Personality Assessment



Figure 2. 2 Five Factor Model of Personality (Source: <https://www.psychologistworld.com>)

Five Factor Model (FFM) is a personality taxonomy arranged by lexical approach, i.e. a group of words or language used in everyday life to describe individual characteristics that set it apart from any other individual (John, et al., 2008). The Big Five Personality Traits is the best model that is accepted and most commonly used in the study of personality. This model comes from studies of statistics about the human character. Through the method of the analysis of the factor, obtained in response to the more than 100 human personality traits and bring up the sums up the best way to judge a person based on the data and objectivity. FFM has been done with a lot of samples in the world and the results are more common presented (Goldberg, 1993). Five factor model as follows:

1. Extraversion

Individual Extraversion is characterized by vibrant in building relationships with other people. They never hesitate get acquainted and actively looking for new friends. These individuals are firmly and assertive in being.

2. Agreeableness

This individual discrete sincerity in sharing, the subtlety of feeling, Focus on the positive things in people live. In their daily life comes across as a kind, individuals can work together, and can be trusted.

3. Conscientiousness

The personality of their actions and the consequences & from their behavior than those that unconscientious. Individuals with high Conscientiousness has a tendency to keep the environment clean and well-organized. As well as interested in maintaining a good timekeeping, and more goal-oriented behavior.

4. Neuroticism

Neuroticism is a customer driven personality dimensions on emotional instability, emotional stability. People with high scores will tend to be reticent persistent. They are more afraid and often feel anxious, overthinking their problem and exaggerate its importance.

5. Openness

Openness personality marked by the desire to try new activities. People with a higher level of openness to agree to ideas that are not conventional and beliefs, including to oppose their assumptions.

The following is a table of classification the Five Factor Model with 30 sub factor:

Table 2. 1 Five Factor Model Description

No.	Factor	Sub Factor	Description
1	Extraversion	<i>Activity Level</i>	A tendency to become individuals who follow a variety of activities with high spirits
2		<i>Assertiveness</i>	A tendency to become individuals who are assertive, responsible, and lead others
3		<i>Cheerfulness</i>	A tendency to be a positive individual
4		<i>Excitement seeking</i>	A tendency to become individuals who are looking for sensation and likes taking risks
5		<i>Friendliness</i>	The tendency to be the individual who is easy to get along and spread the love
6		<i>Gregarious</i>	A tendency to become individuals interact with many people and had many friends
7	Agreeableness	<i>Altruism</i>	An individual's tendency to be generous and help people
8		<i>Cooperation</i>	the tendency to be the individual who is easy to work together
9		<i>Modesty</i>	A tendency to become individuals who are simple and humble
10		<i>Trust</i>	The tendency to be the individual who mempercai the other individual
11		<i>Morality</i>	A tendency to be mean and purposeful individual who really
12		<i>Symphathy</i>	A tendency to be sympathetic individuals & cares

No.	Factor	Sub Factor	Description
13	Conscientiousness	<i>Achievement striving</i>	A tendency to be individuals working hard high achievement &
14		<i>Cautiousness</i>	The tendency to be the individual who thinks before acting
15		<i>Dutifulness</i>	A tendency to be a living principle of holding individual & promise
16		<i>Orderliness</i>	A tendency to be the individual who is being obedient to regulations & capable of organizing themselves to the environment
17		<i>Self Discipline</i>	The tendency to be the individual who was working quickly, focus & capable of self-regulating
18		<i>Self efficacy</i>	A tendency to be individuals working effectively and the wisdom of doing things
19	Neuroticism	<i>Anger</i>	A tendency to become individual anger and frustration
20		<i>Anxiety</i>	A tendency to become individuals who are restless and full of fear
21		<i>Depression</i>	A tendency to be individuals who have experienced depression than normal individuals
22		<i>Immoderation</i>	A tendency to be individuals who are not able to control the desire
23		<i>self consciousness</i>	A tendency to become individuals who are embarrassed, uncomfortable around and feel inferior
24		<i>Vulnerability</i>	A tendency to become individuals dependent on others, it's easy to give up and not able to deal with stress
25	Openness	<i>Adventurousness</i>	A tendency to become individuals who try new things
26		<i>Artistic Interest</i>	The tendency to be the individual who loves beauty and joints
27		<i>Emotionality</i>	The tendency to be the individual who is able to realise and explore their own feelings and emotions
28		<i>Imagination</i>	A tendency to be individuals who have high imagination and active
29		<i>Intellect</i>	A tendency to be individuals who have ideas new ideas of doing things
30		<i>Liberalism</i>	A tendency to become individuals who think open & discuss new things

(Source: Hudson, 2011)

Through a detailed questionnaire IPIP-NEO (International Personality Item Pools Representation of the NEO PI-R) every individual can note 30 the value of his remedies based on such factors as 5 in table 2.1. There are 3 versions of the questionnaire based on the number of questions is given i.e. 40, 120 and 300 items of assessment. The more a given assessment item then the result will be more accurate. (Hudson, 2011). This questionnaire has several advantages (Buchanan, et al., 2005), namely:

1. The scale of the NEO-PI-R proven as useful tool in a number of areas already applied
2. Questionnaire IPIP is freely available in the public domain

3. This instrument is relatively short (generally done in a span of 15-30 minute) making it suitable for online testing and estimation.
4. Appropriate Individuals reveal more about themselves in online questionnaire.

2.5 Unified Model Language

Unified Modeling Language, is a standard modeling language which consists of a set of integrated charts, developed to assist developers of software and systems to define, visualize, construct, and document the artifacts the system software, as well as business modeling and other non-software other software. the system. UML represents a collection of the best engineering practices that have proved successful in the modeling of large and complex systems. UML is a very important part in the development of object-oriented software and software development process. UML uses mostly graphical notation to express the design task software. Use the UML Help task team communicate, explore the design potential, and validate the architectural design software.

2.5.1 Use Case Diagram

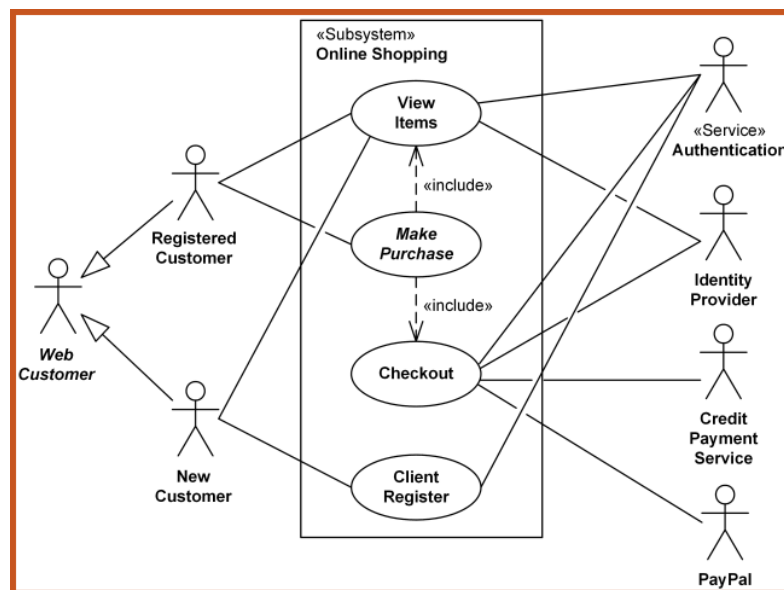


Figure 2. 3 Use case Diagram (source: <http://www.sopexample.info>)

Use case is a series of descriptions or a group of interconnected system and supervised by an actor. Use case used to shape behavior on the model as well as realized by a collaboration. Usually use case represented by the solid line and ellipse containing the name. The diagram illustrates the problem nor the solution of these

problems. Use Case Diagram depicts a group of use case and actors and the relationships among them. Use case diagrams describe the requirements desired by the user, and is very useful to determine the organizational structure and the model of a system. Use Case diagrams are useful in three things (Swafford, 2006), namely:

1. Describe the system extensively and easily understandable
2. The objective of representing the interaction between users with system
3. Use the multi-level to clarify the function with other

2.5.2 Class Diagram

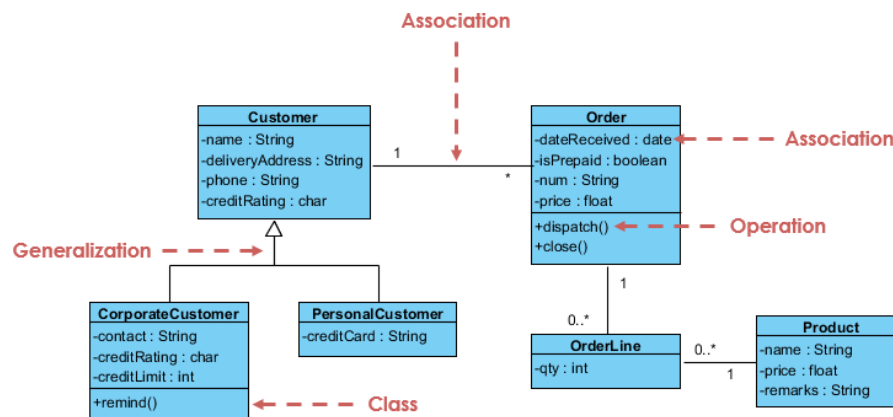


Figure 2. 4 Class Diagram (source: <https://www.uml-diagrams.org>)

A class diagram is a central modeling techniques which runs through almost all object-oriented methods. This diagram illustrates the type of object in the system and a variety of static relationship existing between them. There are three principal types of relationships in a diagram of the Model classes, namely:

1. Association-represents the relationship between the sample type (someone working for the company, the company has a number of offices).
2. Legacy-the most obvious additions to the ER diagram for use in OO. This has a direct correspondence with a heritage in the design of OO.
3. Aggregation aggregations, such as the composition of objects in object-oriented design.

2.5.3 Activity Diagram

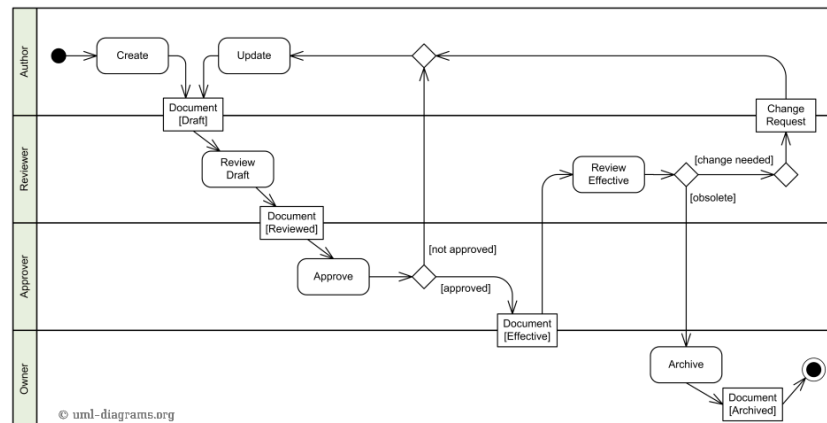


Figure 2. 5 Activity Diagram (source: <https://www.uml-diagrams.org>)

Activity Diagram is a graphical representation of the workflow activity and action stages with support for choice, iteration and concurrency. This diagram depicts the flow control of the target system, such as the crawl rules and complex business operations, which described the case of a business process as well. In the Unified Modeling Language, activity diagrams are used to model the process of computing and organization.

2.6 Pearl Hypertext Preprocessor (PHP)

PHP: Pearl Hypertext Preprocessor (PHP), was conceived in 1994 by Rasmus Lerdorf. PHP5 (PHP) is generally referred to the US is more stable and less resource intensive as well. (Valade, 2004). PHP (Hypertext Preprocessor Perl) is a set of PERL scripts used to process data from a web form. The ability of the PHP programming language is the ability to build complex web applications, but remained stable in the speed of processing and high stability.

2.7 Borda Method

Borda method first discovered by Jean-Charles de Borda in the 18th century. This method is used to perform analysis of the diversity of the variables examined. Borda's method is a method of voting used for decision making group for the selection of single or multiple winner. This method is used to determine the weight of each criterion. In this method the voters are required to give a ranking to the candidates, as well as providing value in each such candidate gives the value of 3 on the first candidate, a value of 2 on the second, 1 on the third rank value and a value of 0 on the fourth stage (Wang & Leung, 2004)

As for the algorithm of the method for determining weights of Borda criteria existing, indicated with the following steps:

Step 1 Ranking criteria by the expert fill out a detailed questionnaire ranking the total of 30 criteria.

Step 2 Determine the rank value

$$BJ = N - J \quad (2.1)$$

N : The number of criteria

J : the ranking

Step 3. Specify points borda

$$Xi = \sum (VijBj) \quad (2.2)$$

By Vij is the number of decision makers which made the criteria i rank j

Step 4. Determine The Value Of The Borda

$$Wi = \frac{Xi}{\sum \frac{1}{n} xn} \quad (2.3)$$

2.8 Technique for Order Preference by Similarity to Ideal Solution (TOPSIS Method)

In 1981, Hwang and Yoon developed TOPSIS method. TOPSIS method based on the concept that the selected alternative is best not only has the shortest distance from the ideal solution is positive but it also has the longest distance from the ideal solution. the ideal solution is a solution that all values of the message according to the criteria of maximum. The ideal solution is a solution that all the negative value of the message according to the minimum criteria. This method not only provides the best solutions but also showed the worst solutions (Hwang Yoon &,1981). The method as follows :

Step 1. Create a matrix of decisions based on the information criterion. The matrix can be expressed in the following equation:

$$D = \begin{bmatrix} m11 & \dots & m1M \\ \vdots & \ddots & \vdots \\ mN1 & \dots & mNM \end{bmatrix} \quad (2.4)$$

Where N is the number of alternative and M is the number of criteria. Each row in the matrix are allocated to one of the alternative and each column is allocated to one of the criteria.

Step 2. Normalize matrix decision

Rij is the result of normalizing the decision matrix D and dij is the matrix elements and decisions.

$$R_{ij} = \frac{D_{ij}}{[\sum_{j=1}^M d_{ij}^2]^{\frac{1}{2}}} \quad i=1,2,\dots,N; \quad j=1,2,\dots,M \quad (2.5)$$

Step 3. Normalize matrix weighting. With the matrix element normalization weighted meet:

$$V_{ij} = W_j R_{ij} \quad i=1,2,\dots,N; \quad j=1,2,\dots,M \quad (2.6)$$

With the Wj is the weighted criteria to a j who already calculated by the method of borda.

Step 4. Determine the ideal solution in positive revealed by V + and negative revealed the ideal solution with V-that meet:

$$V^+ = \{V1^+, V2^+, V3^+, \dots, VM^+\}$$

$$V^- = \{V1^-, V2^-, V3^-, \dots, VM^-\}$$

With

$$V_j^+ = \left\{ \frac{\max V_{ij}, j \text{ is the maximum criteria}}{\{\min V_{ij}, j \text{ is the minimum criteria}\}} \right\} \quad (2.7)$$

$$V_j^- = \left\{ \frac{\max V_{ij}, j \text{ is the minimize criteria}}{\{\max V_{ij}, j \text{ is the maximize criteria}\}} \right\}$$

Step 5. Determine the distance between each value alternative with ideal solution is revealed with The positive + and negative that the ideal solution is expressed with Si-that meet:

$$S_i^+ = [\sum_j^m = 1(V_{ij} - V_j^+)^2]^{0.5} \quad i = 1, 2, \dots, N \quad (2.8)$$

$$S_i^- = [\sum_j^m = 1(V_{ij} - V_j^-)^2]^{0.5} \quad i = 1, 2, \dots, N$$

Step 6. Determine the value of the proximity of any alternative to the ideal solution that fulfilled:

$$P_i = \left[\frac{\frac{S_i^+}{S_i^+ S_i^-}}{S_i^-} \right] \quad (2.9)$$

Alternative order obtained on the decline. The value of Pi showed the most feasible solution and a solution that less feasible

2.9 Usability Testing

Usability testing is a technique used in user-centered interaction design to evaluate a product by testing it on users. It can be seen as an irreplaceable usability practice, since it gives direct input on how real users use the system (Nielsen, 1994). Usability test is used to find out the functional requirement of the software. One of the method is by using Expert Judgment as the technique

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the stages of conducting final project consisting of research and explanation of flowchart of research. Research framework created to help in understanding the content of the research conducted. The framework of thought contains an overview of all aspects contained in the research starting from the object of research, formulation of the problem, research purposes, and so on. Framework research thought can be seen in Figure 3.1 as shown below;

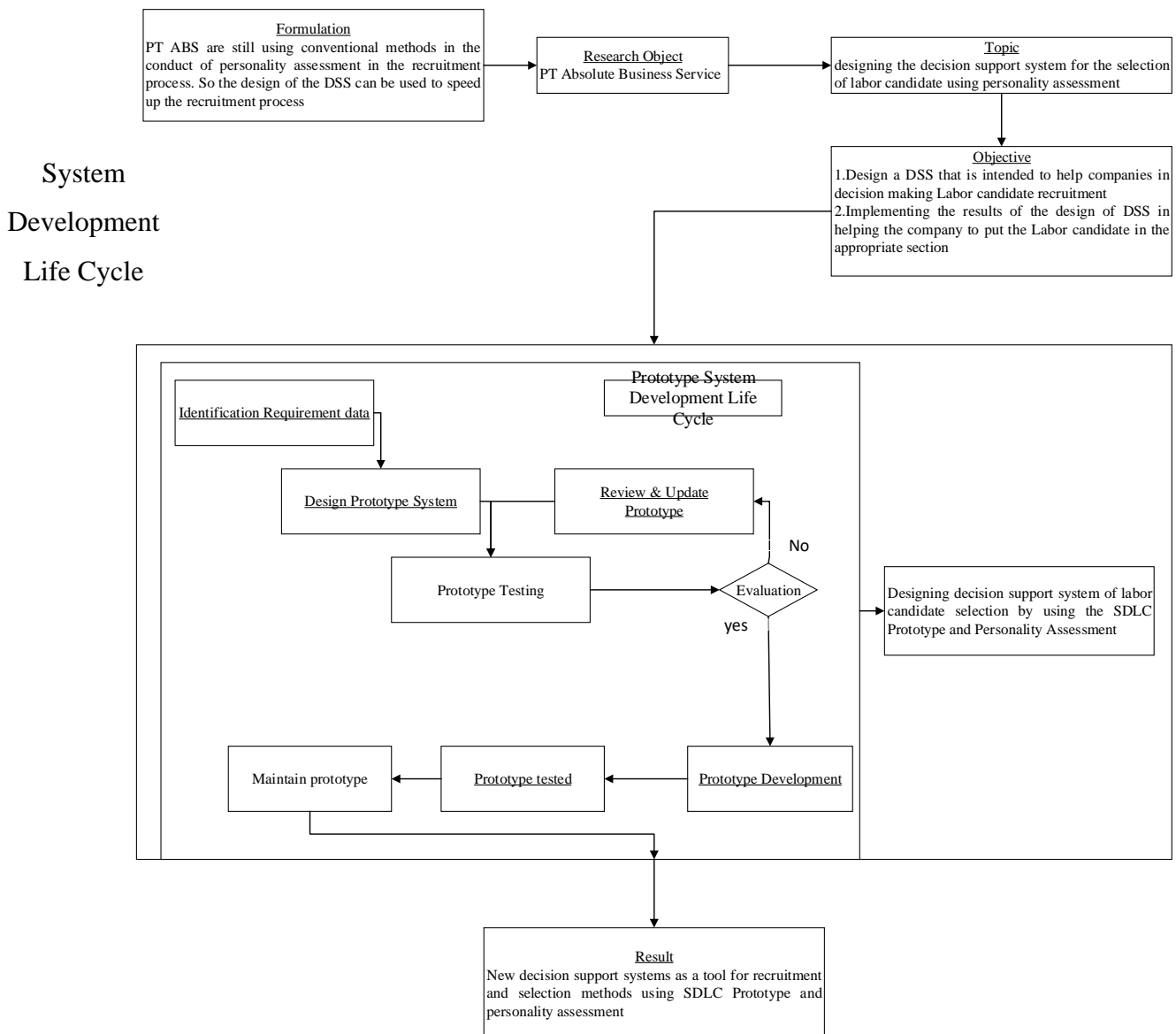


Figure 3. 1 Framework & System Development Life Cycle Prototype Design

3.1 Flowchart Research

Flowchart of research will be divided into four parts consisting of identification and formulation of the problem phase, the collection and data processing phase, the system development life cycle stage, and The conclusion and suggestion phase. The flowchart is shown below:

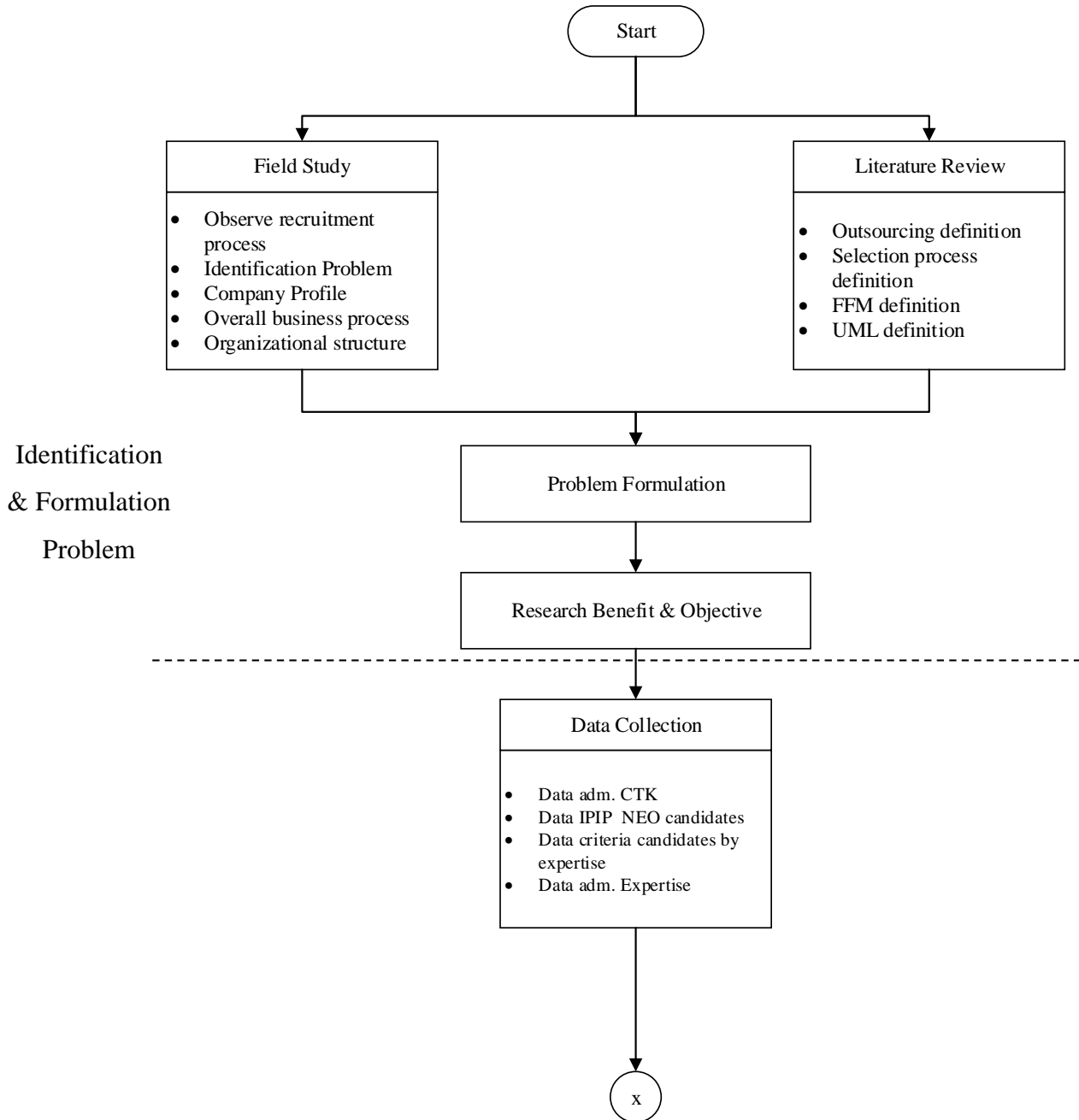


Figure 3. 2 Flowchart of Research Methodology

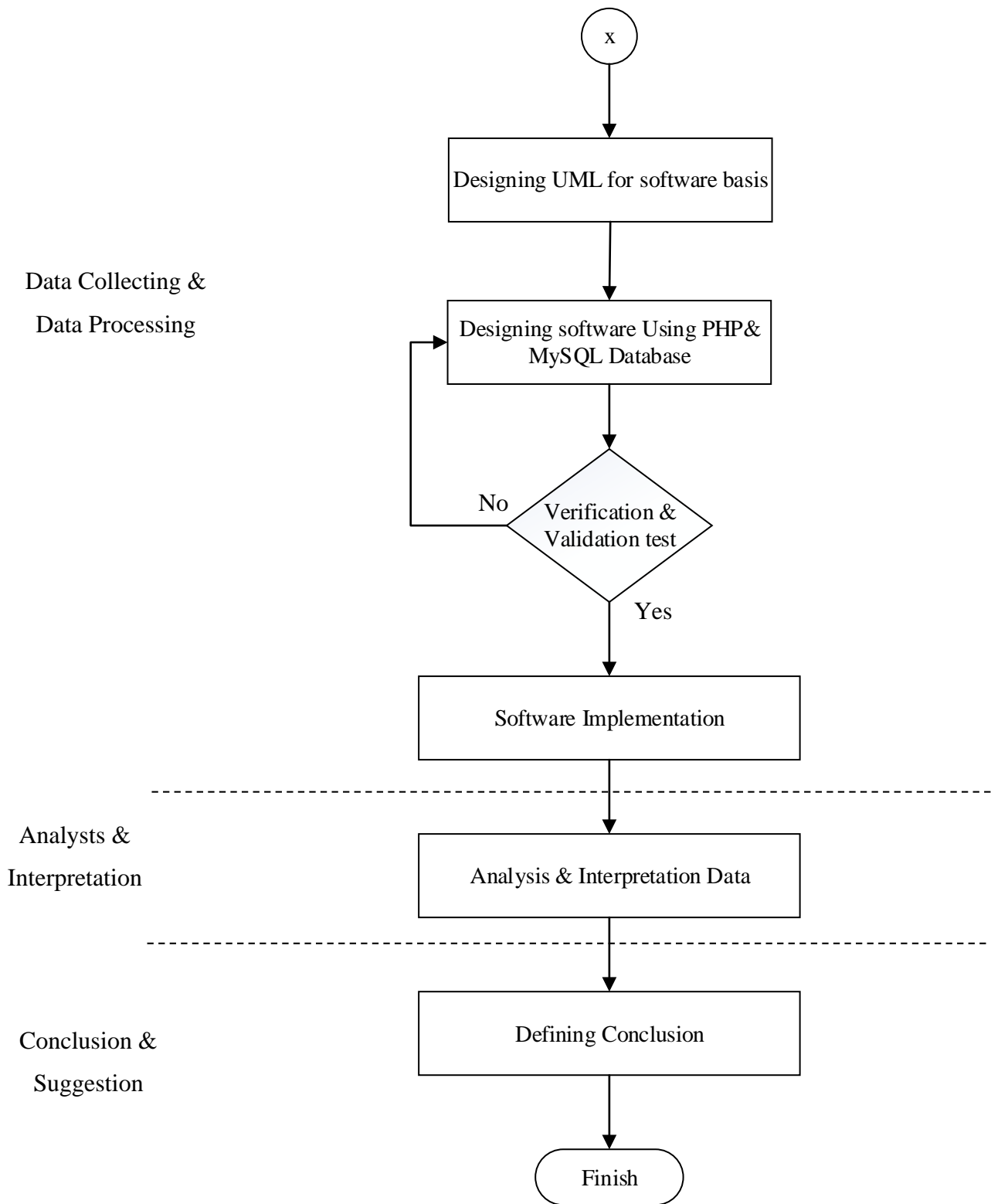


Figure 3. 2 Flowchart of Research Methodology (cont')

3.2 Flowchart Description

In this section later explains about research methodology flowchart. The discussion will be divided into 4 stages in accordance with the flow flowchart:

3.2.1 Identification & Formulation Problem

At this stage there will be the identification and formulation of the problem about the research that will be done. This phase consists of the stages of identification and formulation of the problem, determining the benefits and purpose of the research, the literature review and the study of the field.

1. Field Observe & Literature Review

This stage there will be a discussion of the literature review relating to research conducted. The literature review of this research will be derived from different types of literature books, journals, and research that is similar. In this study, the literature review will include Outsourcing, selection Process, Manpower, Five Factor Model (FFM), Design Software by PHP, Database by MySQL, Language Unified Modelling (UML). In addition, it would do fieldwork related to company profile (PT ABS), corporate business processes, Problem identification, and organizational structure of the company.

2. Identification & Problem Formulation

This stage there will be the identification of the related existing condition of PT ABS. The purpose of the identification to find problems that can be solved or to make improvements on the field through an innovation. the formulation problem is carried out to formulate the main problems to be solved of research conducted.

3. Problem Formulation

In problem formulation would describe the existing problem and the way to resolve the issue. formulation problem in final project is to make a decision support system to support recruitment processes.

4. Research Benefit & Objective

There will be a determination of benefits and the purpose of the research conducted. The determination of the benefit aimed to determine the expected positive impact occurred after the study. Whereas the purpose of the research is done to determine the things that must be accomplished in conducting this research. At this stage will be measured any results will be obtained after the implementation

of the DSS in PT ABS. Defined from the advantages obtained before and after the implementation of the software

3.2.2 Data Collection & Data Process

At this stage will do the collection and processing of data obtained from the results of the interview. This stage consists of gathering data obtained through interviews & personality fulfillment.

3.2.2.1. Interviewing Human Resource Department

At this stage there will be data retrieval by doing interviews with the HR Department. The interview aims to capture the required data. The data required are described below:

1. Administration Labor Candidate Data

Labor candidate administration data containing such as; name, age, work experience, work placements, special ability, and others.

2. IPIP Neo Labor Candidate Data

IPIP Neo labor candidate data would be filled by the candidate. This data will be input in the process of ordering and placement of Labor candidate

Table 3. 1 Five Factor Model

No.	Factor	Sub Factor	Description
1	Extraversion	<i>Activity Level</i>	A tendency to become individuals who follow a variety of activities with high spirits
2		<i>Assertiveness</i>	A tendency to become individuals who are assertive, responsible, and lead others
3		<i>Cheerfulness</i>	A tendency to be a positive individual
4		<i>Excitement seeking</i>	A tendency to become individuals who are looking for sensation and likes taking risks
5		<i>Friendliness</i>	The tendency to be the individual who is easy to get along and spread the love
6		<i>Gregarious</i>	A tendency to become individuals interact with many people and had many friends
7	Agreeableness	<i>Altruism</i>	An individual's tendency to be generous and help people
8		<i>Cooperation</i>	the tendency to be the individual who is easy to work together
9		<i>Modesty</i>	A tendency to become individuals who are simple and humble
10		<i>Trust</i>	The tendency to be the individual who mempercai the other individual
11		<i>Morality</i>	A tendency to be mean and purposeful individual who really
12		<i>Symphathy</i>	A tendency to be sympathetic individuals & cares
13	Conscientiousness	<i>Achievement striving</i>	A tendency to be individuals working hard high achievement &

No.	Factor	Sub Factor	Description
14		<i>Cautiousness</i>	The tendency to be the individual who thinks before acting
15		<i>Dutifulness</i>	A tendency to be a living principle of holding individual & promise
16		<i>Orderliness</i>	A tendency to be the individual who is being obedient to regulations & capable of organizing themselves to the environment
17		<i>Self Discipline</i>	The tendency to be the individual who was working quickly, focus & capable of self-regulating
18		<i>Self efficacy</i>	A tendency to be individuals working effectively and the wisdom of doing things
19		Neuroticism	<i>Anger</i>
20	<i>Anxiety</i>		A tendency to become individuals who are restless and full of fear
21	<i>Depression</i>		A tendency to be individuals who have experienced depression than normal individuals
22	<i>Immoderation</i>		A tendency to be individuals who are not able to control the desire
23	<i>self consciousness</i>		A tendency to become individuals who are embarrassed, uncomfortable around and feel inferior
24	<i>Vulnerability</i>		A tendency to become individuals dependent on others, it's easy to give up and not able to deal with stress
25	Openness	<i>Adventurousness</i>	A tendency to become individuals who try new things
26		<i>Artistic Interest</i>	The tendency to be the individual who loves beauty and joints
27		<i>Emotionality</i>	The tendency to be the individual who is able to realise and explore their own feelings and emotions
28		<i>Imagination</i>	A tendency to be individuals who have high imagination dak active
29		<i>Intellect</i>	A tendency to be individuals who have ideas new ideas of doing things
30		<i>Liberalism</i>	A tendency to become individuals who think open & discuss new things

(Source: Hudson, 2011)

3. Administration Expert Data

Data administration expert containing such as; name, age, work experience. This data is based on the profile of the employees at the Ministry of HRD

4. Expert Rank Data

Sorting data Expertise contains a ranking weighting will be filled by expert. The data of the questionnaire will be filled using a number as a priority a field

3.2.3 Design of Class Diagram, Sequence diagram, Activity diagram and Data Flow Diagram

This stage there will be a design Class diagrams, Sequence Diagrams, Activity diagrams and Data Flow diagrams from decision support system which

will be designed. The diagram design aims to facilitate understanding of the flow of data to the system, so that makes it easy to create logically, structured, and clear

3.2.3.2.1 Design of Use Case Diagram

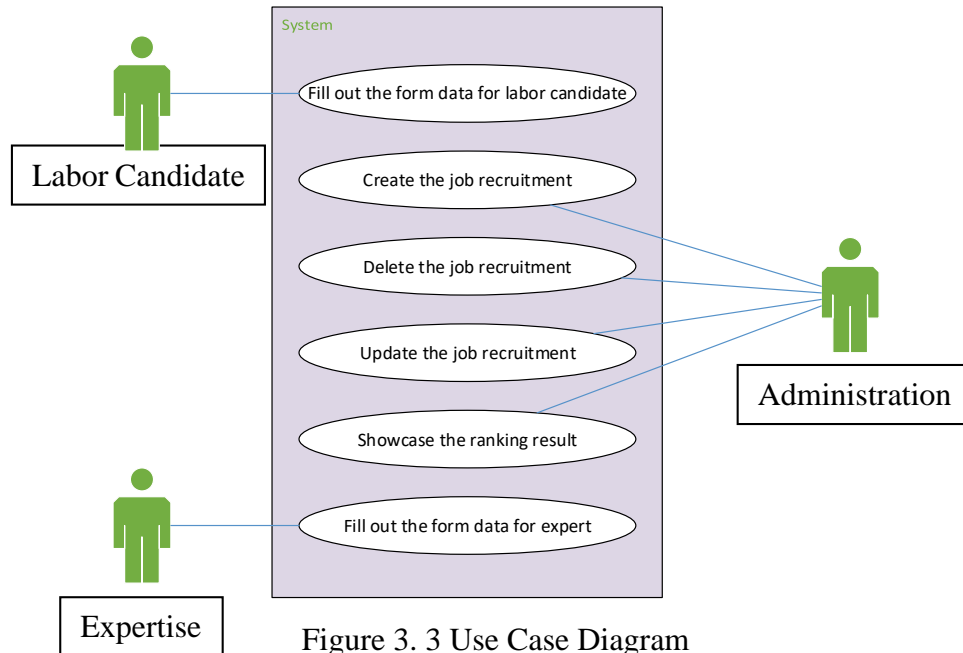


Figure 3. 3 Use Case Diagram

Use case diagram describes the overall system, as well as providing information on interactions between interconnected entity. The DSS will have 3 entities; that is administration, expertise, and the Labor candidate. The Administration has the task: create a job recruitment, perform the removal job recruitment, do update job recruitment, as well as indicate the final results from the results of job recruitment. Then Expertise has the task to fill ranking criteria are well prepared. Hence, the candidate should fill the IPIP NEO test when it was already accepted from administrative processes.

3.2.3.3 Design Program Using PHP & MySQL Database

At this stage there will be a programming logic design of DSS. Programming logic is crucial in the development of a system. It would determine whether the program would run properly or not. When there is an error of logic programming, then the system is not able to do running and will appear warning that there is an error in the programming logic inputs do. The design of the software will be using white box mode (PHP) and MySQL for database. The framework of the system development life cycle is using Prototype model. hence the model can be easily implemented and interpreted.

3.2.3.4 Conducting Verification & Validation Test

At this stage there will be a verification test & validation test logic programming has been designed. The purpose of the test is to perform verification checks whether the logic is true or false. And whether the output will valid or not, Verification test will use PHP testing software.

3.2.3.5 Software Implementation

At this stage the DSS will be implemented to PT ABS recruitment process. It aims to find out the whether the software is compatible within the system or not. On this stage the staff of Human Resource Department would try to use the system and reviewing the DSS and give the score.

3.2.4 Analysis & Interpretation Data

The analysis will do by analyzing on labor nominee. the desired criteria analysis expert, an analysis of the five factor model, and analysis of potential labor candidates. and also analyzes the results of a comparison of the use of DSS after and before applied

3.2.5 Defining Conclusion

This stage is the final stage of the research thesis which contains the withdrawal of conclusions based on research objectives that have been set. While the suggestions made to improve research that will do next with regard to labor's selection system.

CHAPTER 4

DATA COLLECTING AND DATA PROCESSING

In this chapter will explained about data collecting, system UML Data Processing, and system interface.

4.1 Data Collecting

In this subchapter will discuss regarding data collection, consisting of company profiles, recruitment, recruitment data flow, data expert & administrator. The data as follows:

4.1.1 Company Profile



Figure 4. 1 PT. ABS Logo (source: google)

PT Absolute Business Service is a private company which is engaged in the field of outsourcing in Indonesia, more precisely in the city of Surabaya. The company was founded in 2009. At the beginning of the establishment of PT ABS have only specific work on outsourcing system, namely cleaning service and security. But the beginning of 2014 years increased the number of types of workers up to the level of Top Management. In the year 2018, PT ABS has more than 20 types of jobs are available for outsourcing and has had more than 1000 active workforce and has branch offices in Jakarta. provides professional manpower for various needs of companies, malls, Hotels, schools or other property. The entire workforce of Absolute Business Service of Surabaya have been trained through a good learning system in order to form a skilled personal chars, nimble and responsive in the field of his duties. With the ability, the improvement sustainable, optimistic attitude, and with the support of tough management, the management team and the team of professional supervisors are fully responsible for the results of the work

Vision and Mission PT Absolute Business Service

PT ABS has the vision and mission of reference to conduct business from the company. The vision of PT ABS is "to be the provider of the Service Workers (PPJP) and laundry services is best qualified and trustworthy, with emphasis on customer satisfaction."

The elaboration of the above vision is divided into some aspects of vision likes the following:

1. Human resources Qualification standards A/B/S
2. Replacement of employees with ease
3. The amount of manpower that is capable of being met
4. The equipment is always well maintained
5. Ease of damaged goods claim.

Aside from the vision, the Mission of ABS PT which is a policy or measures taken by the company to realize a vision that has been set. The following is the Mission of PT ABS:

1. Produce a skilled workforce and accountable through selective recruitment methods and systematic, comprehensive training, and continuous improvement.
2. Provide Service Providers with Worker commitment and dedication.
3. Improve the quality of management is a tough and progressive.
4. Being the company that opened the ground work for the people of Indonesia.

4.1.2 Organizational Structure PT. ABS

Here is an organizational structure at PT. ABS :

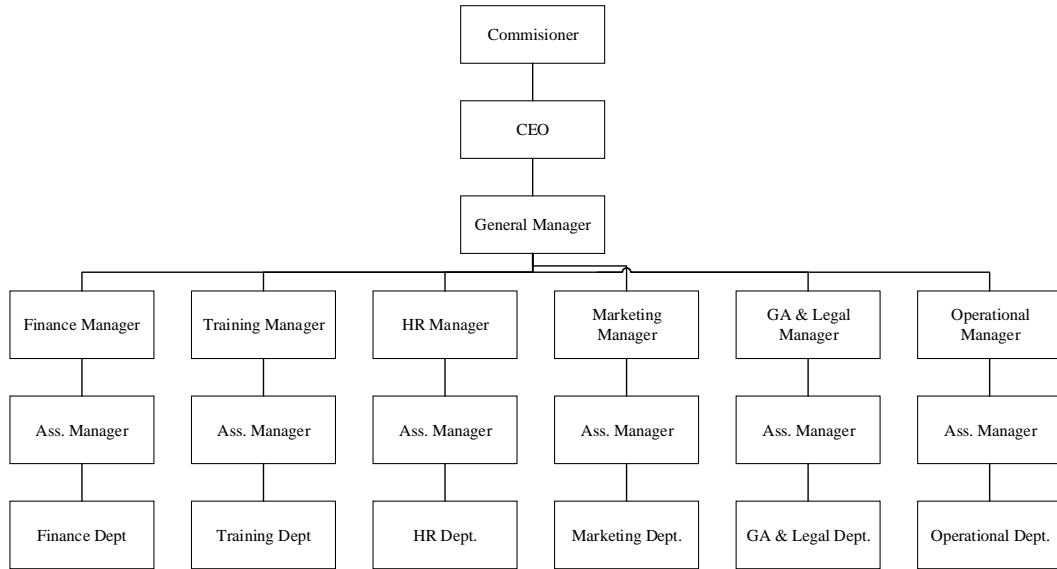


Figure 4. 2 Organizational Structure PT. ABS

Commissioner of PT ABS is a holder of the highest Office, under the Commissioner of the Office of the Director of the holder there. The Director oversees the general manager who has 6 departments in the company. 6 the Department as follows; Finance department, Training department, Human Resource department, Markting department, Legal & GA departments, as well as the Operational department. each Department is headed by a manager who has assistant manager to help the duties.

4.1.3 Recruitment Process

The process of Recruitment of PT ABS done with batch systems. generally 1 batch contains 20 people, and totaled > 3 batch. Recruitment processes as follows:

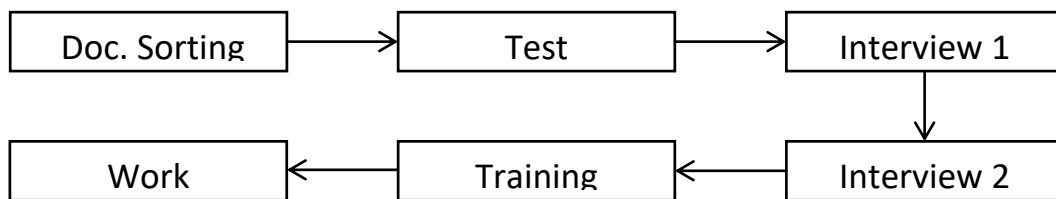


Figure 4. 3 Recruitment Flow

1. Document Sorting

First PT ABS conduct sorting document, and the Labor candidate selection. This aspect of the assessment as well as the suitability of the prospective applicants with predetermined specifications based on the selected type of work

2. Test Psychology

The second selection process, conducted psychological test by using the manual workmanship, given time 90 minutes each batch in completing the questions provided. The results of this test will become the basis of determination of the field work Labor candidates

3. Interview 1

The first interview is conducted by staff of the human resources Department against labor candidates, at the first interview, the questions asked about the experience, as well as assessment of the attitude of prospective workforce

4. Interview 2

The second interview was conducted by a human resources manager and assistant manager of the related fields of work

5. Training

The training process of PT ABS is an advanced process that is implemented by the labour candidate based on field work that had already been determined and agreed to by staff and managers.

6. Work Placement

The final process is the process of work placements, workforce already trained will be placed by PT ABS. Workers will be assigned to the client companies that already make a reservation to the needs of workers of outsourcing.

4.1.4 Job Description

This final project will use a case study of the problem on work placements for General Cleaning and Security which will be sorted by using the basic consideration of the Five Factor Model that was already collected. General Cleaning services janitorial services is thoroughly part of the building, especially of large buildings. This service includes the overall cleanup i.e. floors, Windows, glass – glass, furniture, Air Conditioning, toilet, frames and other parts are still covering from the building. Some of the skills needed to be a general cleaning is able to work in a team, tenacious in doing cleanup in General, capable of using the tools provided, find out how to clean up the materials in accordance with the will be cleaned.

Professional Security Guard security services have several function. These services include deter, observe and report. Generally include maintaining the security of the environment, doing observation against actions that could potentially catch the perpetrators of the crimes, if the occurrence of crimes, do reporting in suspicious case, monitor alarms and cameras supervisors as well as goods. Some skill needed to become a professional security guard is having a sensitivity to the potential dangers, are able to work according the protocol has been created, capable of self-defense in case of crimes.

4.1.5 Recruitment Data

In this subchapter shall contain data used for research recap. The table contains 20 workers which became the test example of the system.

Table 4. 1 Recapitulation Recruitment Data

No	Name	Birthdate	Place of Birth	gender	Address	Educa tion	Major
1	Abika Chairul	09/03/1993	Tangerang	L	Keputih Tegal Timur gg 2 no. 11, Surabaya	SMA	IPS
2	Aga Alfian	5/22/1993	Sidoarjo	L	Jln Simokertogang ix no. 2 RT 4, surabaya	SMK	Perbankan
3	Fikar Muhammad	05/12/1992	Lamongan	L	Margorejo I-G/9, Surabaya	SMA	IPS
4	Mustopa	11/07/1990	Gresik	L	Jl. Tanggulangin 12 Surabaya.	SMA	IPS
5	Rizki Hidayat	10/04/1989	Surabaya	L	Jl. Tambakrejo VI/2 Surabaya.	SMA	IPS
6	Adhitya Prabowo	2/14/1994	Surabaya	L	Jalan Jeruk V no. 129	SMK	Elektronika
7	Ady Theo	10/31/1993	Bangkalan	L	Jln Gunung anyar jaya masjid no. 18	SMK	Elektronika

No	Name	Birthdate	Place of Birth	gender	Address	Education	Major
8	Bagus Lelana	10/23/1993	Semarang	L	Jl. Kyai Tambak Deres No. 252 Surabaya.	SMK	Farmasi
9	Baskoro Ismail	04/09/1993	Sidoarjo	L	Jl. Kedungkandang ix no. 18	SMA	IPS
10	Kausar Abdi	1/18/1993	Sidoarjo	L	Jln Keputih Tegal Timur baru no. 37	SMA	IPS
11	Fikri Hardyan	8/15/1992	Malang	L	Jl. Kupang Gunung IV	SMK	Otomotif
12	Firhan Alfi	8/15/1992	Bangkalan	L	Jln. Wiguna selatan no. 19	SMK	Otomotif
13	Restu Aji	12/04/1995	Surabaya	L	Jln Tambak Madokan Ayu IX no. 12	SMA	IPS
14	Muhammad Alwajdy	03/02/1992	Surabaya	L	Jln Mangga X No. 21	SMA	IPA
15	Muhammad Reza	09/01/1996	Sidoarjo	L	Jln abdul rahman selatan IX no. 22	SMK	Farmasi
16	Revi Alvian	05/02/1992	Surabaya	L	Jln. Delima V no. 29	SMK	Multimedia
17	Noer Aji	12/01/1994	Surabaya	L	Jln sewunggaling iii No. 192	SMA	IPS
18	Fazrur Ramdan	06/02/1996	Nganjuk	L	Jln. Melati ii No. 21	SMK	Multimedia
19	Prasetya Andre	2/25/1994	Malang	L	Jln. Bogi No. 18 surabaya	SMA	IPS
20	Aditama Fajrur	05/04/1993	Lamongan	L	Jln. Dakota IV No. 19 surabaya	SMK	Otomotif

4.1.6 Data Expert & Administrator

The expert system will be filled by staff and the manager of the human resources department PT. ABS. This test using 3 different expert person, the Expert will fill out a detailed questionnaire and ideal criteria questionnaire usability testing to evaluate the system in after expert testing system.

Table 4. 2 Expert Administration data 1

Expert Biodata 1	
<i>Nama</i>	Mada
<i>Jabatan</i>	Manager
<i>Departemen</i>	HRD
<i>Pengalaman Kerja</i>	-

Table 4. 3 Expert Administration Data 2

Expert Biodata 2	
<i>Nama</i>	Danang
<i>Jabatan</i>	Asisten Manager
<i>Departemen</i>	HRD
<i>Pengalaman Kerja</i>	-

Table 4. 4 Expert Administration Data 3

Expert Biodata 3	
<i>Nama</i>	Jessica
<i>Jabatan</i>	Staff
<i>Departemen</i>	HRD
<i>Pengalaman Kerja</i>	2 tahun staff HRD

The table above is that the filling Expert questionnaire entry criteria are ideal for General Cleaning and the type of job Security. The table below displays the data administrator as the holder of the admin on the system

Table 4. 5 Administrator Data

Administrator	
<i>Nama</i>	Erik
<i>Jabatan</i>	Staff
<i>Departemen</i>	Operasional
<i>Pengalaman Kerja</i>	-

The table below is the ideal criteria questionnaire recap of each expert. The data consists of 2 types of jobs are filled by each expert. The data as is follows:

Table 4. 6 Data Recapitulation Criteria Ideal GC & S

Five Factor Model			Expert 1		Expert 2		Expert 3	
			General Cleaning	Security	General Cleaning	Security	General Cleaning	Security
No.	Factor	Sub Factor	Rank	Rank	Rank	Rank	Rank	Rank
1	Extraversion	<i>Activity Level</i>	6	13	2	14	6	7
2		<i>Assertiveness</i>	8	4	19	6	7	8
3		<i>Cheerfulness</i>	9	11	3	10	10	9
4		<i>Excitement seeking</i>	11	10	18	12	12	10
5		<i>Friendliness</i>	17	12	9	11	11	19
6		<i>Gregarious</i>	18	14	8	13	14	11
7	Agreeableness	<i>Altruism</i>	3	9	17	7	13	13
8		<i>Cooperation</i>	4	8	7	9	18	12
9		<i>Modesty</i>	12	7	6	8	15	15
10		<i>Trust</i>	13	22	13	26	19	14
11		<i>Morality</i>	2	24	4	27	16	17
12		<i>Sympathy</i>	5	23	14	29	17	16
13	Conscientiousness	<i>Achievement striving</i>	14	25	5	28	1	6
14		<i>Cautiousness</i>	16	5	16	4	9	18
15		<i>Dutifulness</i>	15	26	15	30	8	5
16		<i>Orderliness</i>	1	6	1	5	2	2
17		<i>Self Discipline</i>	7	3	10	3	4	1
18		<i>Self efficacy</i>	10	2	11	1	3	3
19	Neuroticism	<i>Anger</i>	30	15	30	15	23	20
20		<i>Anxiety</i>	19	1	29	2	20	4
21		<i>Depression</i>	29	27	28	25	24	24
22		<i>Immoderation</i>	23	16	27	17	22	23
23		<i>self consciousness</i>	20	30	12	24	21	4
24		<i>Vulnerability</i>	21	18	26	16	30	22
25	Openness	<i>Adventurousness</i>	22	20	25	19	29	28
26		<i>Artistic Interest</i>	25	29	20	23	5	27

Five Factor Model			Expert 1		Expert 2		Expert 3	
			General Cleaning	Security	General Cleaning	Security	General Cleaning	Security
No.	Factor	Sub Factor	Rank	Rank	Rank	Rank	Rank	Rank
27		<i>Emotionality</i>	24	19	24	20	28	26
28		<i>Imagination</i>	28	21	22	21	25	25
29		<i>Intellect</i>	26	17	21	18	26	29
30		<i>Liberalism</i>	27	28	23	22	27	30

It can be seen from the table above, there are many differences from the ideal criteria entered by the Expert. Conscientiousness is often chosen as the priority on criteria of an ideal job. As an example of conscientiousness, that orderliness sub factor chosen as the factors with the option number 1 twice, and was selected as number 2 twice. a factor of least priority, namely Neuroticism with sub factor Anger that has a rank of 30 twice by two different experts

Table 4. 7 Data Recapitulation FFM Worker Candidate

No	Sub Factor	Abika Chairul	Aga Alfian	Fikar Muhammad	Mustopa	Rizki Hidayat
1	Activity Level	94	88	88	32	61
2	Assertiveness	97	91	68	62	25
3	Cheerfulness	60	43	85	18	14
4	Excitement seeking	88	63	76	1	21
5	Friendliness	24	28	55	59	5
6	Gregarious	27	31	82	50	31
7	Altruism	27	53	88	18	26
8	Cooperation	67	85	76	54	36
9	Modesty	91	49	97	23	62
10	Trust	42	64	32	11	8
11	Morality	6	54	67	28	2
12	Sympathy	80	58	32	21	58
13	Achievement striving	29	61	8	18	8
14	Cautiousness	47	71	24	14	47
15	Dutifulness	67	87	70	22	16
16	Orderliness	40	64	48	8	2
17	Self Discipline	42	59	54	77	52
18	Self efficacy	17	80	71	71	71
19	Anger	82	47	87	24	35

No	Sub Factor	Abika Chairul	Aga Alfian	Fikar Muhammad	Mustopa	Rizki Hidayat
20	Anxiety	30	31	22	87	9
21	Depression	55	59	32	67	59
22	Immoderation	21	37	11	73	37
23	self consciousness	68	69	79	91	87
24	Vulnerability	41	55	52	22	17
25	Adventurousness	43	5	18	69	29
26	Artistic Interest	25	71	2	49	57
27	Emotionality	56	42	90	12	0
28	Imagination	95	73	95	15	7
29	Intellect	1	57	10	11	10
30	Liberalism	60	42	55	60	79

Table 4. 8 Data Recapitulation FFM Worker Candidate 2

No	Sub Factor	Adhitya Prabowo	Ady Theo	Bagus Lelana	Baskoro Ismail	Kausar Abdi
1	Activity Level	37	61	54	65	83
2	Assertiveness	34	45	62	79	98
3	Cheerfulness	65	23	74	50	14
4	Excitement seeking	86	48	54	27	40
5	Friendliness	69	10	87	47	5
6	Gregarious	58	20	88	27	6
7	Altruism	67	16	6	85	3
8	Cooperation	85	50	67	18	67
9	Modesty	36	83	86	86	78
10	Trust	76	8	19	19	32
11	Morality	79	10	18	18	28
12	Sympathy	80	7	9	9	30
13	Achievement striving	61	28	42	42	42
14	Cautiousness	93	9	20	20	37
15	Dutifulness	58	35	32	32	44
16	Orderliness	77	20	55	55	40
17	Self Discipline	37	84	62	62	22
18	Self efficacy	20	80	42	42	42
19	Anger	47	79	82	82	17
20	Anxiety	31	80	71	71	9
21	Depression	7	45	55	55	55
22	Immoderation	62	62	13	13	40

No	Sub Factor	Adhitya Prabowo	Ady Theo	Bagus Lelana	Baskoro Ismail	Kausar Abdi
23	self consciousness	69	92	85	85	24
24	Vulnerability	34	62	14	14	24
25	Adventurousness	29	58	43	43	31
26	Artistic Interest	57	57	2	2	62
27	Emotionality	18	42	20	20	12
28	Imagination	34	73	67	67	45
29	Intellect	43	18	1	1	39
30	Liberalism	19	55	82	82	23

Table 4. 9 Data Recapitulation FFM Worker Candidate 3

No	Sub Factor	Fiktri Hardyan	Firhan Alfi	Restu Aji	Muhammad Alwajdy	Muhammad Reza
1	Activity Level	17	81	61	81	37
2	Assertiveness	10	77	68	83	57
3	Cheerfulness	34	11	90	41	0
4	Excitement seeking	63	48	86	45	12
5	Friendliness	28	28	80	33	0
6	Gregarious	12	71	71	29	0
7	Altruism	9	4	97	20	0
8	Cooperation	85	50	92	34	24
9	Modesty	83	1	83	83	83
10	Trust	15	17	90	28	10
11	Morality	17	54	79	40	17
12	Sympathy	32	13	97	20	0
13	Achievement striving	16	1	87	47	8
14	Cautiousness	9	16	47	30	5
15	Dutifulness	35	47	96	33	47
16	Orderliness	48	64	98	27	98
17	Self Discipline	75	49	47	50	94
18	Self efficacy	80	71	39	43	92
19	Anger	87	70	92	61	99
20	Anxiety	22	31	41	41	92
21	Depression	59	45	21	62	7
22	Immoderation	73	17	17	26	89

No	Sub Factor	Fiktri Hardyan	Firhan Alfi	Restu Aji	Muhammad Alwajdy	Muhammad Reza
23	self consciousness	79	45	45	77	96
24	Vulnerability	65	62	41	18	15
25	Adventurousness	18	43	43	74	2
26	Artistic Interest	90	29	43	40	10
27	Emotionality	42	57	70	42	18
28	Imagination	73	60	34	29	95
29	Intellect	43	81	18	4	0
30	Liberalism	42	29	19	27	42

Table 4. 10 Data Recapitulation FFM Worker Candidate 4

No	Sub Factor	Revi Alvian	Noer Aji	Fazrur Ramdan	Prasetya Andre	Aditama Fajrur
1	Activity Level	37	26	61	17	72
2	Assertiveness	57	17	34	10	45
3	Cheerfulness	68	71	28	34	65
4	Excitement seeking	12	63	76	63	48
5	Friendliness	99	41	5	28	69
6	Gregarious	100	58	58	12	58
7	Altruism	97	67	26	9	67
8	Cooperation	24	85	36	85	76
9	Modesty	5	95	62	83	83
10	Trust	23	62	48	15	25
11	Morality	17	7	17	17	2
12	Sympathy	99	58	88	32	13
13	Achievement striving	8	16	44	16	61
14	Cautiousness	80	96	35	9	47
15	Dutifulness	47	58	70	35	58
16	Orderliness	0	48	64	48	64
17	Self Discipline	17	49	47	75	30
18	Self efficacy	20	39	50	80	20
19	Anger	1	79	84	87	25
20	Anxiety	22	31	62	22	41
21	Depression	90	1	21	59	7
22	Immoderation	11	97	11	73	62
23	self consciousness	22	33	33	79	45

No	Sub Factor	Revi Alvia	Noer Aji	Fazrur Ramdan	Prasetya Andre	Aditama Fajrur
24	Vulnerability	15	65	77	65	62
25	Adventurousness	83	29	58	18	58
26	Artistic Interest	10	95	95	90	18
27	Emotionality	18	42	42	42	70
28	Imagination	0	95	95	73	34
29	Intellect	57	10	10	43	43
30	Liberalism	42	19	19	42	79

4.2 Data Processing

In this subchapter will discuss about the diagram that illustrates the look of the system in General by using a couple of diagrams such as data flow diagrams, information flowchart, use case diagrams, class diagrams, and activity diagrams

4.2.1 Tables

In MySQL a Tables is used as a database that used to store data about a certain subject, such as customers and order. A database will contain many tables, which is each table will contain of storing information about a different subject. In DSS FFM, there is five tables and the list of tables can be seen in below.

Table Name	Fields and Data Types
seleksi_karyawan user	id: int(11), username: varchar(10), password: varchar(10), role: varchar(20)
seleksi_karyawan ekspert	id: int(11), nama: varchar(100), perusahaan: varchar(100), jabatan: varchar(100), peringkat: varchar(300), fk_rek: int(11), posisi: int(11)
seleksi_karyawan kandidat	id: int(11), nama: varchar(100), tgl: date, lahir: varchar(50), gender: varchar(1), alamat: varchar(200), pendidikan: varchar(10), jurusan: varchar(50), univ: varchar(100), hp: varchar(15), pengalaman: varchar(300), hasil: varchar(110), fk_rek: int(11), topsis: float, topsis2: float
seleksi_karyawan rekrutmen	id: int(11), nama: varchar(100), tanggal: date, status: varchar(5)
seleksi_karyawan kriteria	id: int(11), nama: varchar(300)

Figure 4. 4 List of Tables in DSS

figure 4.3 there are 5 table system used on the DSS, the User table, Expert table, Candidate tables, table, and Recruitment Criteria Table. Total data types used by the DSS system is 21 data

	id	nama	perusahaan	jabatan	peringkat	fk_rek	posisi
<input type="checkbox"/>	1	expert1	PT. X	expert1	item[]=6&item[]=8&item[]=9&item[]=11&item[]=17&ite...	1	2
<input type="checkbox"/>	2	expert2	PT. X	expert2	item[]=2&item[]=19&item[]=3&item[]=18&item[]=9&ite...	1	2
<input type="checkbox"/>	3	expert3	PT. X	expert3	item[]=6&item[]=7&item[]=10&item[]=12&item[]=11&it...	1	2
<input type="checkbox"/>	9	expert1	PT. X	expert1	item[]=13&item[]=4&item[]=11&item[]=10&item[]=12&i...	1	1
<input type="checkbox"/>	10	expert2	PT. X	expert2	item[]=14&item[]=6&item[]=10&item[]=12&item[]=11&i...	1	1
<input type="checkbox"/>	11	expert3	PT. X	expert3	item[]=7&item[]=8&item[]=9&item[]=10&item[]=19&ite...	1	1

Figure 4. 5 Tables of Expert

the figure above is the expert table which been updated by the expert on the system, there are the columns id, name, company, and ranking criteria

	id	nama	tgl lahir	gender	alamat	pendidikan	jurusan	univ	hp	pengalaman	hasil	fk_rek	topsis	topsis2
<input type="checkbox"/>	28	Abka Charul	1993-04-03	Tangerang	L	Kepaith Tegat Timur gg 2 no. 11, Surabaya	SMA	IPS	87387746013	Cleaning Service	84-28-88-83-87-84-87-80-88-24-27-27-87-81-43-6-85-	1	0.300472	0.350788
<input type="checkbox"/>	28	Apa Allan	1993-05-22	Sidoarjo	L	Jln Simoketopang no.2 Rt.4 Surabaya	SMK	Peternakan	-	Pelayan	80-81-81-81-81-88-81-43-83-28-31-83-85-48-81-84-50-	1	0.322027	0.411001
<input type="checkbox"/>	30	Fikar Muhammal	1992-05-12	Lamongan	L	Mangrove I-G9, Surabaya	SMA	IPS	-	Pelayan	78-88-14-87-84-88-88-88-78-88-83-88-78-87-32-87-32-	1	0.404899	0.432733
<input type="checkbox"/>	32	Mustopa	1990-11-07	Gresik	L	J. Tanggulangin 12 Surabaya	SMA	IPS	-	Genes-bersih	32-44-48-18-18-32-82-18-1-88-50-18-54-23-11-26-21-	1	0.301408	0.308645

Figure 4. 6 Tables of Candidate Worker

the figure above is the table containing the names of prospective workers, date of birth, gender, address, education, departments, universities, mobile phone number, experience, and results uploaded FFM on the system

	id	nama
<input type="checkbox"/>	1	A tendency to become individuals who follow a vari...
<input type="checkbox"/>	2	A tendency to become individuals who are assertive...
<input type="checkbox"/>	3	A tendency to be a positive individual
<input type="checkbox"/>	4	A tendency to become individuals who are looking f...
<input type="checkbox"/>	5	The tendency to be the individual who is easy to g...
<input type="checkbox"/>	6	A tendency to become individuals interact with man...
<input type="checkbox"/>	7	An individual's tendency to be generous and help p...
<input type="checkbox"/>	8	the tendency to be the individual who is easy to w...
<input type="checkbox"/>	9	A tendency to become individuals who are simple an...
<input type="checkbox"/>	10	The tendency to be the individual who trust the ot...

Figure 4. 7 Tables of Ideal Criteria

The figure 4.7 above is the ideal criteria table contains 30 sub factor Five Factor Model.

	id	nama	tanggal	status
<input type="checkbox"/>	1	Security and General Cleaning Recruitment	2018-05-28	Open

Figure 4. 8 Tables of Recruitment Form

The figure above is table job vacancies, on the table contains the name, date of recruitment, and the status of recruitment

	id	username	password	role
<input type="checkbox"/> Edit Copy Delete	1	admin	admin	admin
<input type="checkbox"/> Edit Copy Delete	2	expert	expert	expert

Figure 4. 9 Tables of User

The figure above is the table for user, it consisted of username, password, and role on the system.

4.2.1 Entity Relationship Diagram

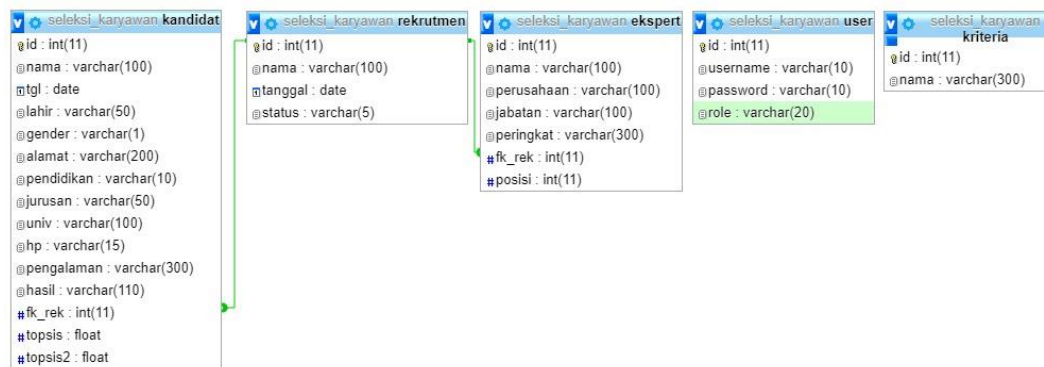


Figure 4. 10 Entity Relationship Diagram

There are 5 table which is used on the system. Interconnected table is the table of candidates, expert and Recruitment.

Table 4. 11 Entity Relationship Diagram

Relations hip	Entity	Description
Many to One	Candidate - Job Recruitment	Many candidate able to fill one recruitment at the same time
One to Many	Job Recruitment - Expert	One Job Recruitment filled with more than one expert

The relationship in the table is one recruitment are filled with more than 1 worker, and also one recruitment are filled with more than one Expert. Both relationship are many to one.

4.2.2 Flowchart System

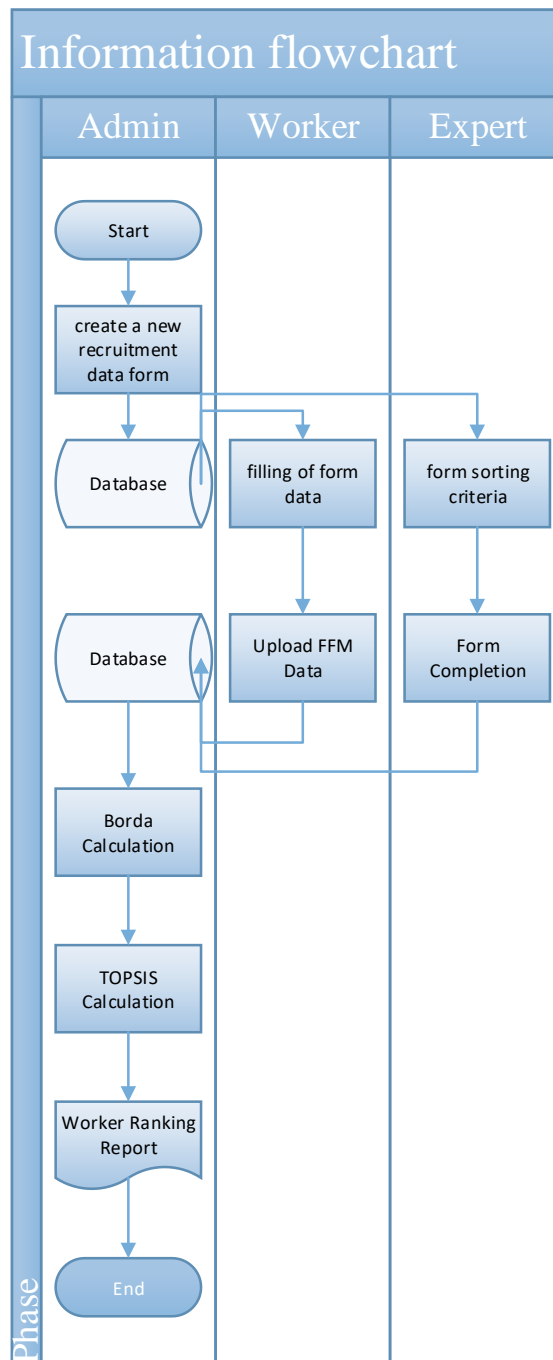


Figure 4. 11 Information Flow Chart

The above flowchart depicts the flow of information against entities and system. There are three entities that conduct the interaction in the system, namely, Administrator, Expert, and Worker. The flow of information starting with the administrator doing the job form creation system, the data will then be input to the system and is stored in the database, after the job form is created, the expert will fill

the ideal criteria on the system with login on the system and do drop n drag and select the type of work that is already displayed by the system, after composing the ideal criteria, the Expert will update in the data in the form of your name, company, position, and form vacancy election. The work would conclude with submitting so that the data will be stored in the system. At the same time, the worker able to perform to fill the identity in the system which containing name, place of birth, date of birth, gender, address, the last education, department and the university, the cellphone number, work experience, the selection form jobs, as well as upload the Five factor model with formal. html on the system. Click the submit button and data would be stored in the system.

The system will perform calculations by using the Borda method for calculating the weights of the criteria of an ideal that has already entered into the system by the Expert. The result of such data will become the knowledge input towards the next TOPSIS calculation will be performed. After conducting the calculation of Borda weight, the system will calculate the TOPSIS by using knowledge of the input from the results of the calculation of the Borda and the Five factor model of every worker. The data flow will be the last report that can be accessed by the administrator, the format of the results will contain a sequence of worker the best indicator of the highest value to the lowest. Those results will be one indicator assessment of Worker Candidates that includes admission to one aspect of assessment of PT ABS.

4.2.3.1 Data flow Diagram level 0

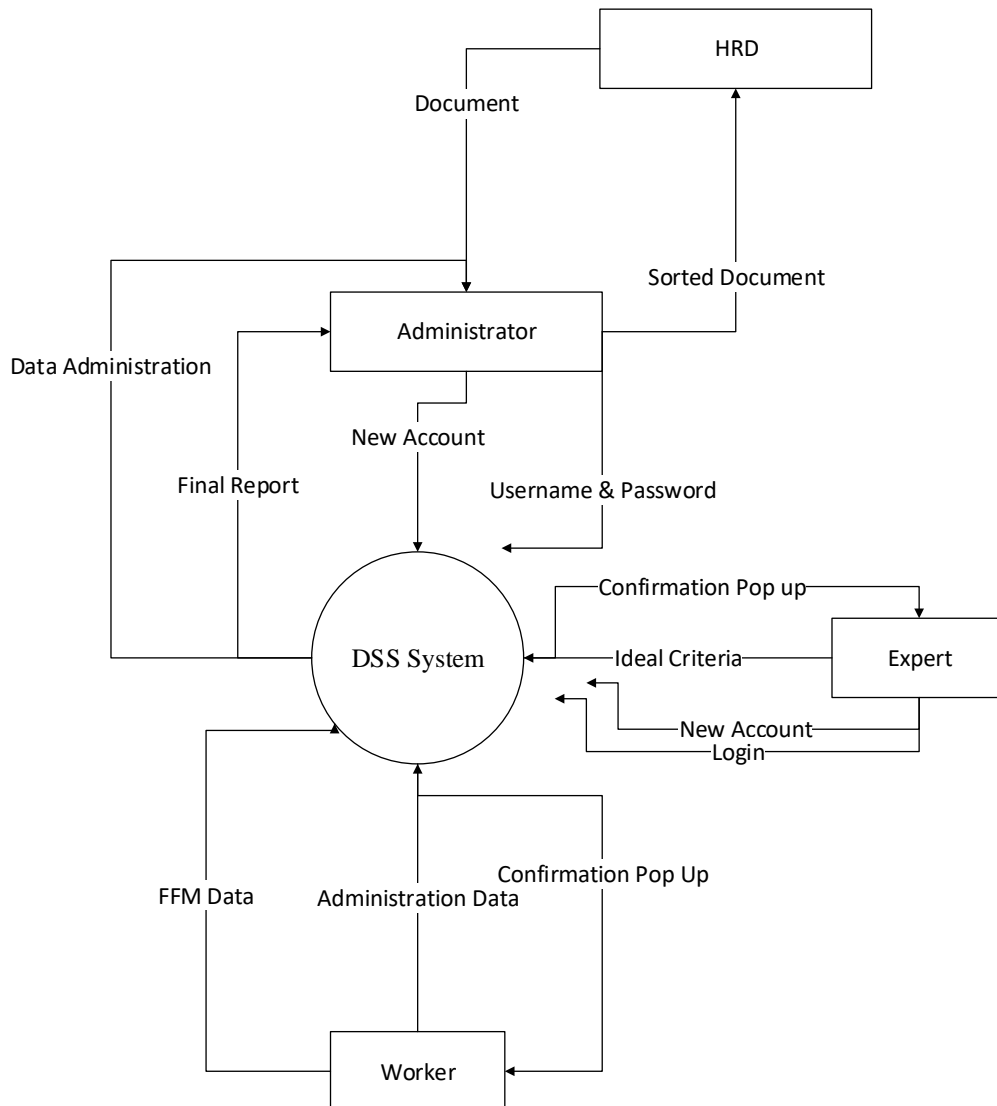


Figure 4. 12 Data Flow Diagram Level 0

Based on the figure above, it can be seen that the data flow diagram of level 0 is a process flow that is traversed by the data on the system. In the main proceedings there are several DSS that must be traversed by the entity. The main processes in the system of DSS is to sort prospective labor ideal use FFM as indicator assessment. There are three entities at DSS, that Administrator, Expert, and the Labor candidate. DSS system begins with the process of making a recruitment form created by the administrator, and the Expert will fill the ranks of the ideal 30 criteria the five factor model by performing a drag n drop DSS systems. Followed by Labor candidate do fill out the form the data themselves, and do the uploading of data the Five factor model who has done before. DSS systems will

perform calculations Borda and TOPSIS to compute the final result against Labor candidate at best. The last process i.e. the administrator will get the best Labor candidate sequences based on the criteria already established by the expert and is completed by a Labor candidate.

4.2.3.2 DFD Level 1

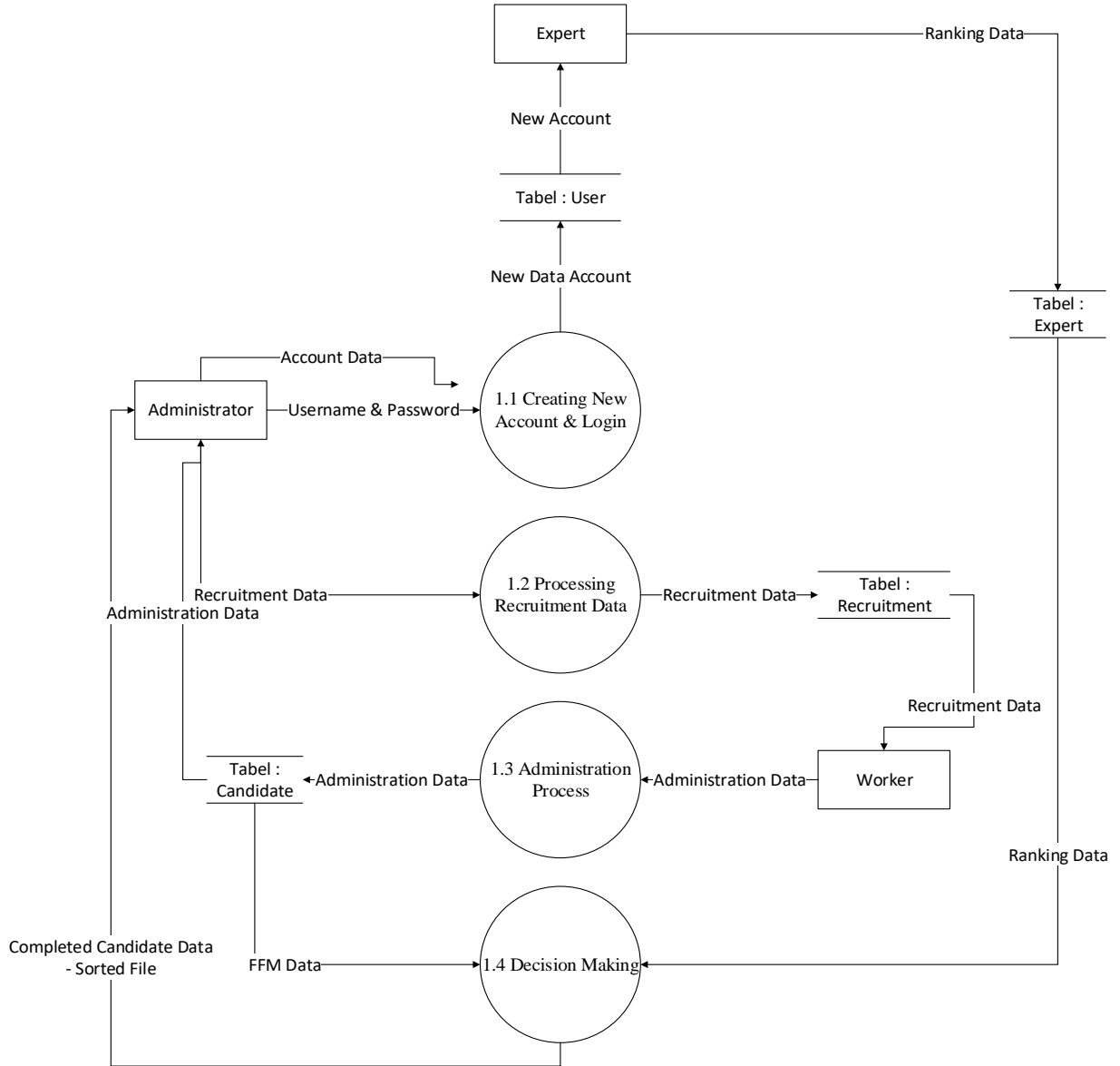


Figure 4. 13 Data Flow Diagram Level 1 Job Form

Administrator login create form DSS system jobs, such data will be stored on a database table Vacant. The Labor candidate completing the job form worker.

4.2.3.3 DFD Level 1 Registration & Login

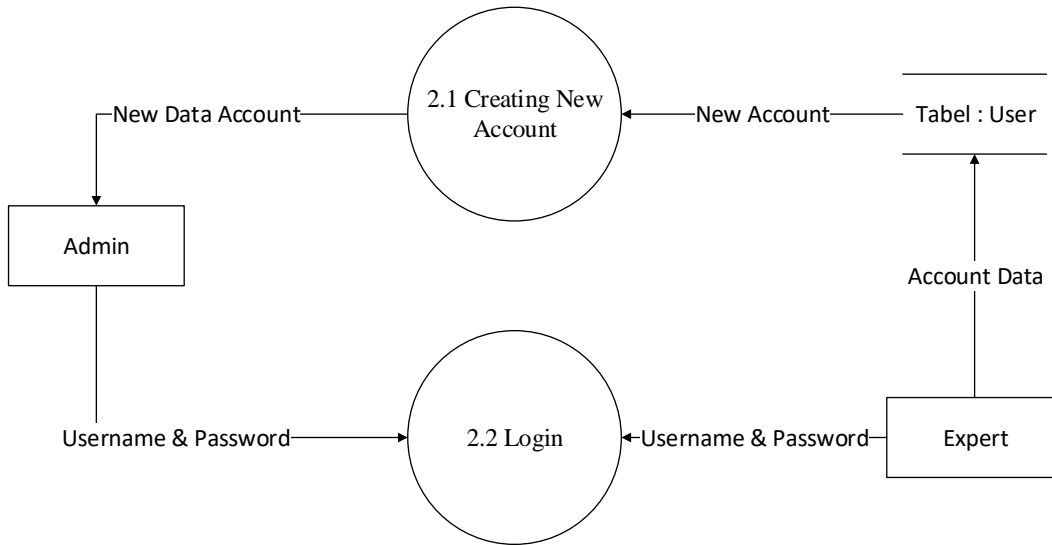


Figure 4. 14 Data Flow Diagram Registration & Login

Data Flow Diagram level one is start with expert fill the ranking ideal criteria by dragging and dropping on the order based on the five factor model. Thus the after fill the criteria ideal the data is stored to the table criteria. Next is the expert would fill name, position, company, and experience. The data will be deposited on the table Expert. Data ranking thus is calculated using the ideal method of borda method used to calculate the weight of each criterion ranking origin from expert who has been placed on the system.

4.2.3.4 DFD Level 1 Processing Recruitment Data

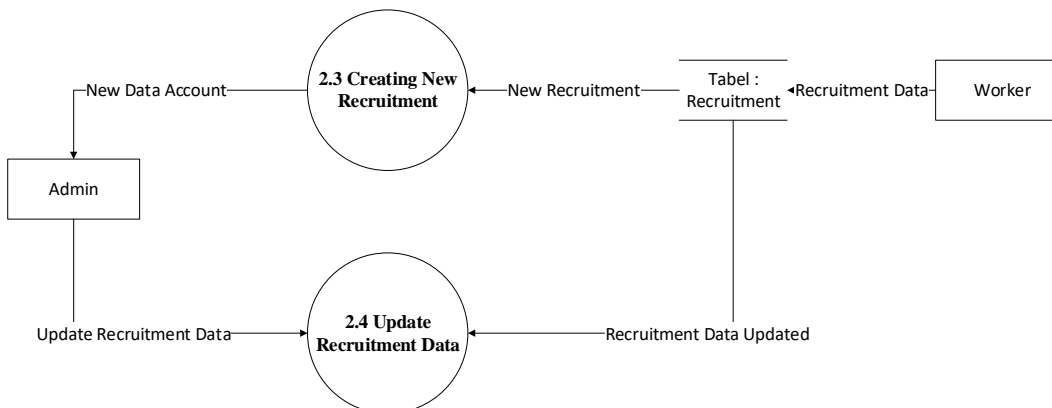


Figure 4. 15 Data Flow Diagram Processing Recruitment Data

The labour candidate will be doing data input administration, after filling the data in accordance with data that has been collected on the initial documentation

process. After filling the requirement data, Labor candidate will upload Five factor model file with format .html on DSS systems.

4.2.3.5 DFD Level 1 Administration Process

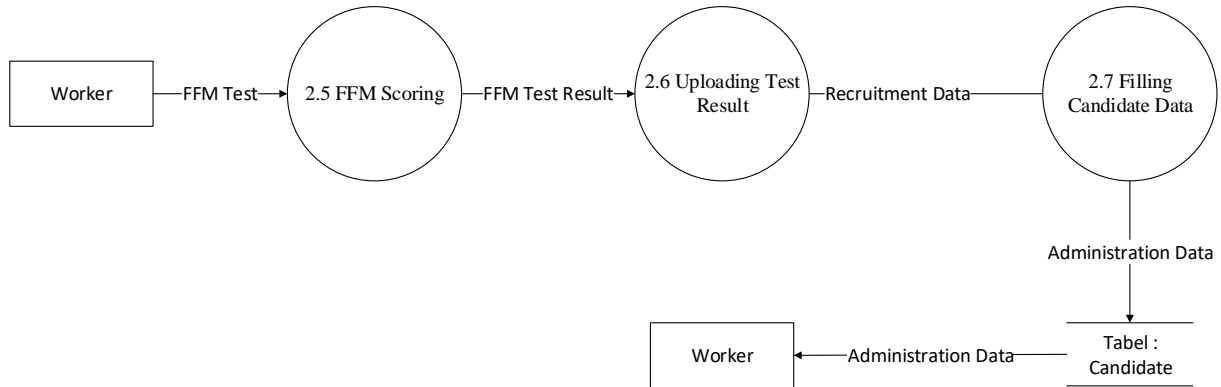


Figure 4. 16 Data Flow Diagram Administration Process

In this process, will be performed the calculation order of ideal solution by calculating the data of the Five factor model and do the calculation with the Borda method is the result of which was the calculation of the weighting of the expert. The result of the calculation will be deposited on TOPSIS table worker and became the candidate summary report containing order data on those areas of work.

4.2.3.6 DFD Level 1 Final Report

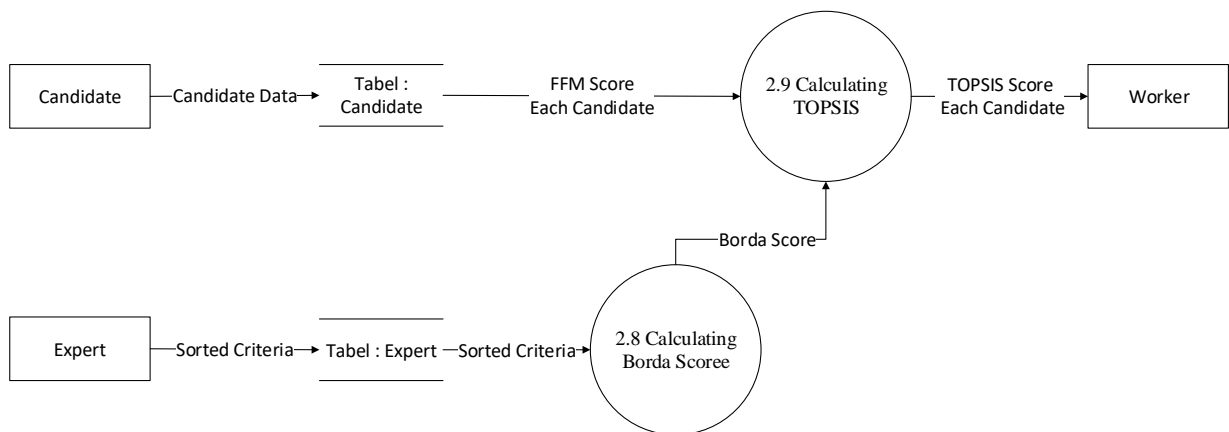


Figure 4. 17 Data Flow Diagram Final Report

4.2.4 Use Case Diagram

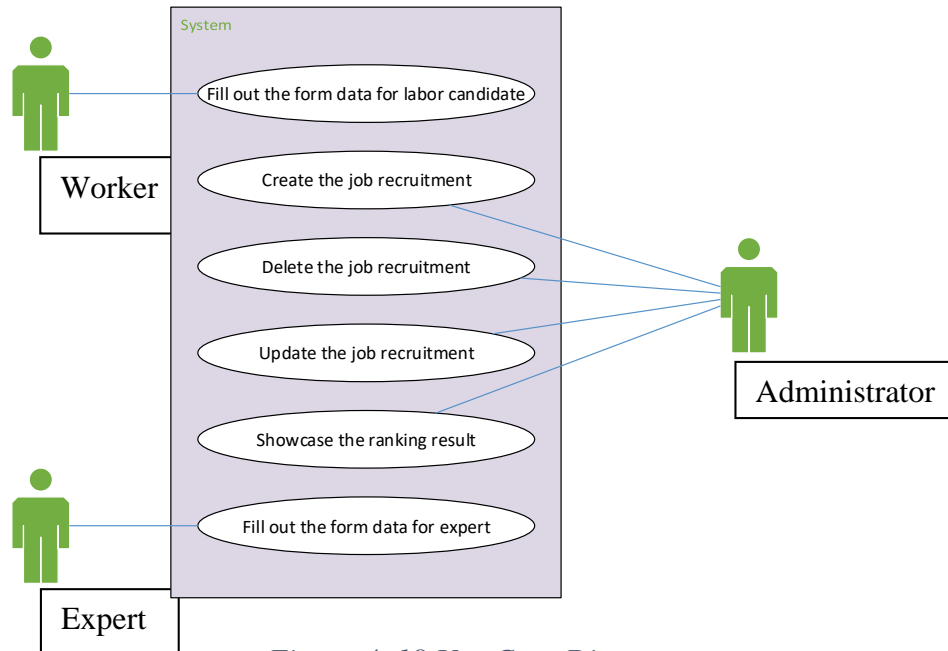


Figure 4. 18 Use Case Diagram

Use case diagram is a diagram that is used to view the outline, described a system widely and easily understood, represent between entities with the system. Based on the above model, then it can be described with the following explanation.

Table 4. 12 Entity Administrator

Entity	Administrator
System Privilege	Create Job Recruitment
	Delete Job Recruitment
	Update Job Recruitment
	Showcase Job Recruitment

Administrator able to create the jobs form, deleting the jobs form, update jobs form, and showcase the final result of the Labor candidate.

Table 4. 13 Entity Expert

Entity	Expert
System Privilege	Update Adm. Data & Ideal Criteria

Expert entities is the staff / manager of the human resources of PT ABS. Expert has the right i.e. update the data, and sort criteria of an ideal criteria for the job. A form can contain multiple job expert

Table 4. 14 Entity Worker

Entity	Worker
System Privilege	Update Adm. Data & Uploading data

Worker candidate do the data yourself and upload the results of IPIP NEO 120 completed.

4.2.5 Activity Diagram

Activity diagrams are created to provide technical information on the system. Activity diagram made based on use case which became a reference for it. There are 6 activity diagram in accordance with 6 main functions made on use case diagram. The activity diagram as follows below:

4.2.5.1 Add Worker Candidate

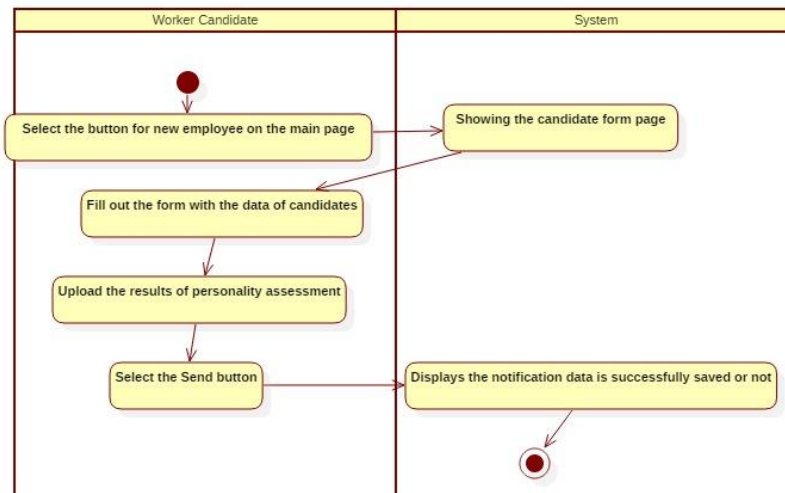


Figure 4. 19 Activity Diagram Add Recruitment

The figure above shows the activity diagram in doing the addition of Labor candidate. The first is to click the button ' new employee ' on the main page, then will come the candidate form on the system. The candidate filling the data, and upload the results of the FFM has been done, and then click the button ' send ' to collect files. The system will confirm with the advent of the screen if the data has been saved or not.

4.2.5.2 Sort Ideal Criteria for Expert

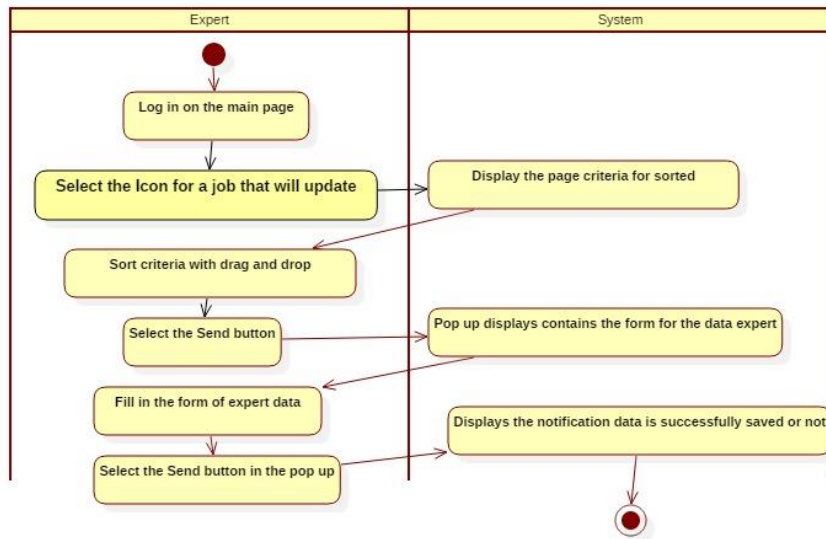


Figure 4. 20 Activity Diagram Sorting Ideal Criteria

The figure above is an activity diagram to do sequencing ideal criteria on the system conducted by the Expert. The expert will do the login on the main page of the DSS system, then the display will appear the criteria that will be sorted. the expert will do ordering with drag n ' drop according to the criteria of the job. Click the button ' send ', next comes the data expert containing the administrative data such as name, company, position, and the name of the ideal criteria. Click the button ' Send ' on the pop up display a notification appears, and if the data has been successfully saved or not.

4.2.5.3 Worker Candidate Registration Form

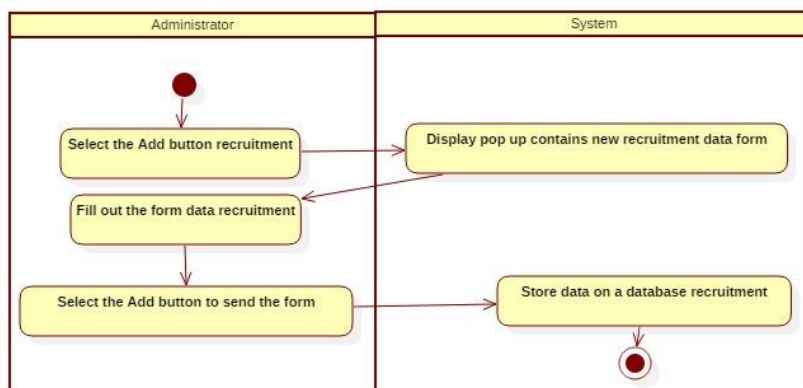


Figure 4. 21 Activity Diagram Candidate Registration Form

The figure above is an activity diagram to do data is performed by the worker. The first worker would choose option ' worker candidate ' on the main menu, then be directed to the private Labor candidate form, completed by doing the upload on the results of the five factor model in the form of html to the system.

4.2.5.4 Worker Candidate data update

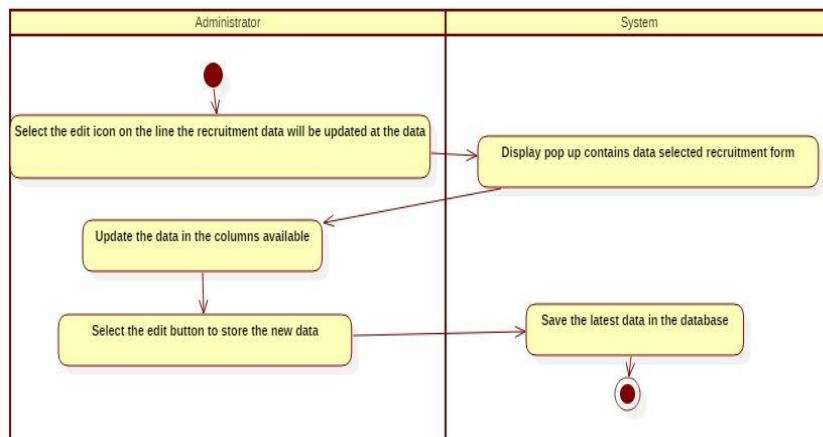


Figure 4. 22 Activity Diagram Data Update

The administrator will log on to the system, which will then be directed to a menu that contains form jobs that have been created. The administrator able to perform by clicking on the figure of the pencil icon to edit the jobs on the form, there are three icons i.e. cross/cross, pencils, and paper. Pencil icon will do the edit in the form requirement, then cross will do the removal form vacancies, then the paper will present the results of the calculation.

4.2.5.5 Delete data recruitment form

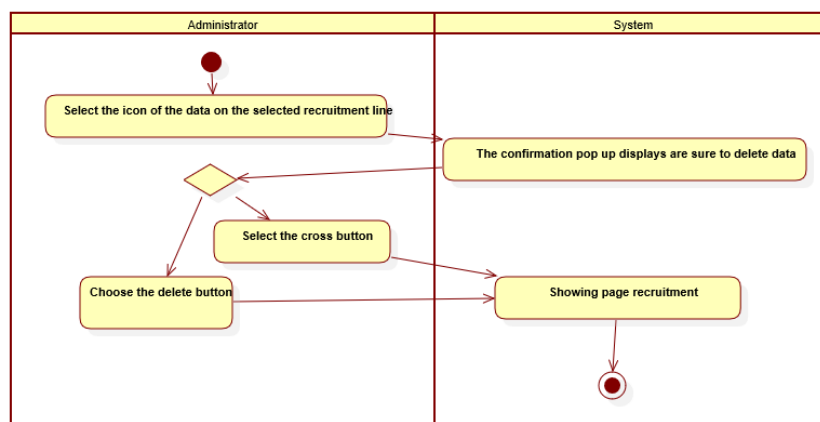


Figure 4. 23 Activity Diagram Delete Data Form

The administrator can perform the deletion of data on recruitment. First click the edit icon on a specific recruitment data, the confirmation pop up window will appear, click on the ' cross ' to thwart, and click ' delete ' to delete data.

4.2.5.6 Showcase the final report

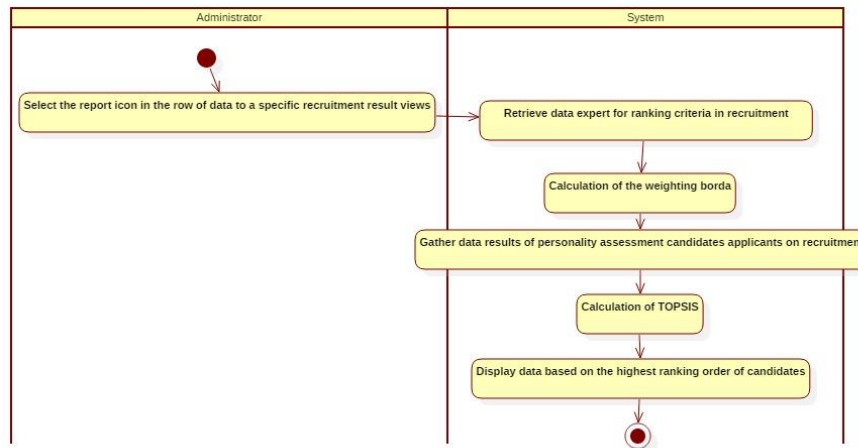


Figure 4. 24 Activity Diagram Final Report

Administrator displays the best Labor candidate data, this can be done by the administrator entity only. The administrator will perform the click on the icon ' report ', then the system will pick up the next recruitment data, calculate the Borda input obtained from some expert. Subsequently collect data and calculate the FFM recruitment data TOPSIS as the Labor candidate for the final assessment system will sort the data based on the results of the highest to the lowest score.

4.2.6 Class Diagram

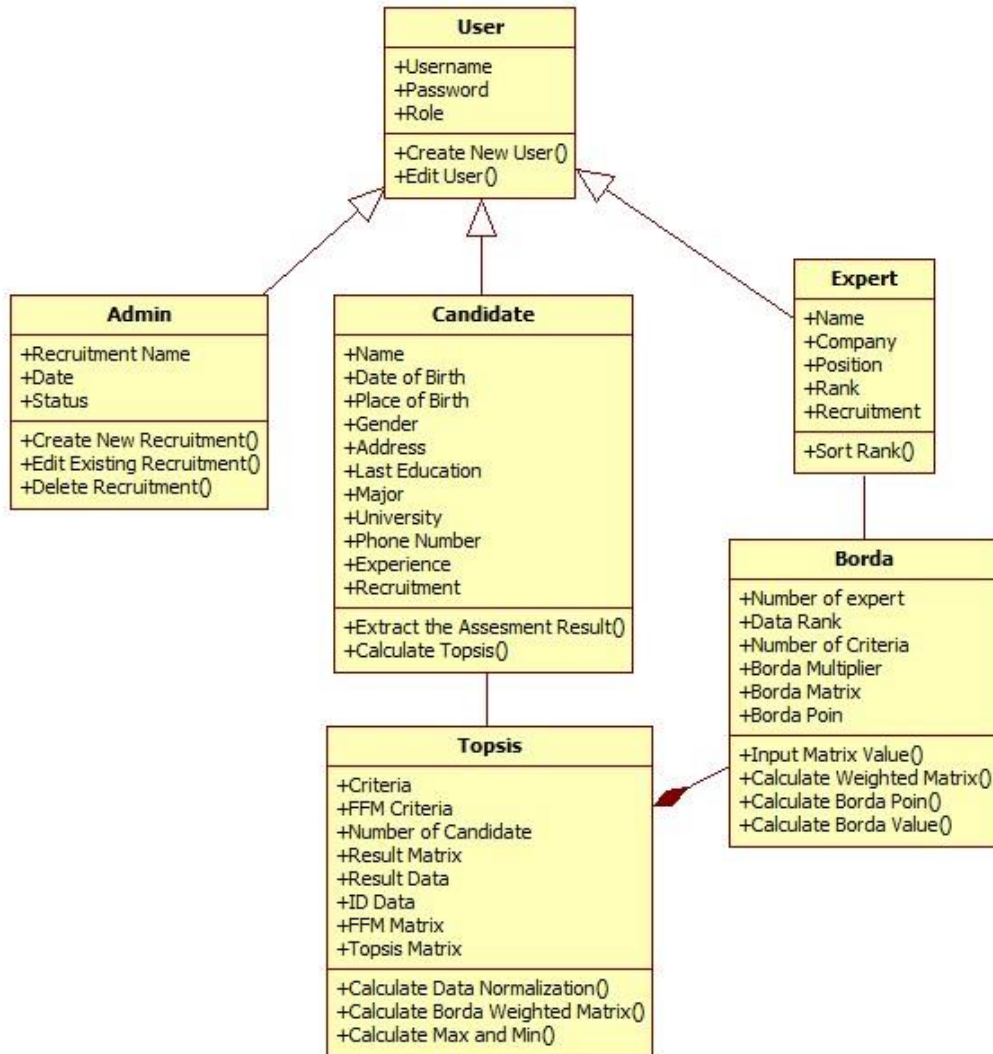


Figure 4. 25 Class Diagram

Class diagram above is a figure that shows the system based on the attribute, the operations involved, and the relationships between objects. Expert and Administrator has user, worker does not have a user login. Simply by doing the submit bio and uploaded the results of the FFM. The expert has to draw up the ideal criteria that will become the input borda method. At the borda do calculation value obtained to borda became the input to the calculation of TOPSIS. The data obtained from the entity worker i.e. FFM will be the main input from the DSS systems.

4.3 Interface System

In this subchapter will feature a DSS are made. the explanation will be divided accordingly the entities that exist in the system.

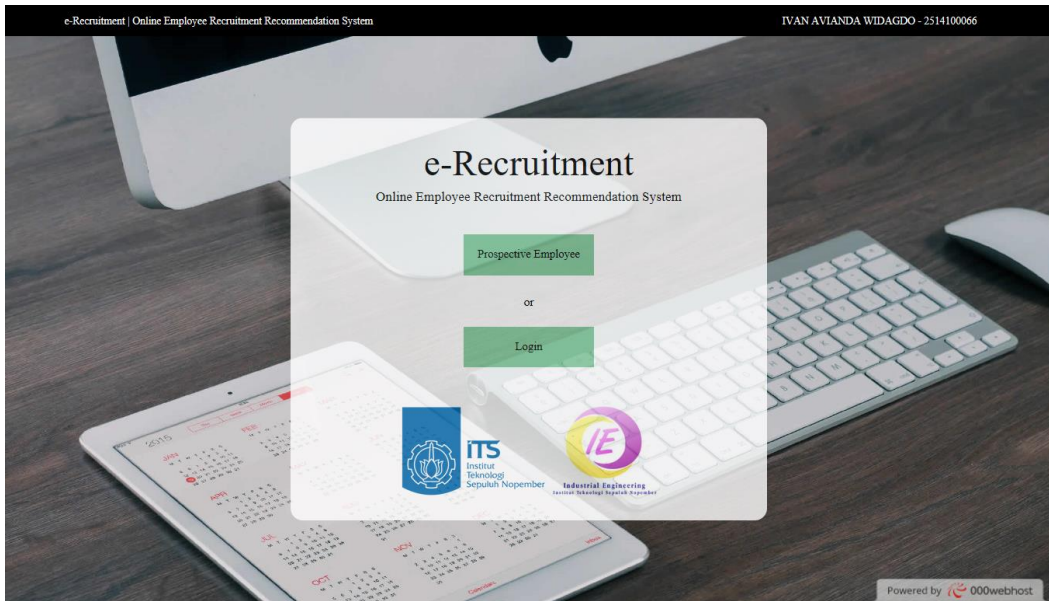


Figure 4. 26 Main Menu Interface

In the figure above is a picture of the main menu on the DSS system. minimalist design for ease of usage and user friendly interface, users will instantly understand and minimize user errors.

Figure 4. 27 Pop Up Login

the login page is made up of the column username and password. users simply login and click the login button to proceed into the system. The figure below is an example of a login page that already completed

The image shows a login window with the following elements:

- Title:** Login
- Username:** A text input field containing the text "admin".
- Password:** A password input field with masked characters ".....".
- Button:** A green rectangular button labeled "Login".

Figure 4. 28 Example of Completed Administrator Data ID

List of Recruitment Data

[New Recruitment](#)

No.	Name	Date	Status			
1.	Security and General Cleaning Recruitment	28 May 2018	Open			
2.	New Recruitment	23 Jun 2018	Open			

Figure 4. 29 Administrator Menu

The figure above is the main menu if the login using administrator user. the look is simple and user-friendly, there are buttons for new recruitment and display the column number, name, date, status, as well as the animated icons which have a function to do the edit, delete, and view final report.

Figure 4. 30 Pop Up New Recruitment Form

Figure 4. 31 Example of Completed New Form Data

The figure above is an example of the form recruitment page which is already completed. There is a column name and date of recruitment

Figure 4. 32 Pop Up New Recruitment Form 2

The above display is a pop up if a click on the button new recruitment. There is a column name, and date. Pressing the add button will resume on the system and the form will appear in the main menu system

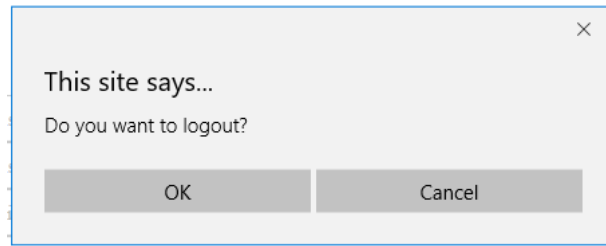


Figure 4. 33 Pop Up Log Out

Pop up above will appear if the user is an administrator or expert click on the logout button on the top right column. the confirmation pop up window will appear containing the question if the user wants to exit the system

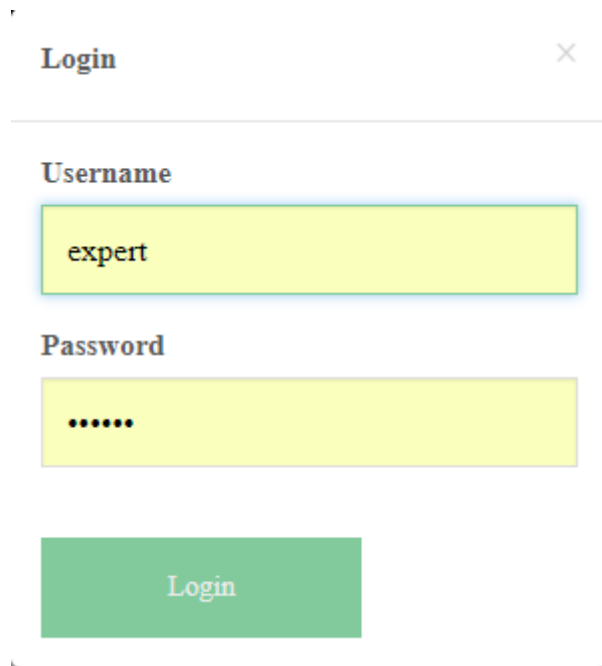


Figure 4. 34 Example of Completed Expert ID

The figure above is a sample Login form page that is already completed. There is a column name, and the password

Expert Form [Close]

Name
Mada

Company
PT. ABS

Position
Manager HRD

Recruitment
Security and General Cleaning Recruitment 28 May 2018

Submit

Figure 4. 35 Example of Completed Administration data Expert

The figure above is an example of the Expert form recruitment page which is already completed. There is a column name, company, position, and a column of the selection of job vacancies.

© Recruitment | Online Employee Recruitment Recommendation System [Logout]

Expert Form

Please select the job most important.
Here are 30 criterias that should be
Ordering can be done by drag and drop.

1. A tendency to become individuals who follow a variety of activities with high spirits
2. A tendency to become individuals who are assertive, responsible, and lead others
3. A tendency to be a positive individual
4. A tendency to become individuals who are looking for sensation and likes taking risks
5. The tendency to be the individual who is easy to get along and spread the love
6. A tendency to become individuals interact with many people and had many friends
7. An individual's tendency to be generous and help people
8. the tendency to be the individual who is easy to work together
9. A tendency to become individuals who are simple and humble
10. The tendency to be the individual who trust the other individual
11. A tendency to be mean and purposeful individual who really
17. A tendency to be eccentric individuals & rare

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Figure 4. 36 Expert Interface Sorting Criteria Ideal

14.	The tendency to be the individual who thinks before acting
15.	A tendency to be a living principle of holding individual & promise
16.	A tendency to be the individual who is being obedient to regulations & capable of organizing themselves to the environment
17.	The tendency to be the individual who was working quickly, focus & capable of self-regulating
18.	A tendency to be individuals working effectively and the wisdom of doing things
19.	A tendency to become individual anger and frustration
20.	A tendency to become individuals who are restless and full of fear
21.	A tendency to be individuals who have experienced depression than normal individuals
22.	A tendency to be individuals who are not able to control the desire
23.	A tendency to become individuals who are embarrassed, uncomfortable around and feel inferior
24.	A tendency to become individuals dependent on others, it's easy to give up and not able to deal with stress
25.	A tendency to become individuals who try new things
26.	The tendency to be the individual who loves beauty and joints
27.	The tendency to be the individual who is able to realise and explore their own feelings and emotions
28.	A tendency to be individuals who have high imagination and active
29.	A tendency to be individuals who have ideas new ideas of doing things
30.	A tendency to become individuals who think open & discuss new things


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Figure 4. 37 Expert Interface Sorting Criteria Ideal 2

The figure above is an interface on the system at the time of login using user Expert. The system will bring up the display criteria ideal of numbers from 1 to 30. in the column above, there is a selection for the type of work the charging criteria should ideally. The expert will do drag n drop on the system, the top position is the position of the most priority and sort to the bottom

Expert Form ✕

Name

Company

Position

Recruitment

Figure 4. 38 Expert Pop Up interface

The figure above is the pop up interface after the expert clicks the submit button. Expert would fill Identity in the column such as name, company, position, and choose the form of recruitment that would be filled.

Forms of Prospective Employee

Attention!
This form requires personality test results to be performed on [this site](#). Save the test results and upload at the end of the form.

Name *

Place of birth *

Date of birth *

Gender *

Man Woman

Address *

Last Education *

Major *

University

Phone Number *

Work Experience

Recruitment *

Test Result (must be in .html format) *

* must be filled

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Figure 4. 39 Worker Candidate Form Interface

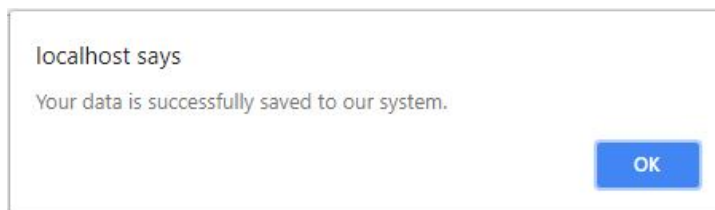


Figure 4. 40 Confirmation Pop Up

Above interface is a form for prospective labor containing column for labor identity. the column consists of the name, place of birth, date of birth, gender, address, education, major, University/School phone number, work experience, form of recruitment in accordance with the conditions and the columns to perform the

upload results charging five factor model. Pop up a confirmation will appear when data is successfully filled out correctly, if the data is wrong, then the system will do a warning if there is an empty column

Forms of Prospective Employee

Attention!

This form requires personality test results to be performed on [this site](#). Save the test results and upload at the end of the form.

Name *

Revi Alvian

Place of birth *

Surabaya

Date of birth *

05/02/1992

Gender *

Man Woman

Address *

Jln. Delima V no. 29

Figure 4. 41 Example of Completed form on the system

Last Education *

Major *

University

Phone Number *

Work Experience

Recruitment *

Test Result (must be in .html format) *

Figure 4. 42 Example of Completed form on the system 2

The figure above is an example of worker candidate recruitment form page that is already completed. There is a column name, city of birth, date of birth, address, education, school, experience, gender, the column selection form jobs and upload the results of IPIP NEO

General Cleaning

No.	Name	Place and Date of Birth	Address	Score
1.	Revi Alvian	Surabaya, 02 May 1992	Jln. Delima V no. 29	0.613817
2.	Restu Aji	Surabaya, 04 Dec 1995	Jln Tambak Madokan Ayu IX no. 12	0.577407
3.	Adhitya Prabowo	Surabaya, 14 Feb 1994	Jalan Jeruk V no. 129	0.573537
4.	Fikar Muhammad	Lamongan, 12 May 1992	Margorejo I-G/9, Surabaya	0.432733
5.	Noer Aji	Surabaya, 01 Dec 1994	Jln sewunggaling iii No. 192	0.418565
6.	Aditama Fajrur	Lamongan, 04 May 1993	Jln. Dakota IV No. 19 surabaya	0.413467
7.	Aga Alfian	Sidoarjo, 22 May 1993	Jln Simokerto gang ix no. 2 RT 4, surabaya	0.411001
8.	Firhan Alfi	Bangkalan, 15 Aug 1992	Jln. Wiguna selatan no. 19	0.400282
9.	Bagus Lelana	Semarang, 23 Oct 1993	Jl. Kyai Tambak Deres No. 252 Surabaya.	0.388731
10.	Kausar Abdi	Sidoarjo, 18 Jan 1993	Jln Keputih Tegal Timur baru no. 37	0.375176
11.	Abika Chairul	Tangerang, 03 Sep 1993	Keputih Tegal Timur gg 2 no. 11, Surabaya	0.350768
12.	Baskoro Ismail	Sidoarjo, 09 Apr 1993	Jl. Kedungkandang ix no. 18	0.347772
13.	Fazrur Ramdan	Nganjuk, 02 Jun 1996	Jln. Melati ii No. 21	0.34357
14.	Muhammad Alwajdy	Surabaya, 02 Mar 1992	Jln Mangga X No. 21	0.327968
15.	Muhammad Reza	Sidoarjo, 01 Sep 1996	Jln abdul rahman selatan IX no. 22	0.30779
11.	Muhammad Alwajdy	Surabaya, 02 Mar 1992	Jln Mangga X No. 21	0.32031
12.	Firhan Alfi	Bangkalan, 15 Aug 1992	Jln. Wiguna selatan no. 19	0.31351
13.	Fazrur Ramdan	Nganjuk, 02 Jun 1996	Jln. Melati ii No. 21	0.312204
14.	Kausar Abdi	Sidoarjo, 18 Jan 1993	Jln Keputih Tegal Timur baru no. 37	0.307737
15.	Mustopa	Gresik, 07 Nov 1990	Jl. Tanggulangin 12 Surabaya.	0.304604
16.	Rizki Hidayat	Surabaya, 04 Oct 1989	Jl. Tambakrejo VI/2 Surabaya.	0.287988
17.	Prasetya Andre	Malang, 25 Feb 1994	Jln. Bogi No. 18 surabaya	0.242482
18.	Fiktri Hardyan	Malang, 15 Aug 1992	Jl. Kupang Gunungan IV	0.242482
19.	Ady Theo	Bangkalan, 31 Oct 1993	Jln Gunung anyar jaya masjid no. 18	0.196776
20.	Muhammad Reza	Sidoarjo, 01 Sep 1996	Jln abdul rahman selatan IX no. 22	0.186644

Figure 4. 43 Final Report General Cleaning

The figure above is the report from the calculation results display on the system. The display contains a number, the name, place of birth, address, and the values obtained after performing the calculations of TOPSIS.

Security

No.	Name	Place and Date of Birth	Address	Score
1.	Revi Alvian	Surabaya, 02 May 1992	Jln. Delima V no. 29	0.69683
2.	Restu Aji	Surabaya, 04 Dec 1995	Jln Tambak Madokan Ayu IX no. 12	0.553733
3.	Adhitya Prabowo	Surabaya, 14 Feb 1994	Jalan Jeruk V no. 129	0.547093
4.	Fikar Muhammad	Lamongan, 12 May 1992	Margorejo I-G/9, Surabaya	0.469675
5.	Noer Aji	Surabaya, 01 Dec 1994	Jln sewunggaling iii No. 192	0.443607
6.	Bagus Lelana	Semarang, 23 Oct 1993	Jl. Kyai Tambak Deres No. 252 Surabaya.	0.393399
7.	Aditama Fajrur	Lamongan, 04 May 1993	Jln. Dakota IV No. 19 surabaya	0.382766
8.	Baskoro Ismail	Sidoarjo, 09 Apr 1993	Jl. Kedungkandang ix no. 18	0.341385
9.	Aga Alfian	Sidoarjo, 22 May 1993	Jln Simokerto gang ix no. 2 RT 4, surabaya	0.339594
10.	Abika Chairul	Tangerang, 03 Sep 1993	Keputih Tegal Timur gg 2 no. 11, Surabaya	0.33175
11.	Muhammad Alwajdy	Surabaya, 02 Mar 1992	Jln Mangga X No. 21	0.32031
12.	Revi Aji	Surabaya, 15 Apr 1992	Jln. Widyadarmas no. 10	0.31361
15.	Muhammad Reza	Sidoarjo, 01 Sep 1996	Jln Abdul Rahman Selatan IX no. 22	0.30729
16.	Mustopa	Gresik, 07 Nov 1990	Jl. Tanggulangin 12 Surabaya.	0.305645
17.	Rizki Hidayat	Surabaya, 04 Oct 1989	Jl. Tambakrejo VI/2 Surabaya.	0.293735
18.	Prasetya Andre	Malang, 25 Feb 1994	Jln. Bogi No. 18 surabaya	0.251743
19.	Fiktri Hardyan	Malang, 15 Aug 1992	Jl. Kupang Gunung IV	0.251743
20.	Ady Theo	Bangkalan, 31 Oct 1993	Jln Gunung Anyar jaya masjid no. 18	0.203832

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Figure 4. 44 Final Report Security

The figure is above the calculation result for security with the highest value Revi alvian 0.61 and lowest value Ady 0.20

4.4 Validation Test

Usability testing can be used to test the validity of the results of software that has been obtained. Usability testing is a test used to test the functional requirement of the output of the DSS. Questionnaire consists of 8 questions which have the purpose to know the feedback from the users of the system. Expert users and administrators will fill the questionnaires, the questionnaire follows:

Expert 1

Table 4. 15 Questionnaire Usability Testing 1

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	Ya, bagus
2	Apakah form kuisisioner FFM sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	Ya
3	Apakah dengan adanya software ini dapat membantu perekrutan pekerja ?	Ya
4	Apakah dengan implementasi software dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	Ya
5	Apakah dengan software dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	Ya
6	Apakah interface memiliki tampilan yang intuitif ?	Ya
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	Ya
8	Jika software diimplementasikan, hambatan apa yang berpotensi terjadi ?	Jika bisa dionlinekan untuk memudahkan

Expert 2

Table 4. 16 Questionnaire Usability Testing2

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	Ya
2	Apakah form kuisisioner FFM sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	Ya
3	Apakah dengan adanya software ini dapat membantu perekrutan pekerja ?	Ya

No	Pertanyaan	Jawaban
4	Apakah dengan implementasi software dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	Ya
5	Apakah dengan software dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	Ya
6	Apakah interface memiliki tampilan yang intuitif ?	Ya
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	Ya
8	Jika software diimplementasikan, hambatan apa yang berpotensi terjadi ?	Sudah bagus, tampilan simple

Expert 3

Table 4. 17 Questionnaire Usability Testing 3

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	Ya
2	Apakah form kuisioner FFM sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	Ya
3	Apakah dengan adanya software ini dapat membantu perekrutan pekerja ?	Ya
4	Apakah dengan implementasi software dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	Ya
5	Apakah dengan software dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	Ya
6	Apakah interface memiliki tampilan yang intuitif ?	Ya
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	Ya
8	Jika software diimplementasikan, hambatan apa yang berpotensi terjadi ?	Mungkin bisa ditambahkan fitur selain 2 jenis pekerjaan

Administrator

Table 4. 18 Questionnaire Usability Testing 4

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	Ya
2	Apakah form kuisisioner FFM sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	Ya
3	Apakah dengan adanya software ini dapat membantu perekrutan pekerja ?	Ya
4	Apakah dengan implementasi software dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	Ya
5	Apakah dengan software dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	Ya
6	Apakah interface memiliki tampilan yang intuitif ?	Ya
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	Ya
8	Jika software diimplementasikan, hambatan apa yang berpotensi terjadi ?	Kadang suka error

4.5 Data Output

In this subchapter will display the output obtained after performing the test on the system. The result is divided into two table, table results for General Cleaning and table for Security. The higher the value, the more the ideal Worker Candidates against this type of work. The table as follows:

Table 4. 19 Output Worker Candidate General Cleaning

Rank	Name	Value
1	Revi Alvian	0.72135
2	Restu Aji	0.552947
3	Adhitya Prabowo	0.551814
4	Fikar Muhammad	0.464699
5	Noer Aji	0.452778
6	Bagus ardi	0.378499
7	Aditama Fajrur	0.366377
8	Aga Alfian	0.322027
9	Baskoro Ismail	0.314317
10	Abika Chairul	0.308472
11	Fazrur Ramdan	0.301597
12	Mustopa	0.301489

Rank	Name	Value
13	Muhammad Alwajdy	0.295756
14	Firhan Alfi	0.290127
15	Kausar Abdi	0.275531
16	Rizki Hidayat	0.26165
17	Fiktri Hardyan	0.242992
18	Prasetya Andre	0.242992
19	Ady Theo	0.186823
20	Muhammad Reza	0.154614

The table above is the best sequence of the scenario if this type of work selected for general cleaning, the higher the value the more identical psychology Worker Candidates with the ideal criteria. In this scenario, the 1st alvian Revi with 0721, ranked 2nd is Restu aji with value of 0.55 and the smallest i.e. Muhammad Reza ranked 20th with a value of 0.15. Security

Table 4. 20 Output Worker Candidate Security

Rank	Name	Value
1	Revi Alvian	0.613817
2	Restu Aji	0.577407
3	Adhitya Prabowo	0.573537
4	Fikar Muhammad	0.432733
5	Noer Aji	0.418565
6	Aditama Fajrur	0.413467
7	Aga Alfian	0.411001
8	Firhan Alfi	0.400282
9	Bagus ardi	0.388731
10	Kausar Abdi	0.375176
11	Abika Chairul	0.350768
12	Baskoro Ismail	0.347772
13	Fazrur Ramdan	0.34357
14	Muhammad Alwajdy	0.327968
15	Muhammad Reza	0.30729
16	Mustopa	0.305645
17	Rizki Hidayat	0.293735
18	Fiktri Hardyan	0.251743
19	Prasetya Andre	0.251743
20	Ady Theo	0.203832

The table above is the result of calculations for job security. Rank 1st Revi alvian value of 0.61 and ranking 20th value of 0.20 Ady. If the ideal security criteria and general cleaning compared, there are notable differences compared to the result value, example Revi alvian on general cleaning get 0.72 but the value is decreasing

on security to 0.61. There is a notable difference between the criteria of an ideal that is filled by the expert thus lowering the value of identic with the ideal criteria entered.

Table 4. 21 Output Rank Comparison General Cleaning & Security

No	Name	Ranking	
		General Cleaning	Security
1	Revi Alvian	1	1
2	Restu Aji	2	2
3	Adhitya Prabowo	3	3
4	Fikar Muhammad	4	4
5	Noer Aji	5	5
6	Bagus Lelana	6	9
7	Aditama Fajrur	7	6
8	Aga Alfian	8	7
9	Baskoro Ismail	9	12
10	Abika Chairul	10	11
11	Fazrur Ramdan	11	13
12	Mustopa	12	16
13	Muhammad Alwajdy	13	14
14	Firhan Alfi	14	8
15	Kausar Abdi	15	10
16	Rizki Hidayat	16	17
17	Fiktri Hardyan	17	18
18	Prasetya Andre	18	19
19	Ady Theo	19	20
20	Muhammad Reza	20	15

Table 4.20 is a table of comparison between the results of the calculation of the General Cleaning and Security. There are significant differences in the results of the above order of rank 5. Rank 1-5 have the same results and ranking 5-20 have a significant difference. PT. ABS would give recruit candidate worker with score 0.4 and above additional score on the recruitment. The candidate worker with score below 0.4 would not be given additional score, but still considered to be recruited. The Company would prioritize the recruitment of General Cleaning than Security, since the GC had more specific and complicated job compared to Security.

Table 4. 22 Table of Qualified Candidate GC

Rank	Name	Value
1	Revi Alvian	0.72135
2	Restu Aji	0.552947
3	Adhitya Prabowo	0.551814
4	Fikar Muhammad	0.464699
5	Noer Aji	0.452778

Table 4. 23 Table of Qualified Candidate Security

Rank	Name	Value
1	Aditama Fajrur	0.413467
2	Aga Alfian	0.411001
3	Firhan Alfi	0.400282

The above table includes data of prospective workers who meet the requirements of PT ABS. Of the 20 candidates selected, 12 workers have a value below 0.4 for GC and Security, 8 people remaining would be eligible for GC, and Security.

CHAPTER 5

ANALYSIS AND DATA INTERPRETATION

In this chapter will discuss about analysis of data that have been processed in the previous chapter. the analysis consists of a scenario analysis of output, and the analysis of the implementation of the DSS on PT. ABS

5.1 Analysis of Implementing DSS in PT. ABS Case Study

Decision support system is a tool to facilitate in decision-making. On the system it is DSS tools created to facilitate companies in taking decisions about psychological factors. Case study of PT ABS, psychological factors placed on this aspect of the assessment. There are four aspects of the assessment on PT. ABS, that Attitude, Appearance, Experience, and education. Psychological assessment of factors including on aspects of assessment of attitude. A case study of PT ABS used 1 batch contain 20 Labor candidate for the type of work the General Cleaning and Security. The results of the test are obtained 20 Worker Candidates sorted based on the value of psychological tests using the five factor model as an indicator of the assessment. Expert would give the criteria ideal for specific job and the assessment of candidate worker would be compared with the Expert ideal criteria. The Result is Revi Alvian was the candidate of the workers with the highest value for both of these types of work with a value of 0.72 and 0.61. While the lowest value, namely Muhammad Reza with the value of 0.15 to General Cleaning, and Ady for Security. The difference occurs because of psychological test results the FFM has the distinction is far from the ideal categories that have been made by the Expert of PT ABS. On the results of IPIP NEO Muhammad Reza and Ady has a low value on the sub factors of Friendliness, Gregarious, Altruism and compared to the value of the Revi Alvian has a very significant difference. It indicated that Muhammad Reza and Ady is not very suitable for the type of work General Cleaning and Security. The value of the result of the calculation of the DSS will be one input from the aspect of assessment of PT ABS in making decisions for the recruitment of Worker Candidates.

Expert tends to give a high priority on the Extraversion factor and Agreeableness. Both factors had high priority for both types of jobs. Compared to Neuroticism and Openness factor of a factor which had the least priority because

both of these factors are likely to have a negative factor such as sub Anger and Depression as well as several factors are not a priority for both the work as the sub factors of imagination and Liberalism.

By using a limit value of 0.4, only 8 of the 20 people who qualify as a candidate for a good worker. 5 person identify for General Cleaning and 3 people for Security. 12 people who did not qualify have a value below 0.4, does not mean the remaining 12 people is bad worker candidates, As the system only measures the DSS of psychological indicators only and there are still some indicators of assessment in the hiring process.

5.2 Analysis of Implementing Decision Support System

Decision support system is a proofed to be a great tool to assist in decision making. Generally the results of the DSS could not be used as a guide in making a final decision. Because the DSS as a case study of PT ABS just using psychological factors in conducting assessments of Worker Candidates. In the recruitment of PT ABS that uses some aspects of the assessment, then the DSS could not be the last benchmark in decision-making, the DSS can only be used as tools to provide a specific assessment based on the indicators that are used. Advantages of DSS is to be able to shorten the time of objective results, since the system as the measuring device, save cost, effort and time, and are able to solve unstructured problems

This is supported by the results of the questionnaire usability testing that has been done, from 4 sources that had been done interviews with filling out the questionnaire usability testing. It can be concluded that DSS recruitment flow meets offline, DSS also already has a display that is easy to understand, as well as proven to be able to reduce the overall time.

The disadvantage of the DSS is not to be used as the final decision makers because of DSS just take one aspect of an overall assessment, so it can't be used as decision makers. DSS can be applied to other companies by doing a few changes on the system. By adding a database, and change the coding so that the selection of the type of work can be done more than 2 (current state). The difference between the existing condition that uses the MBTI with alternative DSS that uses base FFM or Big Five. FFM is a scientific origin and scientific evidence of accuracy, is the result of extensive scientific research to find repeatable, measurable aspects of

personality that differentiate between people. FFM suitable scientifically, while the MBTI more leads to results that are used for daily life because of the FFM could not predict behaviors. MBTI match is used as a tool to know your preferences and how to work with/communicate with. FFM and MBTI comparison cannot be made due to the use of different indicators and how to use difference on the results of test conducted

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CHAPTER 6

CONCLUSION AND SUGGESTION

This chapter will contain about conclusions and suggestions after the author doing research final project, the conclusion as follows:

6.1 Conclusion

After conducted the research, the conclusion is as follows:

1. Decision support system can be used to help make decisions. DSS can save time, effort, and cost the company if implemented. The DSS could not serve as decision-making, only as a tool to aid decision making
2. DSS can reduce the value of subjective as the system that performs calculations.
3. Revi Alvian was the candidate of the workers with the highest value for General Cleaning and Security. It means Revi is the candidate with the right worker for both the type of work. Muhammad Reza and Ady is the most Worker Candidates which are not qualified to work on the kind of work the General Cleaning and Security due to get the lowest value in the calculation of the end
4. There are 8 people qualified worker for PT. ABS based on the result, 5 for General Cleaning, and 3 for Security, PT ABS prioritized General Cleaning because jobs are more specific and complex than security
5. On the research of this thesis, the researchers conduct personality assessment using a detailed questionnaire IPIP-NEO 120 items to assess Five Factor Model (FFM) psychological test. Labor candidate characteristics will be formally selected personality through (FFM). From a personality assessment that has been carried out the value of personality assessment criteria among all twenty labor candidates have different values.

6.2 Recommendation

After conducted the research, the suggestion is as follows

1. the authors hope the system can be implemented online hosting
2. It is expected the development of PT ABS DSS can be expanded so that it can be implemented on the company in General so as to provide an alternate in doing the test with the psychology-based information system

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REFERENCES

- Ackerman, C., 2017. *positivepsychologyprogram*. [Online] Available at: <https://positivepsychologyprogram.com/big-five-personality-theory/> [Accessed 12 maret 2018].
- Ashley, E., 2008. *Outsourcing for Dummies*. 1st ed. New Jersey: for Dummies.
- Deloitte, 2016. *Deloitte's 2016 Global*, s.l.: Deloitte.
- Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure. *Psychological Assessment*, pp. 26-42.
- Goldberg, L. J. A. J. H. W. E. R. H., 2005. The international personality item pool and the. *Journal of Research Personality*, pp. 85-90.
- Hamzah, A., 1990. *Pokok-pokok Hukum Ketenagakerjaan Indonesia*. 1st ed. Jakarta: PT. Rineka Cipta.
- House, W., 2014. *Human Resource Management*. london: ABE & RRC Business Training .
- Hudson, N. W., 2011. [Online] Available at: <http://www.personalityassessor.com/about/> [Accessed 19 Maret 2018].
- Indrajit, D., 2003. *Proses Bisnis Outsourcing*. Jakarta: PT. Gramedia Widiasaran.
- Jewell L. N, S. M., 1998. *Psikologi Industri/Organisasi Modern: Psikologi Penerapan Untuk Memecahkan Berbagai Masalah Di Tempat Kerja Perusahaan, Industri, Dan Organisasi*, 2nd ed. Jakarta: Arcan.
- JobStreet, 2014. *73% Karyawan Tidak Puas dengan Pekerjaan Mereka*, s.l.: s.n.
- Khairani, 2012. Analisis permasalahan Outsourcing dari Perspektif hukum khairani. *Kanun Jurnal Ilmu Hukum No. 56*, Volume XIV, pp. 53-68.
- Kumari, N., 2012. A Study of Recruitment and Selection Process: SMC Global. p. 35.
- Mount, M. K., Barrick, M. R. & Stewart, G. L., 2009. *Five-Factor Model of personality and Performance in Jobs Involving*. s.l.:s.n.
- Nielsen, 1994. *Usability Engineering*. 1st ed. s.l.:Academic Press Inc..
- Ningrum, D. A., 2017. *Merdeka*. [Online] Available at: <https://www.merdeka.com/khas/mau-dibawa-kemana-bisnis-alih-daya-di-indonesia.html> [Accessed 12 maret 2018].
- Oliver P. John, R. R. W. P. L. A., 2008. *The Big-Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives*. 3rd ed. New York: Guilford Press.

- Pladson, K., 2018. *Statista*. [Online]
Available at: <https://www.statista.com/statistics/189788/global-outsourcing-market-size/>
[Accessed 03 April 2018].
- R. Wayne Dean Mondy, J. J. M., 2014. *Human Resource Management*. 14th ed. s.l.:Pearson.
- Swafford, S., 2006. *Use Cases and Their Importance*. [Online]
Available at: [http://aspalliance.com/765 Use Cases and Their Importance](http://aspalliance.com/765%20Use%20Cases%20and%20Their%20Importance)
[Accessed 19 Maret 2018].
- Thompson, 2017. *visual-paradigm*. [Online]
Available at: <https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-uml/>
[Accessed 12 maret 2018].
- Tom Buchanan, J. A. J. L. G., 2005. Implementing a Five-Factor Personality Inventory for Use on the Internet. *European Journal of Psychological Assessment*, pp. 116-128.
- Valade, J., 2004. *PHP 5 for Dummies*. 1st ed. New York: For Dummies.
- Wilkie, D., 2013. *shrm*. [Online]
Available at: <https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/how-reliable-are-personality-tests.aspx>
[Accessed 12 maret 2018].

Kuisisioner Kepribadian

Kuisisioner ini merupakan bagian dari laporan tugas akhir mengenai perancangan system penunjang dalam melakukan perekrutan calon tenaga kerja. Kuisisioner ini merupakan alat ukur yang ditujukan untuk supervisor/staff yang berhubungan dengan perekrutan calon tenaga kerja. Personaliti / dimensi kepribadian merupakan salah satu faktor yang berhubungan dengan kinerja dari calon tenaga kerja. Kepribadian yang sesuai dalam mengisi pekerjaan yang tepat dapat berpengaruh besar terhadap kinerja individu. Menurut Goldberg (1993), *Five Factor Model (FFM)* terbagi menjadi 5 yaitu: *Extroversion, Agreeableness, Conscientiousness, Neuroticism, dan Openness to Experience (OCEAN)*. 5 faktor utama kemudian dibagi lagi menjadi 30 sub faktor yang spesifik untuk penilaian pribadi yang lebih spesifik. Kuisisioner ini diperuntukan untuk *expert* yang sudah memiliki pengalaman dalam melakukan penyeleksian calon tenaga kerja dalam perusahaan. Hasil dari kuisisioner ini merupakan *input* yang diperlukan untuk melaksanakan penelitian tugas akhir ini. Atas kerjasama dan kesediaan Bapak/Ibu dalam mengisi kuisisioner ini, saya ucapkan Terima Kasih.

Biodata *Expert*

Nama : Mada
Jabatan : Manager HRD
Departemen : HRD
Pengalaman Kerja : -

Five Factor Model (FFM) adalah kepribadian taksonomi disusun berdasarkan pendekatan leksikal, yaitu sekelompok kata atau bahasa yang digunakan dalam kehidupan sehari-hari untuk menggambarkan karakteristik individu yang membedakannya dari individu lain (John, et al., 2008). *The Big Five Personality Traits* adalah model terbaik yang diterima dan paling umum digunakan dalam studi kepribadian. Model ini berasal dari studi statistik tentang karakter manusia. Melalui metode analisis faktor, diperoleh sebagai respon terhadap lebih dari 100 ciri kepribadian pada manusia dan memunculkan merangkum cara terbaik

untuk menilai seseorang berdasarkan data dan objektivitas. Hal ini dilakukan dengan banyak sampel di dunia dan hasil yang lebih umum. disajikan (Goldberg, 1993). Lima faktor model seperti berikut:

1. *Extraversion*

Individu Extraversion ditandai dengan bersemangat di dalam membangun hubungan dengan orang lain. Mereka tidak pernah sungkan berkenalan dan secara aktif mencari teman baru. Individu ini tegas dan asertif dalam bersikap.

2. *Agreeableness*

Individu ini mempunyai ciri-ciri ketulusan dalam berbagi, kehalusan perasaan, fokus pada hal-hal positif pada orang lain. Di dalam kehidupan sehari-hari mereka tampil sebagai individu yang baik hati, dapat bekerjasama, dan dapat dipercaya.

3. *Conscientiousness*

Kepribadian & tindakan mereka dan konsekuensi dari perilaku mereka daripada orang-orang yang unconscientious. Individu dengan Conscientiousness tinggi memiliki kecenderungan untuk menjaga lingkungan yang rapi dan terorganisir dengan baik. Serta tertarik untuk menjaga ketepatan waktu yang baik, dan lebih berorientasi pada tujuan perilaku.

4. *Neuroticism*

Neuroticism merupakan dimensi kepribadian yang berorientasikan pada kestabilan emosi ketidakstabilan emosional. Orang-orang dengan skor tinggi akan cenderung segan-gigih. Mereka lebih takut dan sering merasa cemas, *overthinking* masalah mereka dan melebih-lebihkan kepentingannya.

5. *Openness*

Keterbukaan kepribadian yang ditandai dengan keinginan untuk mencoba kegiatan baru. Orang dengan tingkat lebih tinggi keterbukaan setuju untuk ide-ide yang tidak konvensional dan keyakinan, termasuk untuk menentang asumsi-asumsi mereka.

No.	Faktor	Subfaktor	Deskripsi
1	Extraversion	<i>Activity Level</i>	Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi
2		<i>Assertiveness</i>	Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain
3		<i>Cherfulness</i>	Kecenderungan untuk menjadi individu yang positif
4		<i>Excitement seeking</i>	Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko
5		<i>Friendliness</i>	Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang
6		<i>Gregariousness</i>	Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman
7	Agreeableness	<i>Altruism</i>	Kecenderungan untuk menjadi individu yang murah hati dan membantu orang
8		<i>cooperation</i>	kecenderungan untuk menjadi individu yang mudah bekerja sama
9		<i>Modesty</i>	Kecenderungan untuk menjadi individu yang sederhana dan rendah hati
10		<i>Trust</i>	Kecenderungan untuk menjadi individu yang mempercayai individu lain
11		<i>morality</i>	Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh
12		<i>Sympathy</i>	Kecenderungan untuk menjadi individu yang simpatik & peduli
13	Conscientiousness	<i>Achievement striving</i>	Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi
14		<i>Cautiousness</i>	Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak
15		<i>Dutifulness</i>	Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji
16		<i>Orderliness</i>	Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan
17		<i>Self Discipline</i>	Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri
18		<i>Self Efficiency</i>	Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu
19	Neuroticism	<i>Anger</i>	Kecenderungan untuk menjadi individu yang amarah dan frustrasi

20		<i>Anxiety</i>	Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan
21		<i>Depression</i>	Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal
22		<i>Immoderation</i>	Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan
23		<i>self consciousness</i>	Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri
24		<i>vulnerability</i>	Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress
25	Openness	<i>Adventurousness</i>	Kecenderungan untuk menjadi individu yang mencoba hal baru
26		<i>Artistic Interest</i>	Kecenderungan untuk menjadi individu yang mencintai seni dan keindahan
27		<i>Emotionality</i>	Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri
28		<i>Imagination</i>	Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif
29		<i>Intellect</i>	Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu
30		<i>Liberalism</i>	Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru

Petunjuk Pengisian

Berikut merupakan petunjuk pengisian kuisioner :

1. Menuliskan kriteria jenis pekerjaan
2. Menuliskan peringkat berdasarkan prioritas pada pekerjaan tersebut.
 - Angka 1 = Prioritas paling diutamakan
 - Angka 30 = Prioritas paling tidak diutamakan

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	6
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	8
Kecenderungan untuk menjadi individu yang positif	9
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	11
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	17

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	18
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	3
kecenderungan untuk menjadi individu yang mudah bekerja sama	4
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	12
Kecenderungan untuk menjadi individu yang mempercaikan individu lain	13
Kecenderungan untuk menjadi individu yang terarah dan bersungguh-sungguh	2
Kecenderungan untuk menjadi individu yang simpatik & peduli	5
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	14
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	16
Kecenderungan untuk menjadi individu yang memegang erat prinsip hidup & janji	15
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	1
Kecenderungan untuk menjadi individu yang bekerja cepat, fokus & mampu mengatur diri sendiri	7
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	10
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	30
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	19
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	29
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	23
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	20
Kecenderungan untuk menjadi individu yang bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	21
Kecenderungan untuk menjadi individu yang mencoba hal baru	22
Kecenderungan untuk menjadi individu yang mencintai sendiri dan keindahan	25
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	24
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	28
Kecenderungan untuk menjadi individu yang memiliki ide-ide baru dalam melakukan sesuatu	26
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	27

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.

Psychological Assessment, pp. 26-42.

Kuisisioner *Usability Testing*

Kuisisioner ini merupakan bagian dari laporan tugas akhir mengenai perancangan system penunjang dalam melakukan perekrutan calon tenaga kerja. Kuisisioner ini merupakan alat ukur yang ditujukan untuk supervisor/staff yang berhubungan dengan sistem informasi perekrutan calon tenaga kerja. Pada kuisisioner ini akan berisi beberapa pertanyaan terhadap *user* dari *software* perekrutan yang telah digunakan, baik sebagai *Expert* maupun *administrator*. Pertanyaan sebagai berikut :

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	<i>Ya, bagus</i>
2	Apakah form kuisisioner <i>FFM</i> sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	<i>Ya</i>
3	Apakah dengan adanya <i>software</i> ini dapat membantu perekrutan pekerja ?	<i>Ya</i>
4	Apakah dengan implementasi <i>software</i> dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	<i>Ya</i>
5	Apakah dengan <i>software</i> dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	<i>Ya</i>
6	Apakah interface memiliki tampilan yang intuitif ?	<i>Ya</i>
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	<i>Ya</i>
8	Jika <i>software</i> diimplementasikan, hambatan apa yang berpotensi terjadi ?	<i>Jika bisa dionlinekan untuk memudahkan</i>

.....

Source :

Rouke, P., 2011. *67 questions usability testing can answer*. [Online] Available at: <https://econsultancy.com/blog/7972-67-questions-usability-testing-can-answer>

[Accessed 22 June 2018].

Security

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	13
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	4
Kecenderungan untuk menjadi individu yang positif	11
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	10
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	12
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	14
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	9
kecenderungan untuk menjadi individu yang mudah bekerja sama	8
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	7
Kecenderungan untuk menjadi individu yang mempercai individu lain	22
Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh	24
Kecenderungan untuk menjadi individu yang simpatik & peduli	23
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	25
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	5
Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji	26
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	6
Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri	3
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	2
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	15
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	1
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	27
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	16
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	30
Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	18
Kecenderungan untuk menjadi individu yang mencoba hal baru	20
Kecenderungan untuk menjadi individu yang mencintai sendi dan keindahan	29
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	19
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	21

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu	17
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	28

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.

Psychological Assessment, pp. 26-42.

Biodata *Expert*

Nama : Danang

Jabatan : Assistant Manager

Departemen : HRD

Pengalaman Kerja : _____

General Cleaning

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	2
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	19
Kecenderungan untuk menjadi individu yang positif	3
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	18
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	9
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	8
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	17
kecenderungan untuk menjadi individu yang mudah bekerja sama	7
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	6
Kecenderungan untuk menjadi individu yang mempercai individu lain	13
Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh	4
Kecenderungan untuk menjadi individu yang simpatik & peduli	14
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	5
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	16
Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji	15
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	1
Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri	10
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	11
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	30
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	29
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	28
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	27
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	12

Deskripsi	Ranking
Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	26
Kecenderungan untuk menjadi individu yang mencoba hal baru	25
Kecenderungan untuk menjadi individu yang mencintai sendi dan keindahan	20
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	24
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	22
Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu	21
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	23

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.

Psychological Assessment, pp. 26-42.

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	<i>Ya</i>
2	Apakah form kuisisioner <i>FFM</i> sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	<i>Ya</i>
3	Apakah dengan adanya <i>software</i> ini dapat membantu perekrutan pekerja ?	<i>Ya</i>
4	Apakah dengan implementasi <i>software</i> dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	<i>Ya</i>
5	Apakah dengan <i>software</i> dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	<i>Ya</i>
6	Apakah interface memiliki tampilan yang intuitif ?	<i>Ya</i>
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	<i>Ya</i>
8	Jika <i>software</i> diimplementasikan, hambatan apa yang berpotensi terjadi ?	<i>Sudah bagus, tampilan simple</i>

Security

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	14
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	6
Kecenderungan untuk menjadi individu yang positif	10
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	12
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	11
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	13
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	7
kecenderungan untuk menjadi individu yang mudah bekerja sama	9
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	8
Kecenderungan untuk menjadi individu yang mempercai individu lain	26
Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh	27
Kecenderungan untuk menjadi individu yang simpatik & peduli	29
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	28
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	4
Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji	30
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	5
Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri	3
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	1
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	15
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	2
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	25
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	17
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	24
Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	16
Kecenderungan untuk menjadi individu yang mencoba hal baru	19
Kecenderungan untuk menjadi individu yang mencintai sendi dan keindahan	23
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	20
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	21

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu	18
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	22

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.

Psychological Assessment, pp. 26-42.

Biodata *Expert*

Nama : Jessica

Jabatan : Staff HRD

Departemen : HRD

Pengalaman Kerja : 2 tahun staff HRD

General Cleaning

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	6
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	7
Kecenderungan untuk menjadi individu yang positif	10
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	12
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	11
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	14
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	13
kecenderungan untuk menjadi individu yang mudah bekerja sama	18
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	15
Kecenderungan untuk menjadi individu yang mempercai individu lain	19
Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh	16
Kecenderungan untuk menjadi individu yang simpatik & peduli	17
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	1
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	9
Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji	8
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	2
Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri	4
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	3
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	23
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	20
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	24
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	22
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	21

Deskripsi	Ranking
Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	30
Kecenderungan untuk menjadi individu yang mencoba hal baru	29
Kecenderungan untuk menjadi individu yang mencintai sendi dan keindahan	5
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	28
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	25
Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu	26
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	27

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.

Psychological Assessment, pp. 26-42.

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	<i>Ya</i>
2	Apakah form kuisisioner <i>FFM</i> sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	<i>Ya</i>
3	Apakah dengan adanya <i>software</i> ini dapat membantu perekrutan pekerja ?	<i>Ya</i>
4	Apakah dengan implementasi <i>software</i> dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	<i>Ya</i>
5	Apakah dengan <i>software</i> dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	<i>Ya</i>
6	Apakah interface memiliki tampilan yang intuitif ?	<i>Ya</i>
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	<i>Ya</i>
8	Jika <i>software</i> diimplementasikan, hambatan apa yang berpotensi terjadi ?	<i>Mungkin bisa ditambahkan fitur selain 2 jenis pekerjaan</i>

Security

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang mengikuti berbagai kegiatan dengan semangat yang tinggi	7
Kecenderungan untuk menjadi individu yang tegas, bertanggung jawab, dan memimpin orang lain	8
Kecenderungan untuk menjadi individu yang positif	9
Kecenderungan untuk menjadi individu yang mencari sensasi dan suka mengambil resiko	10
Kecenderungan untuk menjadi individu yang mudah bergaul dan menyebarkan kasih sayang	19
Kecenderungan untuk menjadi individu yang berinteraksi dengan banyak orang dan memiliki banyak teman	11
Kecenderungan untuk menjadi individu yang murah hati dan membantu orang	13
kecenderungan untuk menjadi individu yang mudah bekerja sama	12
Kecenderungan untuk menjadi individu yang sederhana dan rendah hati	15
Kecenderungan untuk menjadi individu yang mempercai individu lain	14
Kecenderungan untuk menjadi individu yang terarah dan bersungguh sungguh	17
Kecenderungan untuk menjadi individu yang simpatik & peduli	16
Kecenderungan untuk menjadi individu yang bekerja keras & mencapai prestasi tinggi	6
Kecenderungan untuk menjadi individu yang berpikir dahulu sebelum bertindak	18
Kecenderungan untuk menjadi individu memegang erat prinsip hidup & janji	5
Kecenderungan untuk menjadi individu yang bersikap taat pada peraturan & mampu mengorganisasikan diri terhadap lingkungan	2
Kecenderungan untuk menjadi individu yang berkerja cepat, fokus & mampu mengatur diri sendiri	1
Kecenderungan untuk menjadi individu yang bekerja dengan efektif dan kebijaksanaan dalam melakukan sesuatu	3
Kecenderungan untuk menjadi individu yang amarah dan frustrasi	20
Kecenderungan untuk menjadi individu yang gelisah dan penuh ketakutan	4
Kecenderungan untuk menjadi individu yang mengalami depresi dibandingkan individu normal	24
Kecenderungan untuk menjadi individu yang tidak mampu mengontrol keinginan	23
Kecenderungan untuk menjadi individu yang malu, tidak nyaman pada sekitar dan merasa rendah diri	4
Kecenderungan untuk menjadi individu bergantung pada orang lain, mudah menyerah dan tidak mampu menghadapi stress	22
Kecenderungan untuk menjadi individu yang mencoba hal baru	28
Kecenderungan untuk menjadi individu yang mencintai sendi dan keindahan	27
Kecenderungan untuk menjadi individu yang mampu menyadari dan menyelami emosi serta perasaannya sendiri	26
Kecenderungan untuk menjadi individu yang memiliki imajinasi tinggi dan aktif	25
Kecenderungan untuk menjadi individu yang memiliki ide ide baru dalam melakukan sesuatu	29

Deskripsi	Ranking
Kecenderungan untuk menjadi individu yang berpikir terbuka & berdiskusi hal baru	30

Source :

Goldberg, L., 1992. The development of markers for the Big-Five Factor Structure.
Psychological Assessment, pp. 26-42.

Biodata Admin

Nama : Erik

Jabatan : Staff

Departemen : Operasional

Pengalaman Kerja : -

No	Pertanyaan	Jawaban
1	Apakah sistem sudah sesuai dengan alur perekrutan ?	<i>Ya</i>
2	Apakah form kuisisioner <i>FFM</i> sudah mengakomodir ideal dari sebuah jenis pekerjaan ?	<i>Ya</i>
3	Apakah dengan adanya <i>software</i> ini dapat membantu perekrutan pekerja ?	<i>Ya</i>
4	Apakah dengan implementasi <i>software</i> dirasa sudah mengurangi waktu yang dibutuhkan dalam perekrutan ?	<i>Ya</i>
5	Apakah dengan <i>software</i> dirasa mampu mengurangi kecenderungan subjektif dalam penentuan posisi dari calon tenaga kerja ?	<i>Ya</i>
6	Apakah interface memiliki tampilan yang intuitif ?	<i>Ya</i>
7	Apakah hasil sudah sesuai dengan kebutuhan perusahaan ?	<i>Ya</i>
8	Jika <i>software</i> diimplementasikan, hambatan apa yang berpotensi terjadi ?	<i>Kadang suka error</i>



Ivan Avianda Widagdo, Born in the city of Semarang on May 13, 1996. Is the only child of parents of origin of West Sumatra and Salatiga. Is a student of industrial engineering forces entered 2014 Ten November Institute of technology (ITS). A graduate of the SDIT AL-Fatah, SMP Negeri 3 Bekasi, and SMAN 10 Malang.

The author was active in the Organization, several times being a caretaker committee event at the Department of industrial engineering, and also became Chairman of the movement of ITS Writing in the year 2016. Also part of BEM ITS 2015/2016 Vivat Press ITS in accordance to organiza event related to media & communication.