

# Website-Based Online Job Training Application Design Using the Unified Modeling Language

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## ABSTRACT

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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 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 provide 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, fast adapting computer engineering education models.

Keywords: Application, MOOC, Job Training, UML

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## 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. As according to R. Bintarto (1977) that rural areas are a geographical embodiment caused by physiographical, 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 more and more talk about the issue of optimizing village potential, but there are still many of us as people who don't really understand the meaning of the village. 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] that "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.





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 which is the focus of the research, 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..

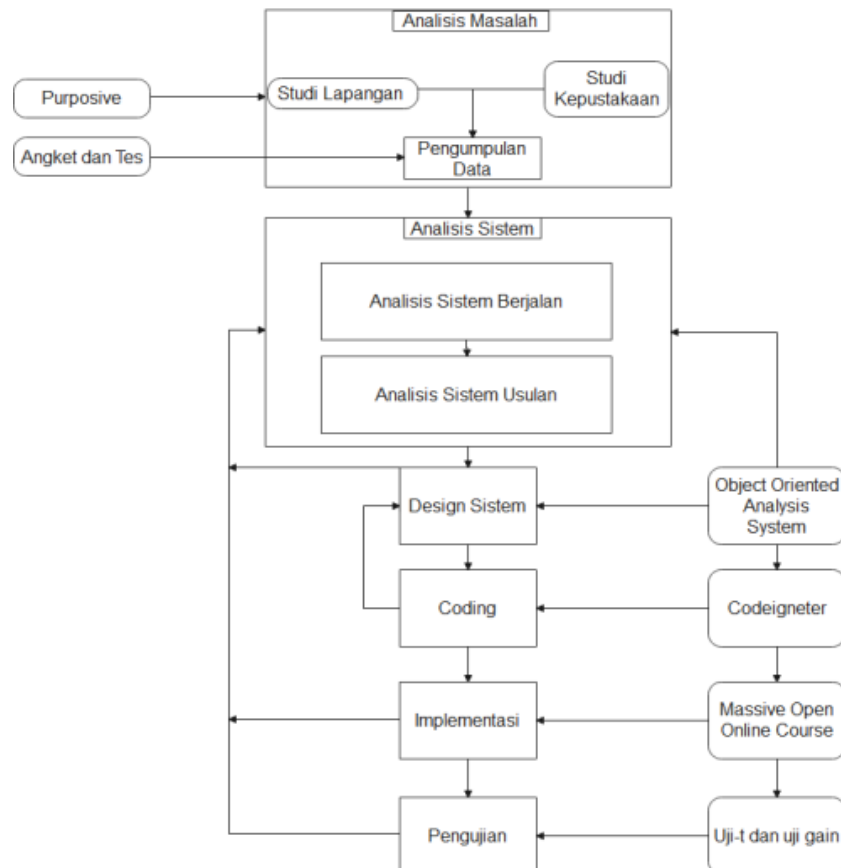


Figure 2. Research Procedure

The design of a Website-Based Online Job Training Application Using the Unified Modeling Language" includes the steps that will be taken to conduct research in order to design a website-based online job training application using the Unified Modeling Language (UML) method. The following is an explanation of the research method:

#### Introduction

In the introductory section, the research will begin by providing background on the importance of online job training and why a website-based application is needed for this purpose. Here, an explanation of UML as a design method will be given to provide an understanding of the approach to be used in this research.

#### Literature review

The literature review section will focus on two main aspects, namely:

a. Online Job Training: The literature review will examine relevant sources on online job training, its benefits, challenges faced, and existing similar applications. This will help understand the needs and roles of the applications that will be designed in this research.

b. Unified Modeling Language (UML): In this section, the literature related to UML as a design method will be investigated. This study will discuss various UML diagrams, such as use cases, class diagrams, activity diagrams, and others, as well as how UML can be used to design applications.

#### Research Approach

This research will use a combination approach between qualitative and quantitative. A qualitative approach will be used to understand user needs, gather input from potential users, and define application usage scenarios. Meanwhile, a quantitative approach will be used to measure the performance and efficiency of the application in testing.

#### Research design

This study will use an experimental research design. Application design will be carried out based on the needs and input of potential users. Various UML diagrams will be used to model and plan application features and interactions between the user and the system.

#### Application Development

Application development will involve a development team consisting of programmers and designers. UML diagrams that have been prepared will be used as a reference in the development process, including the selection of the appropriate technology and programming language.

#### Implementation and Testing

After application development is complete, the next step is implementation in a real environment (production). Applications will be thoroughly tested to ensure quality and performance according to established standards.

#### Evaluation and Results

Evaluation is carried out to measure the success of the application in achieving research objectives. Test results and feedback from users will be the basis for evaluating the extent to which the application is successful in providing online job training that is effective and easy to use.

### 3. RESULTS AND DISCUSSION

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 are built by utilizing Massive Open Online Course (MOOC) technology so that complexity problems are handled by sophisticated computer simulation technology with massive open online course techniques, fast-adapting computer engineering education models. Implement Job Training applications in online information exchange to support and improve skills and 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 so that it will have an impact on reducing unemployment and increasing people's income.

### 3.1. Application Testing Results

#### Application Functionality

The results of the online job training application will include various features and functionalities that have been designed using the Unified Modeling Language (UML) method. These features will include, but are not limited to:

User registration and authentication: Users can register and log into the system with a valid account.

List of training courses: User can view the list of available training courses.

Course details: Users can view the description, objectives and curriculum of each course.

Content management: Administrators can easily manage course content, such as adding, editing or deleting training materials.

Quizzes and Exams: Users can take quizzes or exams as part of the training evaluation process.

Certification: Users who successfully complete the course may receive a certificate as proof of success.

Progress tracking: Users can track their progress in the courses they are taking.

Interaction with instructors: Users may interact with instructors or other participants via forums or other communication channels.

#### User Interface

The user interface of the application will reflect the design that has been proposed in designing using UML. This will include an intuitive layout design, easy navigation, and attractive visual elements to enhance the user experience.

#### Application Security

The results of this application must pay attention to adequate security aspects, such as protecting user data and securing sensitive information, such as passwords, through appropriate encryption technology.

#### Application Performance

App performance will be tested to ensure responsiveness and fast load times. Applications should be able to handle high user loads well.

#### Availability and Scalability

Applications should be designed with availability and the ability to scale as required. This means that applications must be accessible anytime and from anywhere, and also have the ability to handle an increasing number of users.

#### User Satisfaction

One indicator of application success is the level of user satisfaction. The results of this application can be measured based on user feedback, satisfaction surveys, and user involvement in using the application.

#### Compatibility with Research Purposes

The results of this application will be evaluated based on the extent to which the application achieves the predetermined research objectives. This evaluation will include whether the application is successful in providing an online job training platform that is effective and meets user needs.

### 3.2. Discussion of Findings

Website-Based Online Job Training Applications Using Unified Modeling Language will include results from research and implementation of applications that have been designed using the Unified Modeling Language (UML) method. The following is a discussion of some of the findings that may emerge:

#### Application Design Quality:

Discussion of the findings will include an evaluation of the design of applications that have been made using UML. In this discussion, it will be explained how UML helps in designing applications in a more systematic and structured manner. Then, an emphasis on the advantages of UML-based design, such as using use case diagrams to identify main functions, class diagrams to describe data structures, and activity diagrams to design workflows, will be explained.

#### App Functionality:

Findings about application functionality will include an assessment of the features that have been implemented based on the design using UML. This evaluation will cover the successful implementation of features such as user registration and authentication, course content management, quiz and exam management, and user progress tracking.

#### User Experience:

Discussion of findings about user experience will evaluate the extent to which this application meets user needs and expectations. Testing the user interface and user interaction with the application will be the focus of this discussion. Feedback from users during the trial phase can also be used as a reference in assessing the overall user experience.

#### Application Security:

Findings about app security will evaluate the extent to which these apps protect user data and keep sensitive information, such as passwords, private. Technical security, such as the use of encryption to protect data, as well as the implementation of security protocols will be a concern in this discussion.

**Application Performance:**

Evaluation of application performance will assess the extent to which the application is able to handle high user loads, provide fast responses, and have low load times. This discussion will cover the results of application performance testing under different conditions.

**Compatibility with Research Objectives:**

In discussing the findings, it will be evaluated to what extent the application achieves the objectives set in the research, namely providing an effective website-based online job training application. Design quality, functionality, security, and user experience will be indicators of suitability for research purposes.

**Implications and Suggestions:**

The discussion of the findings will also include the implications of the results of this research for the world of online job training applications and the use of the UML method in the development of other applications. In addition, suggestions for further development of the application, potential integration with other technologies, and improvements in certain aspects will be provided.

**4. CONCLUSION**

Sampling by purposive data collection techniques using questionnaires and tests. Job training applications built by utilizing Massive Open Online Course (MOOC) technology so that complexity problems are handled by sophisticated computer simulation technology with massive open online course techniques, fast-adapting computer engineering education models. Implement job training applications in online information exchange to support and improve skills and 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. Job training applications that can be used to collect data on skills possessed by the community as well as to know the concept of increasing skills with digital community resource management that can be carried out and provide analysis of the application of information communication online.

**ACKNOWLEDGEMENTS**

Thank you very much for the opportunity given to design a Website-Based Online Job Training Application Using the Unified Modeling Language. This project has provided valuable experience for us in applying the UML method in developing more structured and efficient applications. We are very grateful for the support and cooperation of all the teams involved in the process of designing and developing this application. Without the cooperation and contribution of each individual, this extraordinary result would not have been achieved. We also want to thank the users who provided valuable feedback in the piloting and testing process of the app. Your feedback and suggestions have helped us to improve the quality and performance of the application so that it can better meet the needs of online job training. Thanks also to related parties, supervisors, and institutions that have provided support, guidance, and facilities in completing this project. Hopefully this Online Job Training Application can provide great and useful benefits for all users, help in improving the quality of human resources and make a positive contribution to the world of education and job training. Thanks again for this opportunity. Hopefully this good collaboration can continue in future projects that are more interesting and useful.

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