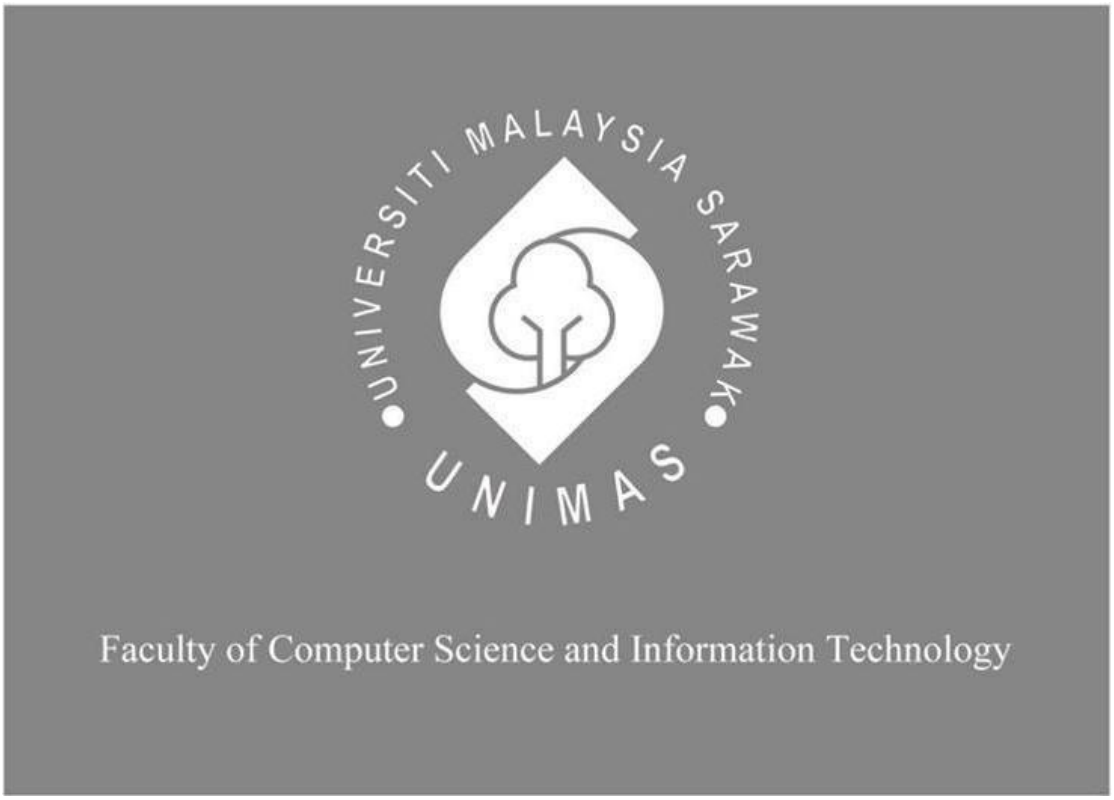

WEB-BASED MALAY GRAMMAR TOOL FOR NON-MALAY PRIMARY SCHOOL STUDENTS

Wong Tze Qi

Bachelor of Computer Science with Honours (Software Engineering)

2023

UNIVERSITI MALAYSIA SARAWAK

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WEB-BASED MALAY GRAMMAR TOOL FOR NON-MALAY PRIMARY SCHOOL STUDENTS

WONG TZE QI

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 Technology

UNIVERSITI MALAYSIA SARAWAK

2023

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Abstract

The non-Malay primary school students face challenges in learning *Bahasa Malaysia*, particularly its grammar. To overcome these challenges, the main objective of this project is to create an educational web tool specifically designed to support non-Malay primary school students in their learning journey. The tool's primary focus is to address the students' struggles with grammar, with a particular emphasis on *imbuhan* in *Bahasa Malaysia*. The development process leveraged the internet and technology to create an online educational platform accessible to students regardless of time and location. Detailed grammar explanations and flashcard-based practice exercises were provided to enhance the learning experience. The learning process is designed in a simple gaming style to engage students and foster persistence. Supplementary resources in different formats are also integrated to cater to diverse learning styles. The web tool underwent evaluation through user feedback and assessments, revealing that 70% of the respondents agree that the system is easy to use overall, with an additional 30% strongly agreeing. Moreover, 60% of the respondent’s express agreement with the statement "I am satisfied with the system" overall, while the remaining 40% strongly agree with it.

Abstrak

Pelajar sekolah rendah yang bukan kaum Melayu sukar menguasai Bahasa Malaysia, terutamanya tatabahasa. Untuk mengatasi cabaran ini, objektif utama projek ini adalah untuk mencipta satu alat pendidikan dalam talian yang direka khusus bagi membantu pelajar sekolah rendah bukan kaum Melayu dalam perjalanan pembelajaran mereka. Fokus utama projek ini adalah untuk mengatasi kesukaran pelajar dalam tatabahasa, dengan penekanan khusus pada imbuhan dalam Bahasa Malaysia. Alat web ini memanfaatkan peluang dan kelebihan internet dan teknologi untuk mencipta alat web pendidikan dalam talian kepada pelajar tanpa halangan lokasi dan masa asalkan ada sambungan internet dan komputer atau telefon pintar. Alat web ini menyediakan penjelasan tatabahasa, fokus dalam imbuhan dalam Bahasa Malaysia dan juga beberapa bahasa kegunaan biasa lain di Malaysia. Selain itu, latihan dalam bentuk kad imbasan juga disediakan untuk mempertingkatkan proses pembelajaran pelajar. Tambahan pula, proses pembelajaran direka bentuk dalam dalam bentuk permainan dalam talian yang mudah untuk menarik minat pelajar mempelajari Tatabahasa Bahasa Malaysia agar mereka gigih sehingga tamat belajar. Akhir sekali, sumber tambahan dalam format yang berbeza akan disediakan untuk mengintegrasikan gaya pembelajaran yang berbeza untuk mencipta pengajaran yang sesuai bagi setiap pelajar.Keberkesanan alat web ini dinilai melalui maklum balas pengguna dan penilaian, mendedahkan bahawa 70% daripada responden bersetuju bahawa sistem ini mudah digunakan secara keseluruhan, dengan tambahan 30% sangat bersetuju. Selain itu, 60% daripada persetujuan nyata responden dengan pernyataan "Saya berpuas hati dengan sistem" secara keseluruhan, manakala 40% selebihnya sangat bersetuju dengannya.

Chapter 1: Introduction

1.0 Background

Malay language is Malaysia's National language, also known as *Bahasa Malaysia*. In order to make the Malay language a full-fledged language at the primary or higher level of study has been the aim of Malaysian education since 1983. In Malaysian schools, Malay language instruction and learning have long been practised. However, there are still things that could improve, although the Malay language is widely used. Most Malaysians use Malay as their first language, but some use it as a second language. Due to Malaysia's complicated multicultural population, there is a need to address the goal of creating proficient multilingual societies in both the mother tongue and the second language. In this regard, proficiency in multiple languages and linguistic abilities are necessary to succeed in today's Malaysian educational system.

Every student in Malaysia from primary school to secondary school must be proficient in the four skills present in the Malay language. The importance of learning Malay increases for students after the Ministry of Education Malaysia standardises the implementation of the Language Education Policy. This policy restricts the language of instruction for public exams to only *Bahasa Malaysia*, and graduates must have completed their studies in *Bahasa Malaysia* to be eligible for a certificate. Malaysian students therefore must be proficient in *Bahasa Malaysia*.

However, even though *Bahasa Malaysia* is widely used, formally or informally, there is still space for development among many non-Malay students learning the language. Especially comes to non-Malay primary school students; even if the vernacular school has implemented the policy and the use of *Bahasa Malaysia*, despite having studied *Bahasa Malaysia* since the first year, the student's performance in those courses is nevertheless unsatisfactory. As a result, the performance of vernacular school pupils in *Bahasa Malaysia* is still at an unsatisfactory level, as noted in the research by Retnam and Khalid (2021), Sivaratnam (2019), and Rahman (2018) respectively.

A few clear factors are impacting the students' language skills in *Bahasa Malaysia*. First, the students prefer to converse with peers of the same race in their mother tongue. Additionally,

the teaching method of *Bahasa Malaysia* impacts this circumstance. Moreover, teachers currently continue to teach and learn *Bahasa Malaysia* using the traditional manner, particularly with primary school students (Retnam & Khalid, 2021). As a result, learning in this manner frequently leaves pupils feeling bored and unmotivated. Consequently, this teaching method will not help students clearly remember what they have learned in class.

In addition, due to the time-consuming and demanding nature of using dictionaries, students in *Bahasa Malaysia* teaching and learning rarely do so. Therefore, understanding word meanings is frequently disregarded. These contribute to students' poor word acquisition and incorrect grammar, impairing their writing and communication abilities.

These issues and worries need to be considered since students' poor performance in learning the language also impacts the future of the Malay language.

1.1 Problem Statements

Learning and becoming proficient in *Bahasa Malaysia* grammar, especially *imbuhan,* the combination of correct prefixes and suffixes, is difficult for Malaysian students whose mother tongue is not *Bahasa Malaysia*. A study analyzing the proficiency level of non-Malay students in vernacular primary schools in the Malay language revealed that 24.4% of students achieved a highly restricted proficiency (Level 3), while 23.4% were classified as limited (Level 2). Only 2.2% of students attained a very proficient level (Level 6) in Malay, and none of the respondents reached the most proficient category (Level 8) (Nahar & Abd Rahman, 2018).

The students always found it challenging to identify the correct combinations of *imbuhan* for the words in *Bahasa Malaysia* (Othman & Shaid, 2021). Lack of mastery in this aspect of compensation will affect, especially in writing in *Bahasa Malaysia*. This is because *imbuhan* plays an essential role in conveying the meaning of a word or verse. The meaning of a word or sentence addressed to someone can be clearly understood when the *imbuhan* aspect is well understood.

This statement was further proven by the study of Winskel (2020), which showed that Malaysian students have the additional challenge of learning more than one language. Since most Malaysians are multilingual, learning to speak and read in two separate language systems can be

challenging. Thus, it shows that learning *Bahasa Malaysia* will be a challenge for people whose first language is not *Bahasa Malaysia*.

1.2 Project Scope

This project is to develop an educational web tool to help-non-Malay Primary School Students learn and understand *Bahasa Malaysia* grammar. The scope includes a collection of words' *imbuhan*, the user interface and the targeted web browser in which the targeted users are non - Malay primary school students.

1. The *imbuhan* syllabus of primary six students are referring to creating the content of the web tool with a collection of eleven common use words and two *imbuhan* rules in the dictionary database.
2. Implement the human learning styles in designing the user interface.
3. Ensuring that the web tool works on Google Chrome web browser on different screen size.

1.3 Objective

This project aims to promote learning correct *Bahasa Malaysia* grammar, *imbuhan*, through a web-based tool. To achieve the aim, the objectives are:

1. To design an educational web-based tool that is simple and easy to use.
2. To implement human learning styles in designing the user interface and the features to deliver *Bahasa Malaysia* grammar concepts.
3. To evaluate the system's performance and usability from the end user's perspective.

1.4 Methodology

Rapid Application Development (RAD)

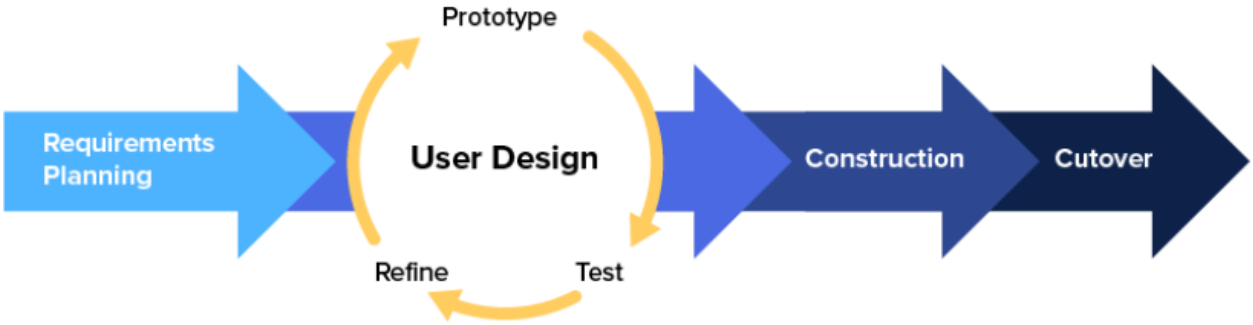

Figure 1.1 Rapid Application Development

The project will follow the Rapid Application Development (RAD) methodology (4 Phases of Rapid Application Development Methodology, 2018), which offers a streamlined approach to software development, emphasizing speed and cost-effectiveness. RAD is particularly suitable for small teams and projects requiring quick turnaround times. It allows for prioritization of features and the ability to scale back if necessary to meet project deadlines. One of the key advantages of RAD is its flexibility, enabling design modifications and functionality additions without requiring a complete restart, allowing for iterative development as needed.

The RAD methodology consists of four main phases:

Phase 1: Requirements Planning

During this phase, the project scope is determined by engaging all stakeholders in discussions. The team conducts research and surveys to gain a comprehensive understanding of the

problem to be addressed. The project requirements are then finalized through collaboration with each stakeholder.

Phase 2: User Design

In this phase, a prototype of the system is developed based on the established requirements. Users are actively involved in the prototype testing process to ensure that it aligns with their expectations. Feedback received during testing is used to refine and iterate the prototype.

Phase 3: Construction

The construction phase focuses on the actual development of the program or application based on the refined prototypes. Integration and system testing take place to ensure the seamless functioning of the final product.

Phase 4: Cutover

The cutover phase is the final stage before the product launch. Additional testing and maintenance-related tasks are performed to ensure the product is ready for release.

As this project does not involve the actual launch and release of the product to the market, the cutover phase will primarily focus on thorough testing. This testing phase ensures that all components of the software have been properly integrated, and any remaining bugs or issues are identified and resolved. Rigorous testing helps guarantee the stability and reliability of the final product, allowing for a smooth handover to the next phase or stakeholder. By emphasizing testing during the cutover phase, the project team can ensure that the software meets the desired quality standards before any potential future steps, such as deployment or market release, take place.

By following these four phases, the RAD methodology enables efficient and rapid software development, providing the opportunity for constant refinement and improvement throughout the project lifecycle.

1.5 Significant of the Project

This Web-based Malay Grammar Tool uses technology and the internet to make online learning resources available to students. Moreover, it provides a different platform for non-Malay primary school students to practice the *imbuhan*; thus, students can learn according to their needs, which is not limited to venue and time. Mastering the right *imbuhan* combination enables successful and thorough communication as well as writing by expressing ideas in logical sentences and words.

1.6 Project Schedule

This section will show the project schedule's graphical depiction in a Gantt chart in Figure 1.2 and in Table 1.1. The Gantt chart shows the planning and scheduling of projects from the start until the end.

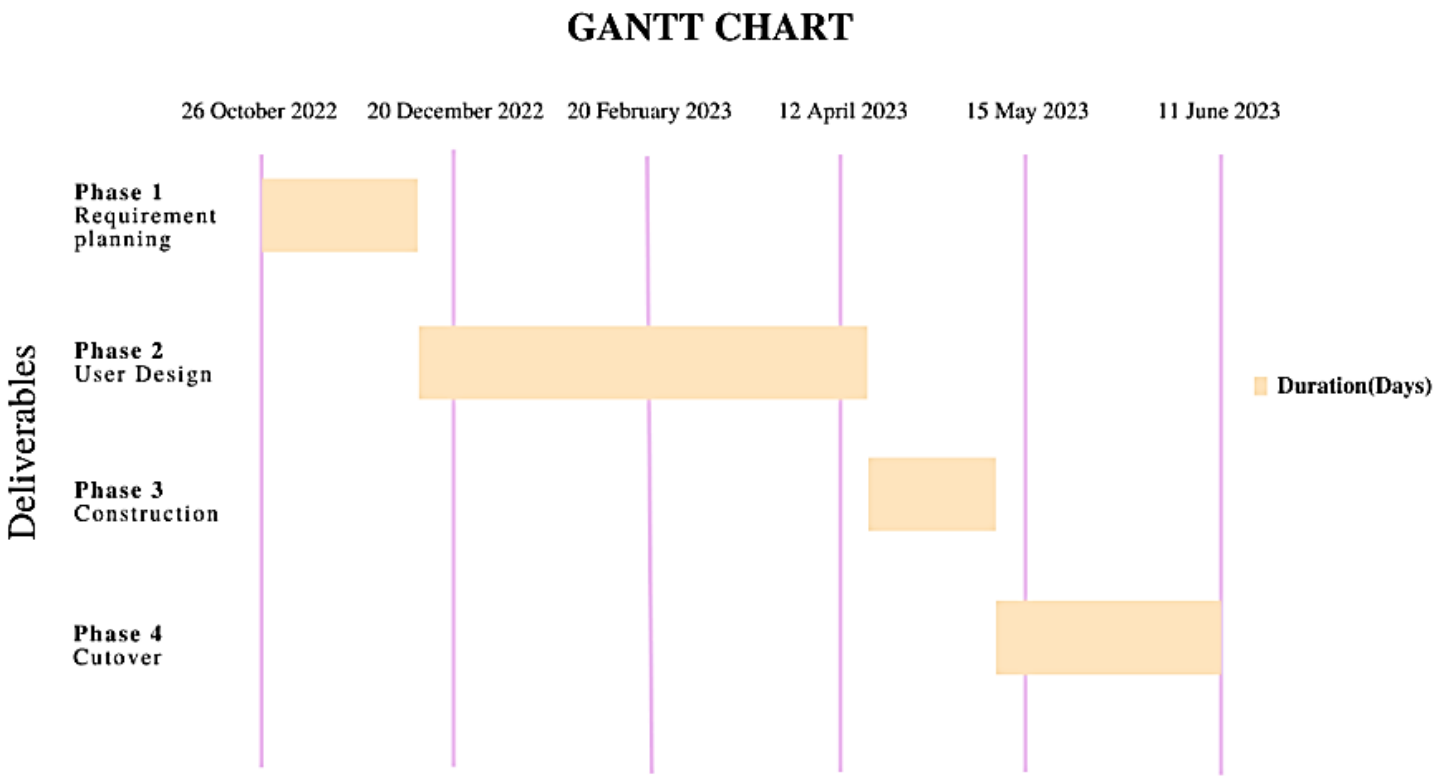

Figure 1.2 Project Schedule Gantt Chart

Table 1.1 Project Schedule Details

Deliverables	Duration(days)	Start	End
Phase1: Requirement planning	50	26 October 2022	15 December 2022
Phase 2: User Design	120	15 December 2022	14 April 2023
Phase 3: Construction	30	14 April 2023	13 May 2023
Phase 4: Cutover	30	13 May 2023	11 June 2023

1.7 Expected Outcome

A web-based tool that provides students with an interactive, relevant, and user-friendly platform to assist the student learning process and understand the grammar, *imbuhan* of the languages.