



Faculty of Computer Science and Information Technology

***WEB APPLICATION FOR STUDENTS TO LEARN BAHASA MELAYU SARAWAK
(JUH! KELAKA MELAYU SARAWAK)***

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Bachelor of Computer Science with Honours (Network Computing)

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(*Juh! Kelaka Melayu Sarawak*)

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(JUH! KELAKA MELAYU SARAWAK)**

SHARIFAH ANIRA BINTI WAN WAHAB

This project is submitted in partial fulfillment of the requirements for the degree of Bachelor
of Computer Science and Information Technology

Faculty of Computer Science and Information Technology

UNIVERSITI MALAYSIA SARAWAK

2023

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(JUH! KELAKA MELAYU SARAWAK)**

SHARIFAH ANIRA BINTI WAN WAHAB

Projek ini merupakan salah satu keperluan untuk Ijazah Sarjana Muda Sains Komputer dan
Teknologi Maklumat

Fakulti Sains Komputer dan Teknologi Maklumat

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Abstract

Communication in university is one of the important aspects for students to build networking, relationship with other students and eventually developing professional skills. The communication is only effective when the receiver understands the message from sender. However, most of the students from West Malaysia and Sabah are facing difficulties communicating with Sarawakian students in Bahasa Melayu Sarawak due to language being different from their native language, limited opportunities to practice and receive feedback. Therefore, a web application called Juh! Kelaka Melayu Sarawak is proposed to help students to learn and speak Bahasa Melayu Sarawak by offering translations, audio pronunciations, quiz and platform to seek and receive feedback from tutor. With all the features provided, the proposed systems will help students to communicate effectively with Sarawakian students using Bahasa Melayu Sarawak. The Waterfall Model is chosen as the methodology for the development of the web application due to its easy management, ability to track progress and ensure successful delivery of the end product to end users. With 100 percent of respondents rating the system as easy to use and consistent user interface design, it can be concluded that the web application's functionality satisfied user's need and achieved the outlined objectives.

Abstrak

Komunikasi di universiti adalah salah satu aspek yang penting untuk pelajar dalam membina rangkaian, hubungan dengan pelajar lain dan seterusnya membangun kemahiran profesional. Komunikasi hanya efektif jika penerima memahami mesej daripada penghantar. Walau bagaimanapun, kebanyakan pelajar dari Semenanjung Malaysia dan Sabah menghadapi kesukaran untuk berkomunikasi dengan pelajar Sarawakian dalam Bahasa Melayu Sarawak disebabkan oleh bahasa tersebut berbeza dengan bahasa ibunda mereka, peluang yang sedikit untuk berlatih dan menerima pendapat. Oleh itu, aplikasi web dipanggil sebagai Juh! Kelaka Melayu Sarawak dicadangkan untuk membantu pelajar belajar dan bercakap dalam Bahasa Melayu Sarawak dengan menawarkan terjemahan, audio sebutan, quiz dan platform untuk meminta dan menerima pendapat daripada tutor. Dengan semua ciri yang disediakan, sistem yang dicadangkan akan membantu pelajar berkomunikasi dengan pelajar Sarawakian secara efektif dalam Bahasa Melayu Sarawak. Model Waterfall dipilih sebagai metodologi untuk pembangunan aplikasi web kerana pengurusan yang mudah, keupayaan untuk mengesan kemajuan, dan memastikan penghantaran produk akhir yang berjaya kepada pengguna. Dengan 100 peratus responden memberikan penilaian system sebagai mudah digunakan dan reka bentuk antara muka pengguna yang konsisten, dapat disimpulkan bahawa fungsi aplikasi web memuaskan keperluan pengguna dan mencapai objektif yang ditetapkan.

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Chapter 1: Introduction

1.1 Introduction

Universiti Malaysia Sarawak (UNIMAS) become one of the university choices for students especially from West Malaysia and Sabah to pursue their study. Gain networking opportunities where students can meet and connect with other students is one of the reasons they decide to study outside of their state and eventually develop their vital professional skills (8 Reasons Why You Should Earn Your Bachelor's Degree, 2022). However, most of the students from West Malaysia and Sabah are facing problems to communicate with Sarawakian students in *Bahasa Melayu Sarawak*. This is because of the lack of learning material provided through online learning platform especially in web application. Hence, *Juh! Kelaka Melayu Sarawak*, a web application for students to learn *Bahasa Melayu Sarawak* is proposed as a solution to the problem.

Juh! Kelaka Melayu Sarawak is a language learning web application that provide a translation of *Bahasa Melayu Sarawak* into Malay and English language. Each word and sentence of *Bahasa Melayu Sarawak* include with audio to help with pronunciation and place in different categories for ease of access. Besides, this web application contain quiz to evaluate and test student's understanding regarding the learning material. Apart from that, a chat platform is included in this web application for students to seek feedback on their language performance from tutor easily. Hence, students can exchange question, receive feedback and constructive criticism from tutor to improve their language.

Waterfall Model is chosen as methodology for development of this project. The process of sectioning the project into phases using the Waterfall Model allow more achievable end product and contribute to easier project completion within timeline (Waterfall Model: What Is It, When and How to Use It?, 2022). The phases involved in Waterfall Model life-cycle are

requirement analysis, system design, implementation, testing, deployment and maintenance. Each phase contain method used to ensure the project can be done within the duration given.

1.2 Problem Statement

Students in UNIMAS especially from West Malaysia and Sabah are facing problems to learn and speak *Bahasa Melayu Sarawak*. The learning language problem is occurred due to the language being different from their mother tongue language or native language (What Are The Difficulties Of Learning A Second Language And How To Overcome Them?, 2020). Other than that, some students are learning a foreign language for the first time. Although student can seek feedback on their language performance from tutor, tutor might not be able to spend time with every student. As a result, it is difficult for students especially beginners to seek feedback on their language performance from tutor time to time.

Besides, some students are fear and feel awkward to start a conversation with Sarawakian students using *Bahasa Melayu Sarawak*. The reason of the problem is students only have limited vocabulary with the language. Other than that, they scared to be appeared as unskilled with the language when speaking with native speaker (Lampariello, 2022). Hence, students find themselves in the lack of opportunities to practice the language in order to broaden their vocabulary.

Currently, there is a lack of supporting tool for students to learn *Bahasa Melayu Sarawak* in web application. Most of the material to learn *Bahasa Melayu Sarawak* are provided through books. Students encounter problems to pronounce the words since the books only provide translation of *Bahasa Melayu Sarawak*. In addition, students' motivation to learn the language become lower due to the difficulty to understand the book's content.

1.3 Scope

The scope of the project to ensure the objectives achieved are listed as below:

- i. This project is focusing on UNIMAS students from West Malaysia and Sabah.
- ii. This project provides translation of words and sentences of *Bahasa Melayu Sarawak* into Malay and English language only.
- iii. This project divides the words and sentences of *Bahasa Melayu Sarawak* into different categories and include with audio.
- iv. This project include quiz in order for students to evaluate and test their understanding.
- v. This project will have a chat platform that allow real-time communication between student and tutor.
- vi. This project is limited to web-based users only.

1.4 Objectives

The objectives that need to be achieve at the end of the project are:

- i. To develop a simple web application for UNIMAS students to learn *Bahasa Melayu Sarawak*.
- ii. To provide a material for student to learn *Bahasa Melayu Sarawak* such as vocabulary, audio and quiz through web application.
- iii. To provide a chat platform for student to interact with tutor easily.

1.5 Brief Methodology

The methodology chosen for development of this project is waterfall model as it allows deliverable to meet the specified requirement and easier to complete in time by breaking project into sections (Waterfall Model: What Is It, When and How to Use It?, 2022). According to Sharma (2021), the Waterfall Model is easy to manage because each phase of the project has well-defined deliverables and a review process that allow developer to track progress and ensure the project stays on schedule. Figure 1.1 shows Waterfall Model process which are requirement analysis, system design, implementation, testing, deployment and maintenance.

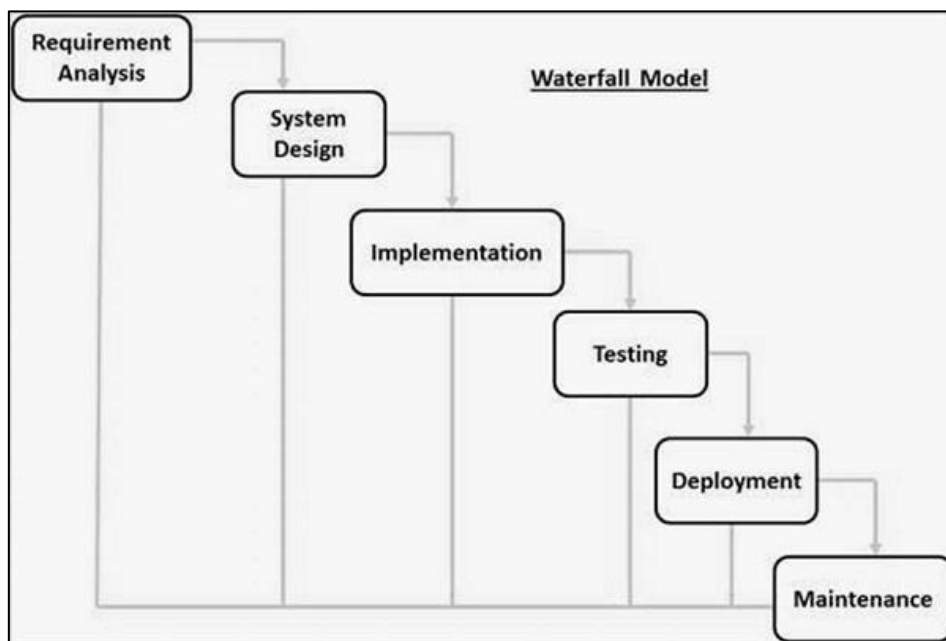


Figure 1.1: Waterfall Model life-cycle

i. Requirement Analysis

In this phase, requirement analysis is about understanding the requirement. The method uses to collect the user requirement is through questionnaire answered by the target users. The survey result collected from questionnaire is present into visualizations in the form of graphs or charts for further analysis.

ii. System Design

The design of the system is created after the requirement done for analyzed. There are two types of system design which are logical design and physical design. Logical design is represent using diagrams such as Data Flow Diagram (DFD) and Entity Relationship Diagram (ERD). Meanwhile, physical design is represent using the design of the system user interface.

iii. Implementation

Implementation of web application is developed based on the design of the system. The system design is used as a guide to build web application' functionalities, user interfaces, and other components.

iv. Testing

The testing of the web application will go through functional testing and non-functional testing. Functional testing is conducted at developer side to ensure the functionality of the web application work according to the requirement without error. Meanwhile, non-functional testing is conducted at user side to improve the quality of the web application according to user experiences.

v. Deployment

This phase is a deployment of the web application in actual environment after its all functionality validated through testing phase. Training will be conducted to the end users to help them to recognize and understand the functionality usage contain in the web application.

vi. Maintenance

Maintenance requires after web application has been deployed and used by end users. Making modification to improve performance involved in this phase and arise due to change request by end users or defect uncovered during live use of the web application.

1.6 Significance of Project

The significances of this project are listed as below:

- i. As an initiative medium for online learning language especially *Bahasa Melayu Sarawak* to cover the lack of learning materials.
- ii. Communication can be made between non-native speaker and native speaker.
- iii. Students outside Sarawak can know Sarawak culture and eventually respect other's ethnicity.

1.7 Project Schedule

Figure 1.2 shows the FYP project schedule in Gantt Chart. The estimated duration to complete the FYP is 301 days, start from 3/10/2022 until 30/07/2023.

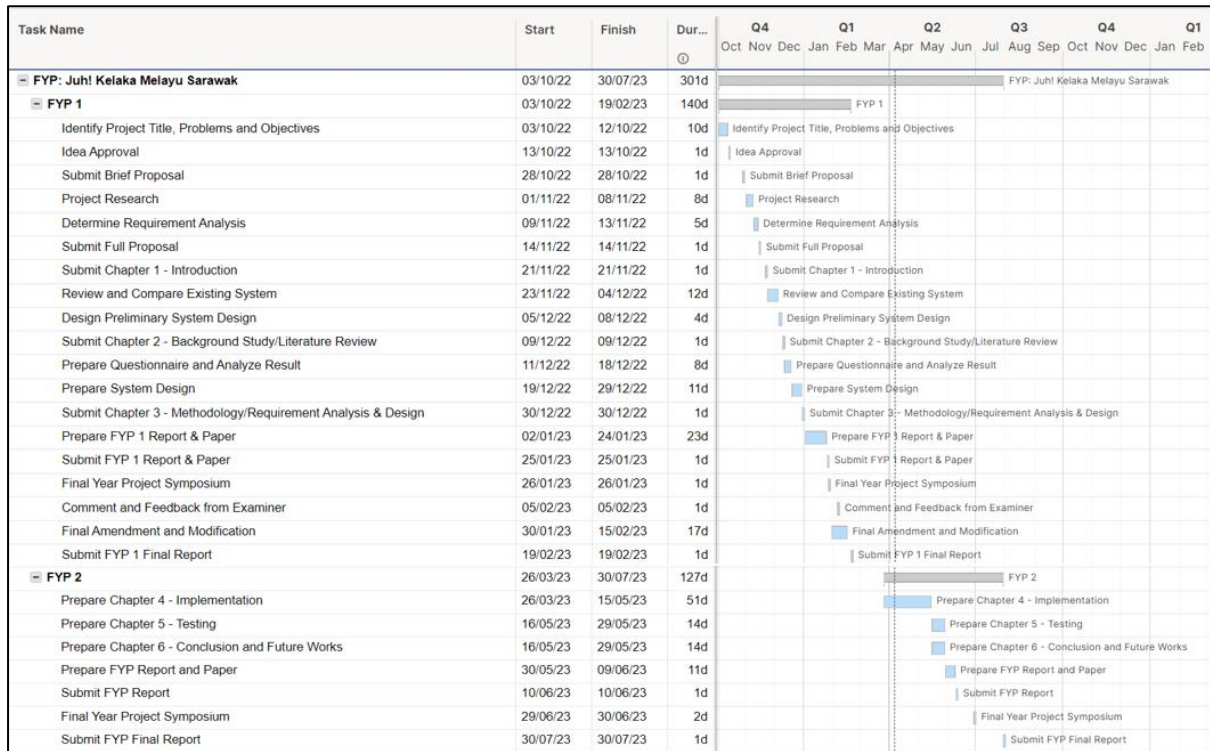


Figure 1.2: Project schedule for FYP 1 and FYP 2 in Gantt Chart

1.8 Expected Outcome

The outcome of this project is a web application of *Juh! Kelaka Melayu Sarawak*, a language learning platform which can help students to learn *Bahasa Melayu Sarawak* with translated words and sentences in different categories. With this web application, students can memorize the words and sentences by listening to audio and answering the quiz. Moreover, this web application provides a platform for students to communicate with tutor in real time to seek and receive feedback of their language performance.

1.9 Project report Outline

1.9.1 Chapter 1: Introduction

This chapter provide overview of the project which include introduction, problem statement, scope, objectives, brief methodology, significance of project, project schedule and expected outcome.

1.9.2 Chapter 2: Literature Review

This chapter discuss on comparison between existing system and the proposed system. Comparison is done based on the identification of the strength and limitation of the existing systems. The software and programming language to implement the project is chosen after review and comparison had been made.

1.9.3 Chapter 3: Requirement Analysis and Design

This chapter explain the methodology chosen which is Waterfall model to conduct the development of the proposed system. This chapter also cover the method used to collect user requirement, detail analysis of the collected data and present the design of the proposed system. The design of the proposed system will include Data Flow Diagram (DFD) and Entity Relationship Diagram (ERD) for logical design and user interface for physical design.

1.9.4 Chapter 4: Implementation and Testing

This chapter describe the implementation which is the structure and behavior of the prototype in detail. This chapter also explain about the testing conducted in the prototype. Error detected during testing are compiled and evaluated to improve the prototype.