

# Design and Build Online Job Vacancy Application in Labuhanbatu Regency

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**Abstract:** Labuhanbatu is a regency in North Sumatra Province which is geographically located on the main route of the east coast of Sumatra. Due to its geographical location, this district has an increasing population. Employment problems in Labuhanbatu Regency which are estimated to be increasingly complex, not to mention driven by the increase in the Open Unemployment Rate (TPT) in Labuhanbatu Regency, encourage the local government to expand and develop employment opportunities. However, Labuhanbatu Regency does not yet have a job vacancy information system that can be accessed by job seekers and companies. Online job vacancy information is a solution in providing information that has a very significant impact in saving time and costs compared to job vacancies in print media. The online job vacancy portal has succeeded in filling the vacancy for job vacancies. This study aims to design and build an online job vacancy application in Labuhanbatu Regency. The system development method used is the waterfall model, while the programming language used is PHP and MySQL DBMS. After designing and implementing the system, it was found that the System Development Life Cycle (SDLC) method with the waterfall model could be applied to build an online job vacancy application in Labuhanbatu Regency. It is hoped that this online job vacancy application can make it easier for job seekers in Labuhanbatu to receive job vacancies information so that the unemployment rate in Labuhanbatu Regency can be suppressed.

**Keywords:** Job Vacancy; Labuhanbatu; SDLC; Unemployment; Waterfall.

## INTRODUCTION

Labuhanbatu is a district located in North Sumatra Province which has an area of 2,561.38 km<sup>2</sup> with a population of 493,899 people (Labuhanbatu, 2021). The geographical location of Labuhanbatu Regency which is crossed by the trans Sumatran national road makes this district increase in population (Watrianthos, Bobbi Kurniawan, Kusmanto, Budiman, & Ulya, 2020). Statistical data in 2020 shows the total workforce in Labuhanbatu Regency is 233,444 people, consisting of 219,314 working residents and 14,130 unemployed people (Labuhanbatu, 2020b). The Open Unemployment Rate (TPT) in Labuhanbatu Regency in 2019 was 5.70%, while in 2020 it was 6.05%, meaning that there was an increase in the unemployment rate of 0.35% (Labuhanbatu, 2020a). The increasing number of TPT is the basis for the government to open new jobs (Labuhanbatu, 2020a). Employment problems in Labuhanbatu Regency, which are estimated to be increasingly complex, encourage the government to expand and develop employment opportunities (Labuhanbatu, 2020b). The creation of new jobs in quantity and quality is one of the main development targets in Labuhanbatu Regency which is expected to absorb the workforce every year (Labuhanbatu, 2020a).

Today's society is a society that is very consumptive of digital technology-based information (Fadilla, 2020). The most widely used digital devices by Indonesian people in 2020 include mobile phones with a percentage of 96% (Rosyadi, Amrullah, Marcus, & Affandi, 2020). A survey conducted by the Association of Indonesian Internet Service Providers (APJII) found that the reasons for using the internet for work purposes were in the top three positions with a percentage of 11.5% (Agustyani & Santoso, 2019). The use of digital technology in the field of labor recruitment has increased rapidly through web-based platforms with the advantage that companies can deal with larger applicant populations more efficiently, as well as to reach a more global market of applicants (Wesche & Sonderegger, 2021). Searching for job vacancies using the internet is accepted faster with a percentage of 25% compared to conventional job searches (Mansouri, Zahedi, Campos, & Farhoodi, 2018).

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This research was conducted with the aim of designing an online portal for web-based job vacancies in Labuhanbatu Regency. There are three reasons why the presence of an online job vacancy portal in Labuhanbatu Regency is needed. First, the unavailability of information on online job vacancies in Labuhanbatu, both managed directly by the district government and private parties. Second, existing online portals such as Loker.id, Jobs.id, Jobstreet, JobsDB, and Karir.com do not accommodate information on job vacancies in the Regency/City area, because they are only dominated by companies domiciled in the capital Jakarta (BIZTECH). (, 2021). Third, the advantages of web-based job vacancies online portals compared to conventional (manual) systems, including: being able to save time and costs, prioritizing security when applying for jobs by minimizing fraud (Taqwiyam & Wijaya, 2017), and a higher quality level of job vacancy information. maintained (Sondang & Yopi, 2019) and more accessible for both companies and job seekers (Kasanah & Franksiska, 2017).

### LITERATURE REVIEW

Job vacancies are the availability of job positions that can be occupied by someone who will apply for work (Musfika & Rusda, 2020). The online job vacancy information portal has succeeded in filling the void of job vacancies that should be filled by the state in improving people's skills in accordance with the needs of entrepreneurs (Cardenas, 2020). Online workforce recruitment is present as an employee recruitment solution whose impact is very significant in saving time and costs compared to traditional recruitment models such as those in print (Banerjee & Gupta, 2019).

One of the tasks and functions of the Manpower Office is to provide and organize an employment information system up to the Regency/City level (North, 2018). The Manpower Office must facilitate information between job vacancies providers and job seekers (Ulfa, Elisawati, & Sofiyan, 2020). The function of the employment information system is to provide job vacancy information that can absorb information from the job provider so that it can be accessed by job seekers without being limited by space and time (Maiyana, 2017). To get information on job vacancies, the community requires a system that can be accessed quickly and accurately (Huda & Apriyanto, 2019).

### METHOD

In developing this application, the System Development Life Cycle (SDLC) method is applied with the Waterfall model. SDLC is a method used by systems analysts in developing information systems according to user needs (Sari, 2018). While the waterfall model uses a sequential software life cycle approach starting from analysis, design, coding, and testing (Oktaviani, Susanti, Sarkawi, & Adriani, 2019) which is shown in Figure 1.

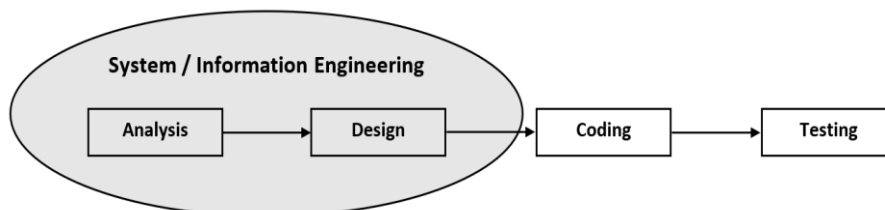


Fig 1. Waterfall Model (Wahyudi & Rhinaldi, 2018)

#### Analysis

At this stage an analysis is carried out to find out things related to system requirements. Then identify the problems and solutions that can be applied.

#### Design

At this stage, business process design is carried out by modeling the system using the Unified Modeling Language (UML) tool.

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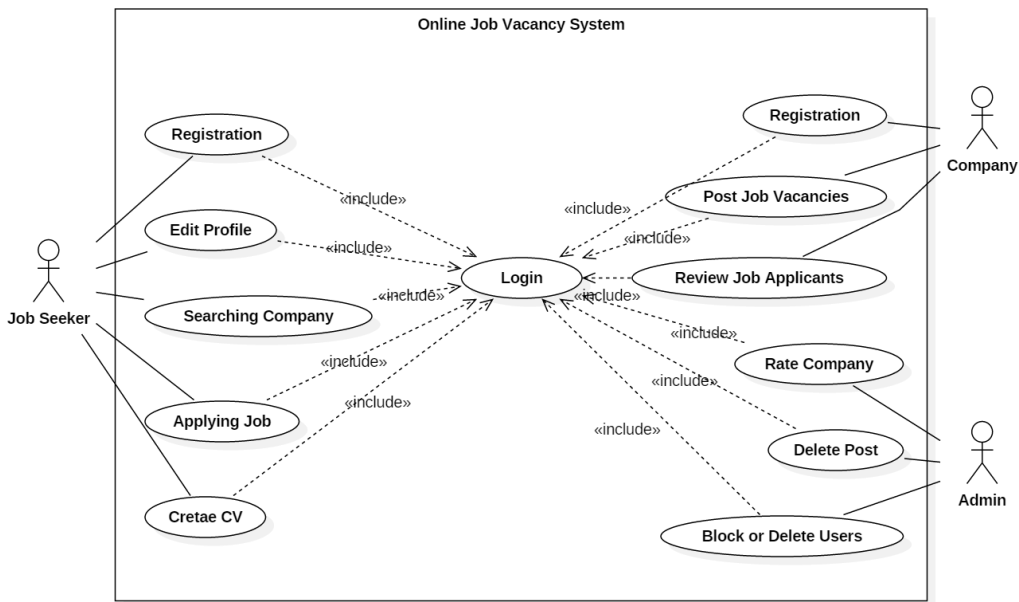


Fig 2. Use Case Diagram

The use case diagram shown in Figure 2 shows three actors in the system, namely: Applicants, Companies, and Admins who have different access rights. The first actor, namely the applicant, must register first before looking for a job that suits his wishes. Only then can applicants apply for jobs on the application by including their curriculum vitae (cv). The second actor, the company, also has to register to get an account and post job vacancies. The company can also conduct a review of the data from job applicants. While the third actor is the Administrator whose function is to control the activities carried out by applicants and companies.

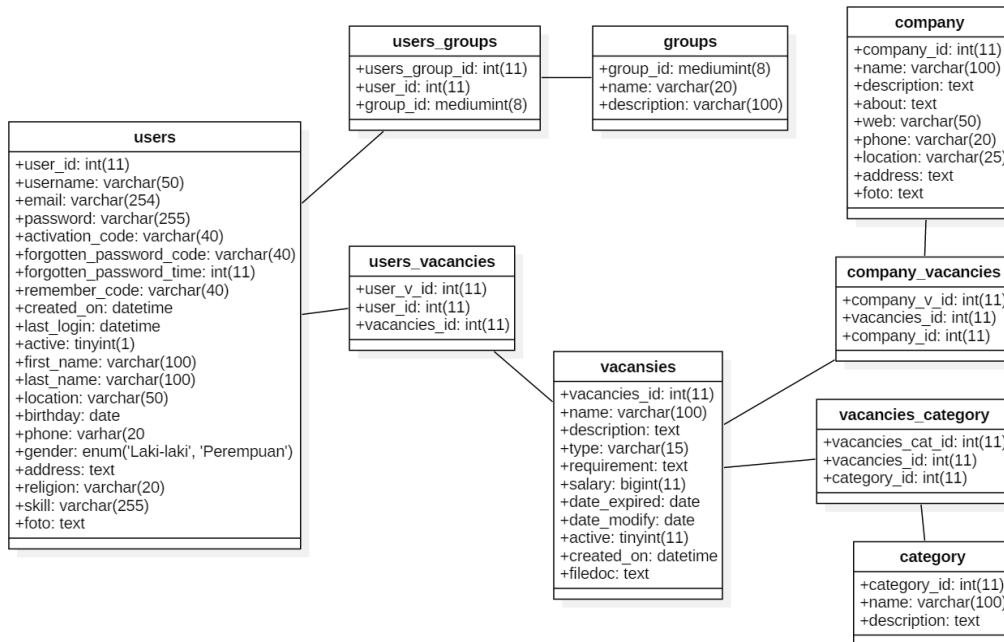


Fig 3. Class Diagram

The class diagram shown in Figure 3 explains the relationship between each entity in the database that is related to each other (Utami, Zen, & Rauna, 2021) in the online job vacancy system. In the class diagram of this system, there are 9 tables that are related to each other.

**Coding**

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This stage is also called the implementation stage of system design. At this stage the design is translated into program code using the PHP programming language as a backend and the Database Management System (DBMS) used is MySQL.

### Testing

At this stage, the functional unit testing of the system is carried out using the Blackbox Testing method.

### RESULT

The online job vacancy information system application has been successfully designed and built. The process of applying for jobs through an application is carried out after the applicant registers. After getting a username and password, applicants can login through the application and then immediately look for the desired job. Previously, applicants were also able to edit profiles to complete the profile as an identity. After getting a suitable job, applicants can apply for jobs by pressing the apply button on the application. Furthermore, applicants will be directed to the process of making a curriculum vitae as personal data that will be reviewed by the company concerned.

Figure 4 is a display of the home page of an online job vacancy application in Labuhanbatu Regency. On the home page there is a menu of job vacancies, company, registration, and login information.

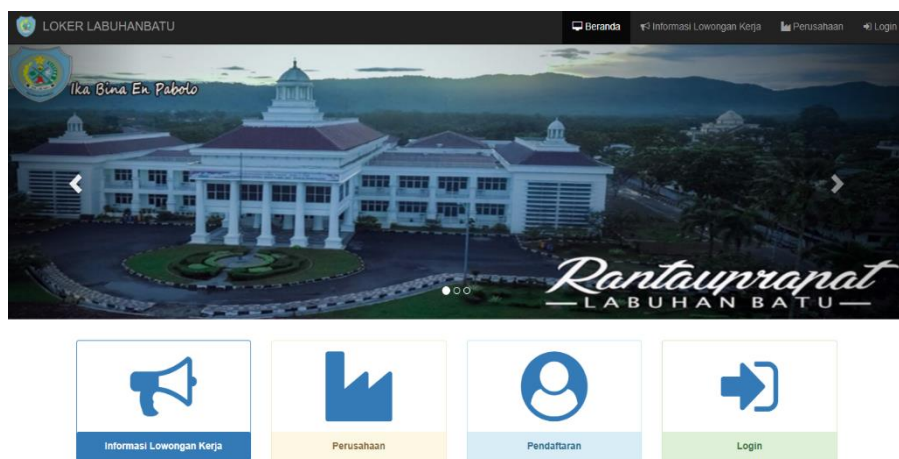


Fig 4. Home Page

On the job vacancy application login page the user can enter a username and password after going through the registration process. On the admin home page, there are menus owned by the admin in managing the system, which include company lists, job seeker data, company data reports, job seeker data reports, and others.

On the company data page that has been registered there are company names, emails and addresses. Company vacancies page serves to advertise job vacancies. This page can only be accessed by company members who have logged in. To advertise vacancies, some data is required that must be filled in. Company vacancies page serves to advertise job vacancies. This page can only be accessed by company members who have logged in. To advertise a vacancy, several data must be filled in, including: name of vacancy, vacancy description, education level, type of work, experience, salary, age, date of publication of vacancies, and expiration date of vacancies. On this page, company members who have logged in can search for applicants directly by entering some of the desired applicant criteria.

Another page is a page for job seekers. The job seeker page is the start page when job seekers log in to the website. If the login is successful, then the system will forward to the job seekers page. On this page there are several functions including job seeker profiles or personal biodata, a list of vacancies, and a historical list of job vacancies.

Figure 5 shows a trial of job vacancies input by registered companies. This trial aims to determine whether the job vacancy input process is running according to its function. Testing of job vacancies on this page is done by filling in all fields, including: vacancy title, vacancy category, and description.

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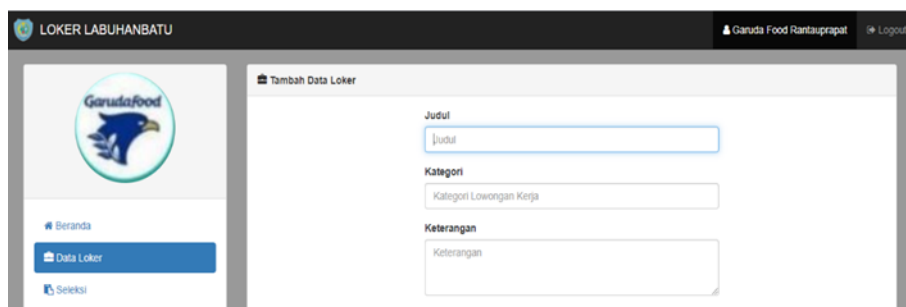


Fig 5. Job Vacancies Input Page

After all the fields on the page are entered, the results appear as shown in Figure 6. The results show the name of the company, type of work, job requirements, and date of posting of vacancies. On that page, companies can still edit and delete job postings.

3	PT. Garuda Food	Sales Representative	Requirement : - Pria, Usia Max 30 Tahun - Pendidikan Minimal D3 - Mempunyai SIM C Aktif - Memiliki sepeda motor sendiri dan layak pakai - Penempatan Rantauapat - Memiliki passion di Sales Marketing - Mampu mengoperasikan Ms. Excel dan Ms. Word	23-07-2021 03:51:21	 
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Fig 6. Job Vacancies Input Results

Next, the input validation test was carried out on the login form using the blackbox testing method. In this test, the user enters a username and password combination on the login form. If the combination entered is correct, a data loading form will be displayed, but if the combination entered is incorrect, a notification of failed login will appear. The results of the trial using blackbox testing are shown in Table 1 below.

Table 1. Blackbox Testing Result

Scenario	Expected Output	System Output	Result
Login admin menu	Enter the admin home page if the username and password are correct	The system directs entry to the admin home page	Success
Applicant profile menu	When the profile menu is selected, the display will switch to the applicant's profile menu	The system directs to the applicant's profile menu	Success
Applicant's CV menu	When the CV menu is selected, the display will switch to the applicant's CV menu	The system directs to the applicant's CV menu	Success
Job menu	When the job menu is selected, the display will switch to the job menu	The system directs to the job menu	Success
Company list menu	When the company list menu is selected, the display will switch to the company list menu	The system displays the company list menu	Success

The test results in Table 1. show the correspondence between the expected results and the actual results. So it can be concluded that the testing process on this system using the blackbox testing method has been successful.

### DISCUSSIONS

The initial goal of designing and building a job vacancy information system is to provide information widely with online web media so that the wider community, especially in Labuhanbatu district, can easily receive job vacancies information quickly and in real time. In addition, this system also makes it easier for companies to advertise job vacancies independently according to their needs through this website. After being tested in the previous section, this information system can generate job vacancy information in real time and according to the

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competence of each individual, so that job seekers can easily get the desired job vacancies and according to the expertise of each individual.

### CONCLUSION

This research has succeeded in designing and building an online job vacancy application in Labuhanbatu Regency web-based. The System Development Life Cycle (SDLC) system development method with the waterfall model has been successfully used in designing and building an online job vacancy application in Labuhanbatu Regency. PHP programming language and MySQL DBMS have been used successfully in implementing this application. It is hoped that this online portal will make it easier for job seekers in Labuhanbatu to receive job vacancies information so that the unemployment rate can be reduced. This system can be better developed into a smartphone-based application.

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