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Contents

Designing a Web-Based Career System Using the Laravel Framework

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ABSTRACT

Advances in data and communication technology are growing rapidly. Especially in terms of data, data plays an important role in life. In this modern era, data is carried by a technology called the internet. In this case, the internet makes it easy to provide data about job vacancies, one of which is job vacancy websites. Without data it will be very difficult to get something you want, like getting a job. Profession is a matter that is very important for the survival of some people, therefore many people have difficulty getting data on a profession, but there are also people who have an industry who also have difficulty getting employees quickly and with the skills that match the required aspects. To overcome this problem, a website-based job vacancy application arrangement was created called a web search program, using the waterfall method, made using the PHP programming language and MySQL as the database. With this application, it is hoped that it will make it easier for applicants to find data on professional vacancies and make it easier for an industry that is looking for employees quickly and with the right skills.

Keywords: PHP,MySQL , LaravelInformation System, Job Seeker.

1. INTRODUCTION

In modern times like today there are still many people who do not have a profession, this is due to the difficulty of obtaining data on job vacancies. In searching for data on job vacancies, applicants usually use the manual method, namely by visiting the industry to see notices containing job vacancies, carrying out searches in stamped media such as newspapers, magazines, circulars or by word of mouth. In seeking event information, candidates as a rule use manual methods, in particular by going to the group to view notice sheets containing event opportunities, carrying out forms on paper such as papers, magazines, brochures or deliberately following other people's chat data. This method has drawbacks because the candidate must go to the desired group with a deed of requirements, introductory messages and other prerequisites that use a lot of paper and maybe if the stated wish will be easily torn, served to water when they appear in the group[1]. Complaints are not only from activity trackers, companies also sometimes need employees quickly.

Of the 2 problems above, there are many solutions, one of which is to use internet technology, this is because the internet can provide data very quickly and precisely. One way to provide data via the internet is to use the web, there are already a number of websites to show job vacancies, but very rarely are websites that provide job vacancies and also help companies to carry out industry recruitment so they can recruit employees. Therefore a "Web-Based Activity Search Data System" was created which could provide a solution to these two problems.

Professional vacancy data is one of the necessary data and has a very fast update. From this problem, research was carried out to conceptualize a job search data system which was coupled with the support of maps to show positions with industry profiles that open professional vacancies that would appear on maps or charts [2]. Make it more helpful for activity trackers to view job vacancy information and show companies that have entered professional data. In this activity search data system job vacancies will be

displayed on maps along with the company profile.

2. RESEARCH METHOD

In the preparation of Web Platform Activity Search Applications Using Laravel, use the waterfall system development form. There are several levels of research used in the Development of Applications Search for Web Platform Activities Using Laravel. The research level can be observed in Figure 1.

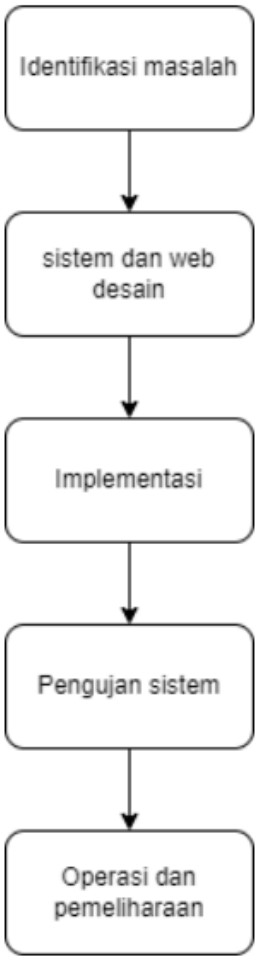

Figure 1. research stage

The description of the stages of the research is as shown in Figure 1 as follows: The initial step is the introduction of the problem. In this step, an in-depth analysis of the level of the system to be made and what kind of system will work behind it will be attempted, so that you can understand well the process that takes place. After that, carry out an introduction to the system that you want to use, from the results of the introduction of the system that will be made in the form of a web using the Laravel framework as the basis for the system, besides using the Laravel framework because it already has a mail gateway feature [3].

In the System step and the website concept, a concept or form arrangement for the activity search application will be attempted and a method arrangement will be carried out that is intertwined in the application in the form of Use Case Charts and Activity Charts from the activity search system [4]. In the Application and Part Testing steps, you will try to create a website in the form of coding or create a program for the system from the application search program and use the existing concept or form from the previous step [5]. In this coding method, try using the Visual Studio Code compiler, the result of this

coding step will be in the form of a web search program [6].
In the Integration and System Testing steps, web testing will be carried out, web testing will be attempted to find out if the website is in accordance with the concept and all functions are running well.
The last step is Activity and Maintenance, in this step there will be several things that can be done so that the program that has been made can be used properly, in particular by writing all the information about the program, following the program that has been made and accumulating results in the program that already contains the type of information . Use Case Chart is a description of the capacity of the activity framework in accordance with the perspective of the consumer's activity framework. Using a CaseDiagram works by using an atmosphere, which is a description of the stage setting that describes how the customer carries out the activity framework or vice versa [7]. Use Case The chart made is shown in Figure 1.

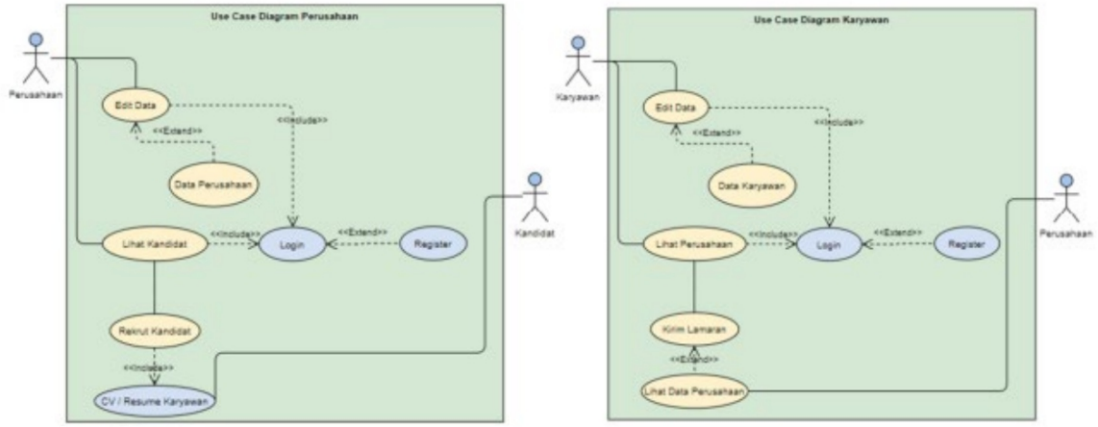

Figure 2. Company and Employee Use Case Diagrams

The use case chart on the left shown in Figure 2 has 2 actors, namely the industry and candidates who carry out activities on the Activity Search website. In this use case it describes industrial activities that want to recruit an employee, the gist of the use case above is that the industry must have an account first to be able to use the job search website after that it is required to load industry information so that it can appear on the activity tracking page and the industry has a feature for recruiting employees with an estimated CV or resume from the profile of the tracker of recruitment activities to be sent via email[8].
The use case chart on the right that is rejected in Figure 2 is a use case for employees who want to submit applications to industry. In the use case there are 2 film stars, namely employees and companies, here the way it works is almost the same as the use case for the industry chart in Figure 2,the first time you have an account and load your personal information after that upload your CV or Resume. sent via e-mail.
Activity Chart describes a niche activity by means of stages for stages in a system[9]. There are 2 Activity Charts that are made to show how the recruitment process and the applications that occur in the system. The Industry Activity Chart is shown in Figure 4 on the left and the Employee or Candidate Activity Chart is shown in Figure 4 on the right.

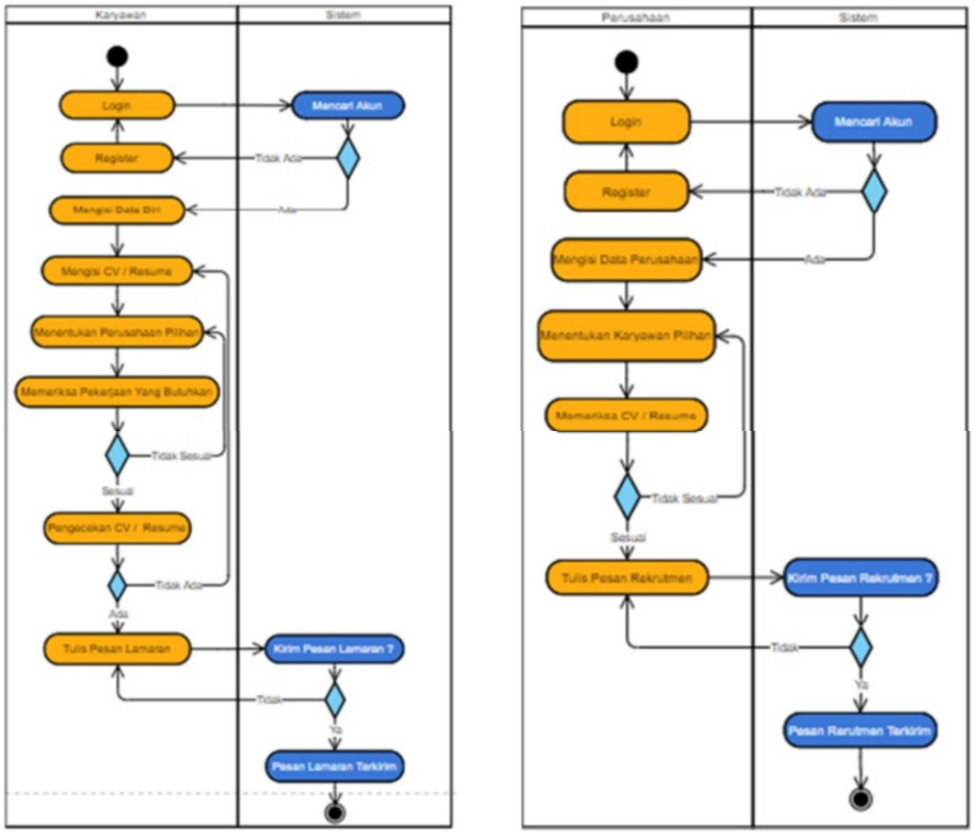

Figure 3. Company and Employee / Candidate Activity Diagrams

In figure 3 to the left of the Activity Chart from the web, look for activities that prove the activity involved in the industry's recruitment process for candidates via the web. Initially, the company must have an account to be able to log in, if you don't have an account, you must register first. After logging in, the industry must contain industry information to define the industry and which aspects are still in need of employees, instead of waiting to receive an application from a candidate, the company can recruit employees if the candidate's personal information and skills match what the industry requires. After that, to send recruitment, candidates who wish to receive recruitment records must first have a CV or resume, if a candidate does not have a CV or resume then the job search website will automatically make the candidate unable to receive recruitment records from the industry. However, if you already have a CV or industry resume, you can send recruitment records, the recruitment records will be sent by the Kejra search web to the relevant candidate's email.

In figure 3 to the right of the Activity Chart from the web search for activities that prove the activity that is intertwined with how to apply to the industry via the web search for activities. Initially a candidate must log in to the website looking for activities, to log in requires an account and if you don't have an account, you must register first. After that, after logging in, the candidate must load personal information and upload a CV or resume, both of which must be carried out in order to be able to apply to an industry. After that the candidate can choose the desired industry and submit an application by pressing the existing propose button, after that the candidate can write an application message and send it.

3. RESULTS AND DISCUSSIONS

In this section describes the results of the preparation of the system and the application of the program. The preparation of the system uses the Use Case Chart and the Activity Chart. The results of the coding

will be in the form of a web page interface that uses the Laravel framework. The results of the coding that has been tried will be in the form of a website looking for activities, on this website the Laravel framework is used. The use of the Laravel framework is because in the Laravel framework there is already a mail gateway system, so there is no need to add third-party applications. The laravel framework is also used as a web page layout, its use exists.

The main page is the page that is first visible and accessed by users or consumers in the activity search data system website. On the main page there are menus such as the Home menu, activity vacancies, Registration, and Login which looks like in Figure 4.

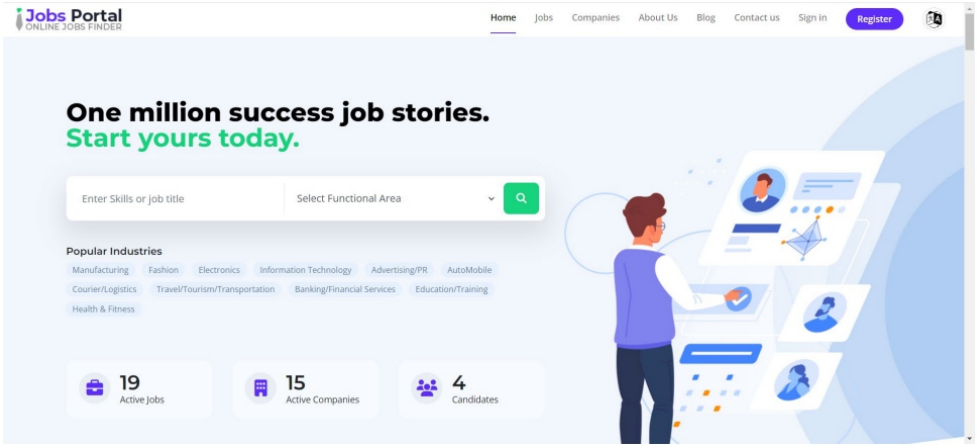

Figure 4. Home Page

4. CONCLUSION

The conclusion from the preparation of the application is to search for web-based activities using the Laravel framework and the waterfall method. By using this application there are many benefits, such as easier to get data about industries that are currently opening vacancies, providing relief for job applicants without having to carry various files and requirements in hardcopy form, job applicants can directly apply to the industry they want without having to arrange an agenda with industry officials, applicants can also get direct recruitment from the industry if the industry is interested, then from the security sector the delivery of records has been completed with encryption.

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Calculation of oil losses in dampas press in the pressing process of the screw press unit PT. Sumber Bumi Sawit Jadi Jaya

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ABSTRACT

This research was conducted at PT. Sumber Bumi Sawit Jadi Jaya. Oil losses are the percentage of oil that does not exist or is not included in the next oil processing process but is included in the marine process. The purpose of this study was to determine the percentage of oil loss contained in the dregs of the press using the soxhletation extraction method. Based on the results of the mass balance calculation, the number of components that enter the screw press is 22,401 kg/hour digester and 6000 kg/hour delusional water. The number of components that came out of the screw press were dregs press of 8,400 kg/hour and delution crude oil of 20,001 kg/hour. The results of this study indicate that the oil losses obtained in the pressing process are 4.45% or 373.80 kg/hour. This is in accordance with factory standards where oil losses are 4-6%.

Keywords:F Mass Balance, Oil Losses, Screw , PressSoxhletation

1. INTRODUCTION

The Palm oil is one of the main commodities that affect Indonesia's economic growth. Processing of Palm Fruit Bunches at the Palm Oil Mill is intended to obtain palm oil from the fruit flesh (mesocarp) and palm kernel (kernel) from the seed (Nut). The quality of palm oil is affected by the fruit in the garden, in the palm oil processing process it is only to extract it and reduce oil loss as little as possible[1]. Fruit that has been chopped in the digester unit is then pressed in the screw press unit. The pressing process is a process of pressing the fruit mass to separate the oil from the fruit flesh. During the pressing process, hot water is added to the screw press as a source of heat energy [2]. This aims for dilution (dilution) so that the mass of the fruit pulp that is pressed is not too tight. If the mass of fruit pulp is too dense, a high viscosity liquid will be produced which will complicate the separation process thereby increasing oil loss. For this reason, water is poured into the fruit pulp that has been crushed so that the oil content in the fruit flesh comes out[3]. The diluent water used is usually 18-20% of the amount of processed FFB. The amount of diluent water given affects the oil losses in the fiber. If the amount of diluent water given is small, the oil produced is purer but losses are high[4].

In addition to the need for dilution in the pressing process, what also needs to be considered is the pressure and temperature of the palm oil mixture. The standard temperature for the pressing process at a palm oil mill (PKS) is between 90-95 oC. Temperatures below 90oC will cause poor results when the palm dough is extracted. Unfavorable results like this still have a lot of palm oil attached to the extracted fibers[5]. On the other hand, the temperature of the palm dough above 95oC will cause the dough to turn brown dry charred. The pressure at the screw press station in the process of pressing oil palm fruit is 50-60 bar. The by-product of pressing is dregs. The pressing process is the first station to start extracting oil from the fruit flesh by crushing and pressing loose fruit[6].

The mass balance of a process operating system in industry is a quantitative calculation of all the materials that are accumulated (stored) and wasted in the system. Balance calculations are used to find process variables that are not yet known based on the process variable data you want to find[7].

To prevent increased losses in the screw press, several things can be considered such as press pressure,

pressure, temperature and also the addition of delusional water. The method of determining oil loss in the pressing process this time was carried out by the sokhlet extraction method. In the standard or norm of CPO losses, the limit for oil losses in the dregs press (press cake) must be around 4 – 6%[8].

The digester is a layered cylindrical tube and has a rotary axle equipped with a stirring blade. These knives are made to cross each other so that the stirring power of the knife is large enough and the blade is tilted so that the fruit is stirred up and down so that the pulverizing process becomes more perfec[9]t. This tool serves to pulverize Loose Fruit before being processed in a screw press machine. The main purpose of the digestion process is to prepare the fruit pulp for pressing so that the oil can easily be separated from the fruit flesh with the smallest possible loss. Several things must be considered in the mixing process. The oil formed in the mixing process must be removed because if the oil and water are not removed it will act as a lubricating agent so that the frictional force will be reduced in the press machine[10].

The digester must always be full or at least ¾ of the capacity of the digester, this is done so that there is pressure on the fruit inside the digester to enter the screw press so that perfect pressing will occur.The chopped results from the digester will enter the screw press, where the function of the screw press is to squeeze out the chopped and crushed lumps from the digester to get crude oil. This machine consists of 2 mixed iron rods in the form of a spiral (screw) with a horizontal arrangement and rotating in opposite directions. Palm that has been crushed will be pushed and pressed by the cone on the other side, so that the palm fruit becomes squeezed. This tool is used to separate the crude oil from the pericarp[11].

This tool consists of a cylinder with holes in which there are two screws rotating in opposite directions so that the fruit pulp is pressed against the cones. Oil exits from the mixing boiler through the feeder screw or pressing section which has holes, and is then accommodated in the oil gutter. While the fibers and seeds are transported by cake breaker conveyor (CBC) to the separation and flow of oil on the feed screw, steam injection is carried out and hot water or delusional water is added with hydraulic pressure on the accumulator 50-70 bar. The crude oil extract from the screw press machine is then added to the condensate as dilution water. This mixture of crude oil and diluted water is called diluted crude oil (DCO). The added dilution water serves to facilitate the separation process between crude oil and sludge at the Clarification Station[12].

In the compression process, the fruit pulp that has been crushed will be squeezed out of the pulp densely from all directions and will be subjected to hydraulic resistance. The screw rotation will also bring the dregs out of the press to the Cake Breaker Conveyor for further processing. To make the oil extraction process efficient in the screw press, the things that must be considered are

1. Process pressure. If the process pressure is not optimal, it can cause high oil losses or a high percentage of broken kernels.
2. The temperature of the fruit flesh that comes out of the digester must be 90-95oC so that the oil separation can work perfectly.
3. The condition of the worm screw, press cage and cone must be considered including checking for wear, because it affects the yield of oil obtained, if the pore holes of the press cage are clogged then the oil will be carried out along with the dregs.

The pulp that has been crushed, the oil content should not be too little (because it has come out of the digester). This can cause the worm screw to easily wear out and if the oil content is not quoted from the digester it will also cause high oil losses. Therefore, monitoring of oil extraction must be maintained carefully.

The delusional water given to the screw press depends on the type of tool. Giving diluent water is done by

watering the cake in the press from above the middle and/or in the chute screw press. The amount of delusional water given depends on the temperature of the delusional water, the higher the temperature of the diluent water, the less amount of water given. Giving too much diluent can result in:

1. High cake water content can cause the process of:
- More difficult cake breaking in cake breaker conveyor (CBC). This often causes the CBC load to be too heavy.
- The higher the water content of the dregs, the lower the heat of combustion which can reduce the capacity and efficiency of the boiler.
- Ripening seeds with high water content in seed silos will be more and can lead to lower seed extraction efficiency.
2. Decreased screw press capacity due to increased water content and cake movement speed in the worm.

The amount of diluent water given, according to the experimental results on several screw presses, is 50-70% of the oil content in the dough, for example if the yield of oil is 22% with a screw press capacity of 10 tons of FFB/hour then the water sprayed as diluent is 1 .1-1.65 m3.

Loss comes from the word "lost" which according to the Big Indonesian Dictionary means no longer exists or is not visible. When it is associated with the process of producing palm oil into crude palm oil (CPO), oil losses are the percentage of oil that does not exist or is not involved in the next oil processing process but is carried over to other processes. The loss/loss figure for palm oil is the amount of oil that is not taken up in the processing process. In this oil losses analysis using socket extraction method. Soxhlet extraction is an extraction that separates oil and hexane. The principle of extraction for oil losses is to separate two substances with different densities, namely oil and hexane. The mass balance at the press station is the unreacted mass balance. The mass balance at the press station is calculated at the digester and screw press units consisting of a total mass balance and a component mass balance. The total mass balance in the digester consists of incoming and outgoing materials where the incoming material is loose and steam while the outgoing material is digester chunks consisting of oil, water and steam. Component balance in the digester consists of oil, water and NOS. The mass balance in the screw press also consists of a total mass balance and a component mass balance, the total mass balance consists of incoming and outgoing materials where the incoming material is chopped digester and delusional water while the outgoing material is press dregs and crude oil. The component balance in the screw press consists of oil, water, core, shell, fiber and mud. The mass balance is a precise calculation of all incoming, accumulated and outgoing materials in a certain time. This statement is in accordance with the law of the conservation of mass, namely: mass cannot be incarnated or destroyed. The general principle of a mass balance is to make a number of equations that are independent of one another, where the equations are independent of one another, where the sum of the equations is equal to the sum of the unknown mass compositions[13].

2. RESEARCH METHOD

esearch conducted at PT. Sumber Bumi Sawit Jadi Jaya which is located in Hatonduhan District, Simalungun district, North Sumatra Province.

The tools used in this study were digesters, screw presses, desiccators, extraction flasks, analytical balances, ovens, hot plates, shocks and thimbles. Meanwhile, the materials used in this study were coconut bbrondola and also delusional water.

The work procedures used in this study are as follows:

1. Work procedures carried out in the laboratory:

Analysis of the water content contained in the dregs press (fiber).
- The empty cup is weighed as W1.
- Press dregs (fibre) is taken as much as 10 grams and then put into a cup and weighed as W2.
- The pressed dregs were dried in an oven at 103 OC for 3 hours and then cooled in a desiccator for 15 minutes and then weighed as W3.

Analysis on dregs press to calculate oil loss.
- The empty extraction flask is weighed as W4.
- The dried lead is put into the sokhlet.
- The extraction flask is assembled together with the sokhlet condenser and hot plate.
- Extraction was carried out for 5 hours using N-hexane solvent.
- N-hexane and flask filled with oil are evaporated in the oven for 15 minutes.

$$water\ level = \frac{W_2 - W_3}{W_2 - W_1} x\ 100\% \text{ .....(equation 1)}$$

$$oil\ level = \frac{W_5 - W_4}{W_2 - W_1} x100\% \text{.....(equation 2)}$$

3. RESULTS AND DISCUSSIONS

Table 1. Tabulation of mass balance calculation results in the digester unit

No	Komponen	Masuk				Keluar	
		F^1=2001 Kg/jam		F^2=20.400 Kg/jam		F^3 = 22.401 Kg/jam	
		Persentase (%)	Laju Massa (Kg/jam)	Persentase (%)	Laju Massa (Kg/jam)	Persentase (%)	Laju Massa (Kg/jam
1	Minyak	-	-	40,26	8123,04	36,66	8217,2066
2	Air	100	2001	4,69	956,76	13,20	2,956,9320
3	Inti	-	-	3,96	807,84	3,61	808,6761
4	Cangkang	-	-	9,93	2025,72	9,04	2025,0504
5	Serabut	-	-	7,87	1605,48	7,17	1606,1517
6	Lumpur	-	-	33,29	6791,16	30,32	6791,9832
Jumlah		2001 Kg/jam		20400 Kg/jam		22401 Kg/jam	
Total		**22401 Kg/jam**				22401 Kg/jam	

Table 2. Tabulation of mass balance calculation results in the screw press unit

No	Komponen	Masuk				Keluar		
		F^3=22401 Kg/jam		F^5=6000 Kg/jam		F^5 = 8400 Kg/jam		F^6= 20001 Kg/jam
		Persentase (%)	Laju Massa (Kg/jam)	Persentase (%)	Laju Massa (Kg/jam)	Persentase (%)	Laju Massa (Kg/jam	Laju Massa (Kg/jam)
1	*Oil Losses*	36,66	8217,2066	-	-	36,66	8217,2066	7838,3919
2	Air	13,20	2956,9320	100	956,76	13,20	2,956,9320	5370,2685
3	Inti	3,61	808,6761	-	807,84	3,61	808,6761	-
4	Cangkang	9,04	2025,0504	-	2025,72	9,04	2025,0504	-
5	Serabut	7,17	1606,1517	-	1605,48	7,17	1606,1517	-
6	Lumpur	30,32	6791,9832	-	6791,16	30,32	6791,9832	6792,3396
Jumlah		22401		6000		8400		20001
Total		**28401**				**28401**		

The pressing station consists of a Digester unit as a place for counting loose lumps and a Screw Press as a place for separating crude oil from the mixed mass by means of compression. To find out the balance between incoming feed and outgoing product in the pressing unit, it is necessary to calculate the mass balance.

The mass balance calculation is based on a processing capacity of 30 tons/hour that the loose fruit digester enters 68% of the total processed FFB, which is 20,400 kg/hour consisting of 6 components, namely oil of 8,213.04 kg/hour, water of 956 .76 kg/hour, core of 807.84 kg/hour, shell of 2025.72 kg/hour, fiber of 1605.48 kg/hour, and mud of 6791.16 kg/hour, with a temperature of 66oC. Then chopped in the digester with the addition of steam as much as 2,001 kg/hour at 123ºC. After the loose lozenges are chopped, they are then pressed in a screw press with an inlet rate of 22,401 kg/hour. During the pressing process hot water (delusional water) is added as much as 6,000 kg/hour at 95ºC into the screw press as a source of heat energy. This aims for dilution (dilution) so that the mass of the slurry that is pressed is not too tight and makes the pressing process easier. The main product of the screw press is crude oil which consists of 7,838.3919 kg/hour of oil, 5,370.2685 kg/hour of water and 6,792.3396 kg/hour of sludge. And the by-products are dregs with a composition of 373.80 kg/hour of oil, 3,585.96 kg/hour of water, 808.92 kg/hour of core, 2,025.24 kg/hour of shell, and 1,606.08 kg of fiber. /O'clock.

Determination of oil losses is carried out by the soxhletation extraction method. Where as much as 10 g of sample (fiber) was taken and then brought to the laboratory to check the water content and oil losses. The fiber was dried in an oven at 103˚C for 3 hours to remove the moisture content. Then the dry sample was extracted with N-hexane for 5 hours to extract the oil in the sample. And obtained oil losses of 4.45% and water content of 42.69%. Oil losses obtained are in accordance with the norms of oil loss in the factory, namely 4-6%.

4. CONCLUSION

Based on the results of the analysis that has been carried out, it can be concluded that:

The percentage of oil loss obtained from the dregs of the press is 4.45%, The amount of oil losses in the screw press unit with a sample of press pulp (fiber) is 373.80 kg/hour.

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Effect of Retention Time On Quality Clarified Oil In Continuous Settling Tank (cst) at PT. XYZ

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ABSTRACT

A One of the units at the clarification station is the Continuous Settling tank. Continuous Settling tanks area place where the crude oil is separated from the crude oil tank. Continuous Settling tank works forseparate oil from sludge based on differences in specific gravity, where the lighter fraction is the oil is at the top while the heavier sludge is at the bottom. Retention time (time stay) is the length of time the oil is stuck in the CST tank starting from the time the oil enters until it exitstank. The longer the oil is in the CST, the greater the precipitation that occurs. so that the resulting separation is getting better and the sludge will settle to the bottom of the tank. The purpose of this study is to determine the relationship between retention time and percentage (%)dirt content, water content and oil content in clarified oil and find out the best residence time for produce CST oil output of the highest quality. This research was conducted with a variation of retention times 4, 5 and 6 hours . The results showed that the best quality of oil (clarified oil) was obtained at retention time of 6 hours with a yield of 99.499% oil, 0.475% water and 0.06% dirt.

Keywords:Clarified OilContinuous Settling TankRetention time

1. INTRODUCTION

Palm oil processing is a processing process that produces coconut oil palm. The main products that can be obtained are palm oil, palm kernel, fiber, shells and bunches empty. The palm oil mill (PKS) in the context of the palm oil industry in Indonesia is understood as Crude Palm Oil (CPO) and palm kernel extraction unit from oil palm Fresh Fruit Bunches (FFB). PKS composed of process units that utilize a combination of mechanical, physical, and chemical treatments[1]. Important production parameters such as extraction efficiency, yield, product quality are very important its role in ensuring the competitiveness of the oil palm plantation industry compared to vegetable oils others [2].

Crude Palm Oil (CPO) is often referred to as crude oil or crude oil. Procedure processing of oil palm is a description of the process and mechanism of processing in each unit processing equipment since the fruit is received at the factory until it produces sufficient crude palm oil quality with technical and economic efficiency. The processing of palm oil into CPO is carried out inseveral stages, namely boiling, shelling, pulverizing, pressing and purification[3].

This content separator (purification) process is a continuation of the screw press process or processpressing where the oil palm fruit that has been pressed will produce oil, however The oil produced from the pressing process still contains a lot of impurities such as sludge, sand, silt and moisture content. This is what makes the palm oil mill continue oil refining process in order to get perfect oil quality[3].

The purpose of oil refining is to get oil of good quality and get a decent price on the market. One of the units that play a role in oil refining is a continuous settling tank (CST). In CST, the crude oil filtered is

is purified with the deposition process[4].
Continuous settling tank (CST) is a continuous tank type that can separate phases heavy and light phases while flowing from one bath to another. Separation that occurred through the process of deposition and is influenced by the force of gravity[5].
The deposition process occurs based on the difference in specific gravity between the fluids containedinside a CST[6]. In CST there are 3 kinds of fluids namely mud, water and oil. Based on the process of deposition of dirt and mud by utilizing the force of gravity, so that it is formed layers where the top layer is oil due to differences in density [7]. Layer formed from the bottom layer of sand, sludge and oil. On sand and sludge contains a few percent of oil so that due to the force of attraction there is oil the sand and sludge are also attracted to the top layer, namely the oil layer[8].
The process of deposition with gravity is influenced by several factors including particle size and shape, particle concentration, temperature and viscosity and length of retention time. The length of residence (Retention time) in the continuous settling tank (CST) is very important in oil separation efficiency and oil quality[9].

2. RESEARCH METHOD

The tools used in this study were 25mm Whatman filter paper, oven, desiccator, Vacuum Erlenmeyer Flashk Filtering, Vacuum pump oil, Gooch Crucible, Analytical balance, hose, spray bottle, Beaker glass, stir bar, hotplate and crucible pliers as well as for the hazards namely Clarified Oil (sample) and N-hexane. And the procedure as follows:

1. Dirt Content

a) Sample Preparation

The filter paper was put into the Gooch crucible and then rinsed using N-Hexane, filter paper and Gooch crucible are weighed using a balance analysis, Gooch crucible which contains filter paper is put into the oven for 30 minutes, Gooch crucible is put into the desiccator for 15 minutes, Gooch crucibleand the filter paper were weighed again (A). The same experiment was repeated to get a constant value

b) Analysis of impurities content

Clarified Oil is weighed on an analytical balance in a beaker glass of 20 grams ©, Clarified Oil is heated on the hotplate until it reaches the boiling point and the hotplate is on extinguish until the Clarified Oil reaches room temperature, N-Hexane is added as much 150 ml and homogenized, the constant Gooch crucible was attached to the vacuum Erlenmeyer Flashk Filtering, Clarified Oil is slowly added to the Gooch crucible, Vacuum pump oil is turned on, Beaker glass is rinsed using N hexane until there is no Clarified Oil left, rinse the Gooch crucible and filter paper no oil left,Gooch crucible dried in the oven for 30 minutes, put the Gooch crucible in the desiccator for 15 minutes, Gooch crucible weighed on an analytical balance (B) [10].

2. Moisture Content

The empty beaker glass is weighed on an analytical balance and the weight is recorded (W1), sample Clarified Oil is added as much as 10 into the beaker glass and the weight is recorded (W2), The beaker glass which already contains the sample is heated on a hotplate with a temperature of 105 C for 30 minutes and after completion the sample was put in a desiccator for 15 minutes, the Clarified Oil sample is weighed again on the analytical balance and the weight is recorded (W3)

3. Oil content

The oil content is obtained by calculating the quality of the water content and grade dirt [11].Information

$$dirt\ level = \frac{B - A}{C}\ x\ 100\%$$

A = Weight of filter paper + empty Gooch crucible (grams)
B = Weight of filter paper + Gooch crucible + Sample (grams)
C = Sample Weight (grams)

$$water\ level = \frac{W_2 - W_3}{W_2 - W_1} x100\%$$

Information :
W1 = Weight of empty Beaker Glass (gram)
W2 = Weight of empty Beaker Glass + Sample before heating (grams)
W3 = Weight of empty Beaker Glass + Sample after heating (grams)

Oil Rate = 100% - (% Dirt Rate + % Water Rate)

3. RESULTS AND DISCUSSIONS

No	Retention Time	Water content(%)	Dirt content(%)	Oil content(%)
1	4 h	0,634	0,027	99,339
		0,595	0,036	99,369
2	5 h	0,486	0,030	99,484
		0,517	0,027	99,456
3	6 h	0,463	0,027	99,510
		0,486	0,025	99,489

Based on the variation of retention time, i.e. 4, 5 and 6 hours, Clarified oil quality was obtained i.e. water content sequentially 0.614% , 0.502% and 0.475% , impurities content sequentially i.e. 0.032%, 0.029% and 0.026% and the oil content obtained sequentially is 99.354%,99.470 % and 99.499 %. So the graph is obtained as follows :

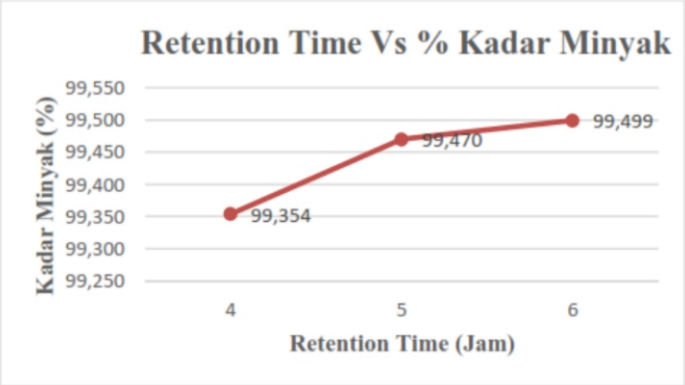

Figure 1. Graph of retention time VS % Oil Content

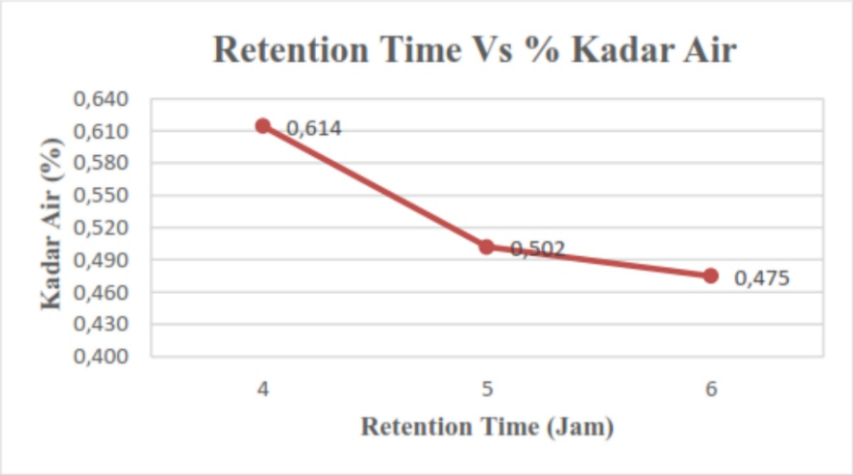

Figure 2. Graph of retention time VS % Moisture Content

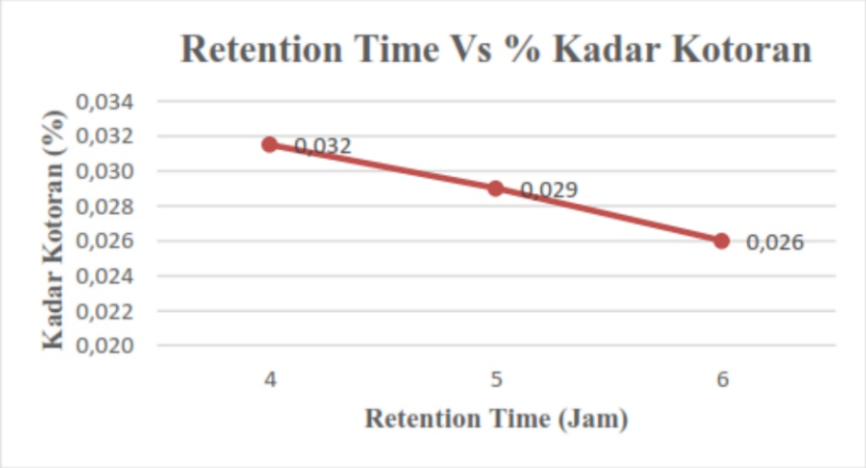

Figure 3. Graph of retention time VS % of impurities

Based on the graph, it can be concluded that the oil content in Clarified oil and retention time has a ratio that is directly proportional, where the longer the deposition occurs, the the more the percentage of oil while the water content and dirt content in Clarified Oil and Retention Time has a comparison that is inversely proportional, where the quality of the water content and the dirt content, namely the longer the deposition occurs, the less the percentage these levels come out of the CST.

4. CONCLUSION

From the observational data from the results of field work practices and by processing the data as well calculation, it can be concluded as follows:

1. The relationship between retention time and the quality of palm oil (Clarified Oil) in Continuous Settling Tank, namely water content and dirt content over time (Retention Time) is inversely proportional, this means that the longer the residence time, the more small amount of water and impurities in palm oil (Clarified Oil) and oil content to the residence time (Retention Time) is directly proportional, this means the longer the time left then the more the amount of oil obtained in palm oil (Clarified oil)

2. The results obtained for the percentage of dirt, water and oil contained in Clarified oil based on retention time variations as follows:

Retention Time 3 hours: Dirt level 0.03 2%, Water level 0.614% and oil level 99.354%.
Retention Time 4 hours: Dirt rate 0.029%, Water Rate 0.502% and oil rate 99.470%.
Retention Time 6 hours: Dirt level 0.026%, Water level 0.475% and oil level 99.499%.

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ANDROID-BASED MOBILE LEARNING APPLICATION FOR LEARNING HIJAIYAH LETTERS

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ABSTRACT

Mobile learning is a learning process that uses the development of technology through electronic devices in the form of smartphones or mobile phones. Currently, learning hijaiyah is still largely done by meeting the teaching staff face-to-face, through Iqra or other print media. With it is considered ineffective and ineffective and causes boredom in children. Therefore, there is a need for an effective, efficient and interactive hijaiyah letter learning medium, which can increase children's exploitation ability to learn anytime and anywhere. The application will be designed with an easy-to-describe UML (unified modeling language) system design tool that can help with system composition. The application will be deployed on Android-based mobile devices.

Keywords:

1. INTRODUCTION

The development of mobile device technology today allows the need for information to be fulfilled. With increasingly rich features and is a perfect solution for the need to get information. One example of telecommunications equipment that has experienced significant development is mobile telecommunications equipment that uses the Android operating system. Through Android, developers are able to use it to build an electronic mobile learning system called mobile learning. The existence of applications on mobile devices can overcome problems for presenting information today, including information about the hijaiyah letter and how to read it so far to get that information through teachers, religious leaders, books, brochures and the like that are less practical, take up special time, place , as well as costs so that this becomes a problem and this can be facilitated by the existence of a more interactive mobile learning application, which can be accessed anywhere and anytime.

The application of Android-based mobile learning has been widely developed including the Design of Iqra Learning Applications for Android-Based Early Childhood (Busran and Nindya Debby Yunanda, 2015). From the published journals, it can be seen that learning application programs can run on the Android operating system which greatly helps the learning process and increases understanding in an interesting way.

With the development of information technology and the manifestation of the positive impact of the development of information technology, the author tries to facilitate children in learning hijaiyah letters and how to read them in an interactive and effective way.

2. Literature Review

2.1 Mobile Learning

Mobile learning can be done by distance learning, making it easier for students to learn. In addition, this Mobile learning-based E-book can help visualize abstract material so that it helps students' understanding (Dwi, et al. 2018).

The learning media developed contains basic material by providing videos on knowledge that are

abstract concepts, so that students can understand the material discussed.
Mobile learning is learning that uses mobile devices such as PDAs, mobile phones, laptops and other information technology equipment for learning (Ariesto Hadi Sutopo, 2012: 175). The advantage of m learning is that learning can access materials, guides and applications related to learning that can be accessed anytime and anywhere.
The benefit of learning media is that it can make learning more attractive to students so that it can foster learning motivation. Teaching materials can also be clearer so that they are easily understood by students. M-Learning is part of electronic learning (e-learning) so that by itself it is also part of distance learning (d-learning). Based on some opinions from experts, it can be concluded that mobile learning is a learning model that utilizes mobile devices to access it. Mobile learning-based e books developed by developers are included in learning that uses mobile as an access device by using students' android smartphones.
There are five advantages of mobile learning, among others, namely that users can access learning content that can be done from anywhere including quizzes, journals, games and others, learning can be done at any time in real time, the use of books is replaced with RAM that can organize and connect learning, learning designed to be used on mobile devices and learning combined with games will be fun (Dwi, et al. 2018)

2.2 Android

Android is a Linux-based operating system that is used for cellular phones (mobile) such as smartphones and tablet computers (PDA) (Yosef Murya, 2014).
Android is an operating system for Linux-based mobile devices that includes an operating system, middleware and applications (Ichwan. M, et al. 2013). Android provides an open platform for developers to create their own applications that will be used to assist activities in various fields, so that it can be used by anyone who wants to use it on their device.
Android is a Linux-based operating system designed for touch screen mobile devices such as smartphones and tablet computers. Android was originally developed by Android, Inc. with the financial support of Google, which later bought it in 2005.(Kusniati, et al.2016).

2.3 Java

Java is a multi-platform and multi-device programming language. Java can be run on several different computer platforms and operating systems. This java-based application is compiled into pseudecode and can be run with the JVM (Java VirtualMachine). This functionality of java can run with different operating system platforms because it is general and non-specific. Java is also an OOP (Object Oriented Programming) oriented programming language. Java has a complete library. The library here is a collection of programs included in java. This will make programming easier (Desmira, 2015).

2.4 Android Studio

Android studio is an Integrated Development Environment (IDE) software development environment for Android application development, based on Intellij IDEA. Apart from being a powerful Intellij code editor and developer tool, Android Studio also offers many features to increase productivity when building Android applications (Herlinah, 2019).

2.5 SQLITE

SQLite is an open source database built into Android. The support provided is the same as standard RDMS and also supports the SQL syntax language (Wahana Computer, 2015: 120). SQLite is a

relational database management system that is ACID-compliant and has a relatively small library size. This software is written in C language.

2.6 hijaiyah letters

According to Ath. Tabari (1999:27) explains that hijaiyah letters are one of the typical types of language that are displayed in the AL - Qur'an. AL - Qu'ran is indeed compiled using hijaiyah letters with different makhraj as well as hinting that AL - Quran was revealed using Arabic.

Otory Surasman (2002:52) argues that "hijaiyah letters are the basic key to being able to read the Qur'an. Hijaiyah letters are used as spelling to write words or sentences in the Qur'an.

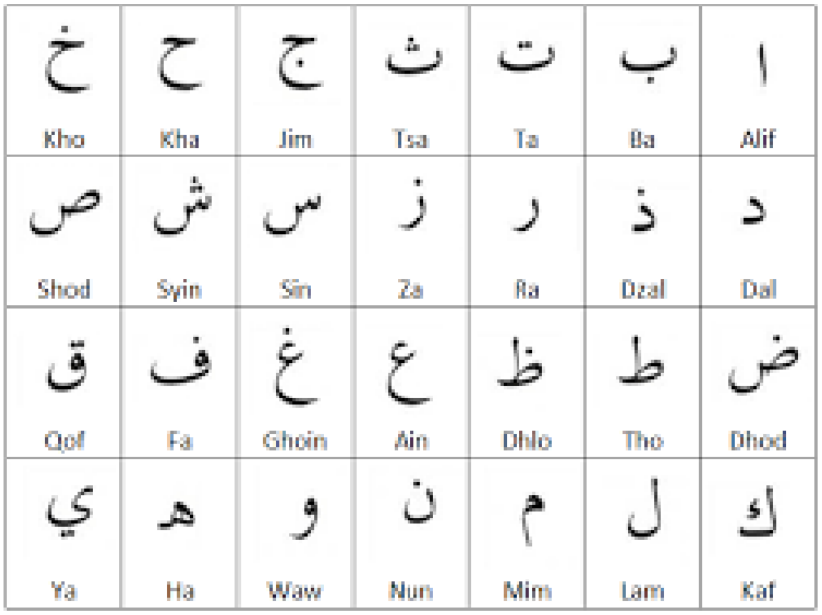

Figure 1. hijaiyah letters

3. METHOD

The stages of research that will be carried out in writing this thesis are as follows:

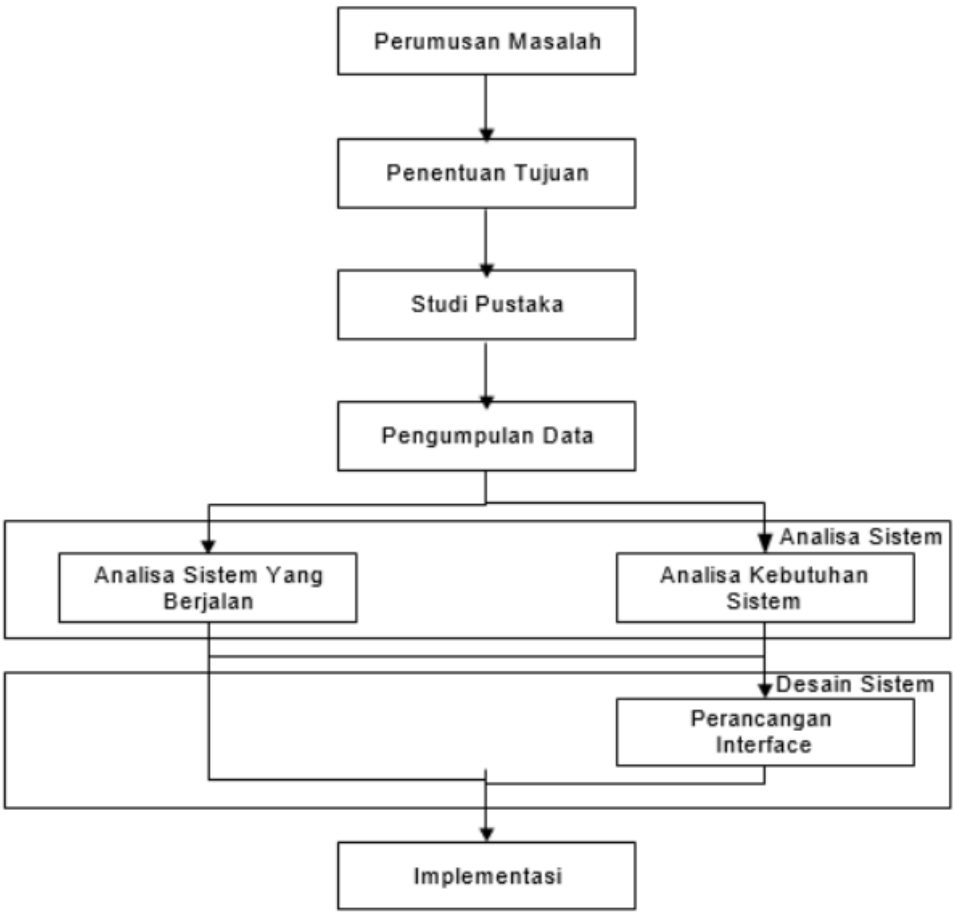

Figure 2. research stages

The designs used in this research are Use Case Diagrams, Sequence Diagrams, Activity Diagrams, Databases, and output and input designs.

The design of Use Case Diagrams for users of this Android-based hijaiyah letter learning application can be seen in the following figure

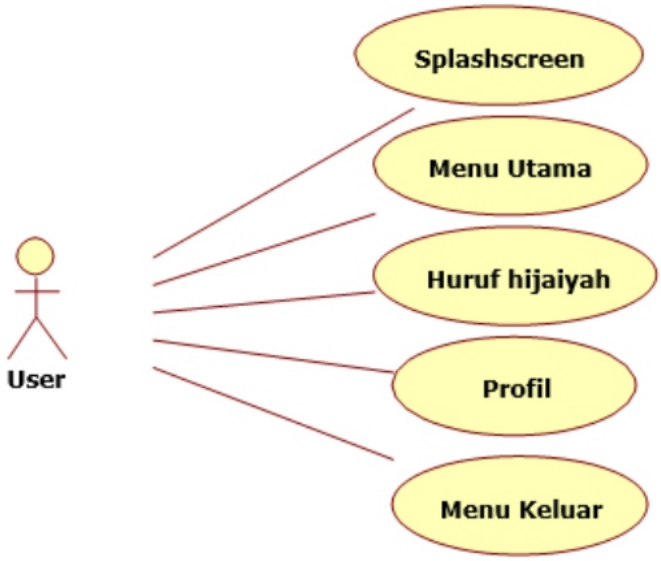

Figure 3. Aplication Use Case

4. RESULTS AND DISCUSSION

System implementation is the result of the execution of the designed application or program. The results of this study will explain the implementation of the application on an Android-based mobile device and how it looks when the application is operated on an Android-based mobile device.

The main menu display of the application will present the contents of the information that will be displayed on the application that is accessed by the user. In Figure 4.6, the main menu of the application can be seen as follows:

Figure 4. Main Menu Interface Tampilan

5. CONCLUSION

Based on the results of the Mobile Learning Design for Hijaiyah Letter Recognition, it can be concluded that: 1) With a mobile learning application that is operated on Android mobile devices, it can facilitate the learning process about hijaiyah letters that can be done anytime and anywhere that is more interactive. 2) The application of the object-oriented system modeling method UML (Unified Modeling Language) can provide a very complex modeling by providing a description of the system flow and logic in the designed system, namely the Hijaiyah Letter Recognition Mobile Learning Application..

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Website-Based Online Work Training Application Design Using Unified Modeling Language

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ABSTRACT

Community demographic data based on work shows that there is a lot of work done by the community. This proves that the community's potential in the aspect of community resources is very good, but in the data it can also be seen that some people do not have a job, or are what we usually call "unemployed." Unemployment rates will increase if proper evaluation is not carried out and will have a negative impact on community resources that are already good. So that unexpected things do not happen, we should dig up community data and manage existing community resources so that we can reduce unemployment so that it has a positive impact on increasing people's income. The purpose of this research is to build a job training application that can be used to collect data on skills and improve the skills possessed by the community, while at the same time knowing the concept of improving digital community resource management that can be done and providing analysis of the application of online information communication. Job training applications are designed using the Unified Modeling Language (UML) and by utilizing Massive Open Online Course (MOOC) technology, sophisticated computer simulation technology with massive open online course techniques, and fast-adapting computer engineering education models.

Keywords: AplicationMOOCJob TrainingUML

1. INTRODUCTION

In Law No. 6 of 2014 concerning Villages, it is stated that Villages are villages and traditional villages, or what are referred to by other names, hereinafter referred to as "Villages," are legal community units that have territorial boundaries that are authorized to regulate and manage government affairs, local community interests based on community initiatives, original rights proposals, and/or traditional rights that are recognized and respected within the system of government of the Unitary State of the Republic of Indonesia. According to R. Bintarto (1977), rural areas are a geographical embodiment caused by physiographic, social, economic, political, and cultural elements that exist there in relation to and reciprocal influence with other areas.

Administratively, a village is an area consisting of one or more sub-villages or hamlets that are combined so that it becomes an area that stands alone and has the right to manage its own household (autonomy). Today, there is a lot of talk about how to maximize the potential of the village, but there are still many of us who don't really understand what that means. A village in everyday life is often referred to as a "village," which is an area that is far from the hustle and bustle of the city and is inhabited by a group of people who make a large part of their livelihood in agriculture. [1], [2]: "Villages are human settlements that are located outside the city, and the inhabitants have an agrarian spirit." Villages with various physical and social characteristics show unity among their elements. The community has a myriad of potentials; this potential is spread over several aspects, such as aspects of natural resources such as agricultural products and tourism, as well as visible aspects of community resources. Community

resources are very diverse, as can be seen in village demographic data in the field of work as shown in Figure 1 below.

Percentage of working population by main field of employment in 2016-2017

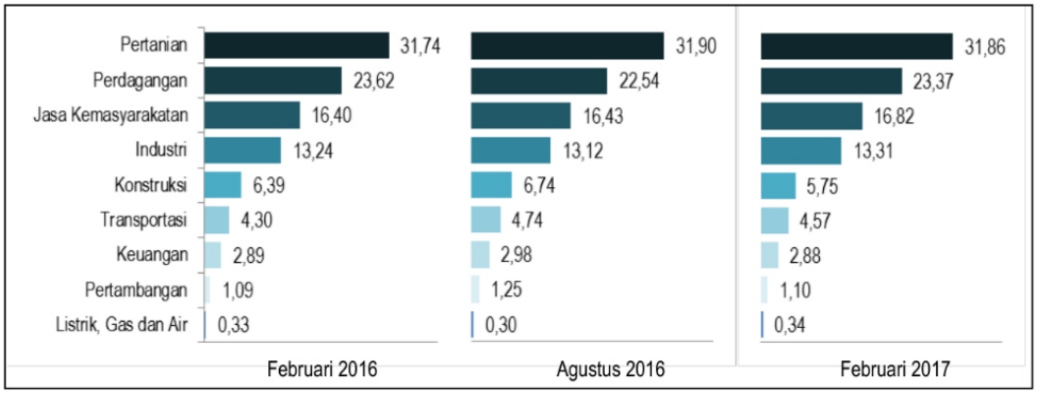

Figure 1. community demographic data

2. RESEARCH METHOD

By using a problem analysis approach, researchers conduct research that focuses on a series of field studies, situations, or individual and collective activities that develop over time in a particular context. It is also equipped with literature studies that support problem analysis. Problem analysis is useful in situations when very little is known about a particular topic or phenomenon. In general, the purpose of problem analysis is to develop solutions that are relevant to the conditions that occur in the field, although it is often used to expand or modify existing problems. This study uses a type of qualitative research. Qualitative research aims to gain a general understanding of social reality from the perspective of participants through descriptive data. Understanding is not predetermined but is obtained after conducting an analysis of the social reality that is the focus of the research, and then a conclusion is drawn in the form of a general understanding of the facts. Qualitative research focuses more on observation and natural settings. Researchers act as observers. He only makes categories of behavior, observes symptoms, and records them in his observation book. Qualitative research uses theory as a reference or guideline in conducting research, not testing theory as in quantitative research.

2.1 research procedure

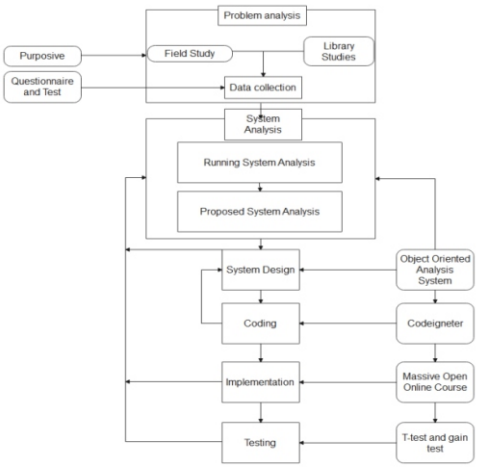

Figure 2. research procedure

3. RESULTS AND DISCUSSIONS

This study aims to build a job training application that can be used to collect data on the skills possessed by the community while at the same time knowing the concept of increasing skills with digital community resource management that can be carried out and providing an analysis of the application of information communication online. Sampling was carried out by means of purposive data collection techniques using questionnaires and tests. Job training applications that use Massive Open Online Course (MOOC) technology to handle complexity problems with sophisticated computer simulation technology, massive open online course techniques, and fast-adapting computer engineering education models. Implement job training applications in online information exchanges to support and improve skills and the management of community resources. Well-managed community resources can reduce unemployment and increase people's income. After being built and implemented, the application will be tested according to its development function. Application testing is carried out using the t-test and gain test techniques, where the t-test is carried out to test the hypothesis and the gain test is to find out the significant results of the community's level of expertise. Building a job training application based on a massive open online course Implement job training applications to reduce unemployment and increase income with proper management of community resources. The results of implementing the Job Training application can improve people's skills, which will have an impact on reducing unemployment and increasing people's income.

4. CONCLUSION

Sampling utilizing focused data gathering methods like tests and questionnaires Massive Open Online Course (MOOC) technology is used to create job training programs that use advanced computer simulation technology, massive open online course methodologies, and quickly adapting computer engineering education models to solve complexity concerns. To promote and enhance skills and community resource management, integrate job training applications into online information sharing. Community resources that are well managed can boost revenue and lower unemployment. The application will be tested in accordance with its development function following construction and implementation. Applications for job training that can be used to gather information on the community's skills and comprehend the idea of improving skills with the implementation and analysis of digital community resource management.

ACKNOWLEDGEMENTS

Applications for job training that can be used to gather information on the community's skills and comprehend the idea of improving skills with the implementation and analysis of digital community resource management

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