



Development of a Web-Based TOEIC Preparation Tryout System to Improve Student Readiness at Politeknik Negeri Bali

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Abstract. English proficiency has become an essential skill for students to enhance their competitiveness in the job market, especially in a global environment. The Test of English for International Communication (TOEIC) is one of the international standards used to assess English language proficiency for professional purposes. It is often a requirement for employment and international internship programs. However, challenges remain in TOEIC learning at Politeknik Negeri Bali, including the lack of interactive learning methods and limited access to representative practice materials. This study aims to develop a web-based TOEIC Preparation Try Out System to improve students' readiness for the TOEIC exam. The system is designed using the waterfall software development methodology and implemented with Laravel. Its main features include TOEIC-based practice simulations and automatic scoring to help students identify their strengths and weaknesses. Black-box testing confirms the functionality of the system, indicating that it meets the intended design requirements. The implementation of this system is expected to support self-directed learning, improve test familiarity, and help students improve their performance on the actual TOEIC.

Keywords: Information System, TOEIC, Try Out, Web-Based System

1 Introduction

In the current era of globalization, English has become the primary international language used across various sectors, including education, business, and industry. As a global language, English is widely used in business communication, hospitality, tourism, technology, and academia (Crystal, 2003). Proficiency in English is considered an added value for individuals seeking broader employment opportunities at both national and international levels. Therefore, many educational institutions have started implementing English proficiency assessments to ensure that their graduates possess adequate communication skills in global environments. English proficiency is

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especially important for individuals aiming to work in international settings (Crystal, 2020).

One of the standardized methods used to measure English proficiency in professional contexts is the Test of English for International Communication (TOEIC). Developed by the Educational Testing Service (ETS), TOEIC has become one of the most widely recognized English language tests internationally. The test is specifically designed to assess English language skills for individuals working in multinational companies, the tourism industry, and other business sectors (ETS, 2021). TOEIC evaluates two main skills—Listening Comprehension and Reading Comprehension—which reflect real-life communication situations in international workplaces (ETS, 2022). The test structure includes various sections such as Photographs, Question-Response, Conversations, Short Talks, and Reading Comprehension, aiming to evaluate participants' ability to comprehend English in everyday work-related contexts (Hirai et al., 2010). Due to its importance, many higher education institutions have adopted TOEIC as a standard assessment tool to improve the global competitiveness of their graduates.

Despite the critical role of TOEIC in assessing English proficiency, challenges remain in its implementation, particularly related to the lack of engaging and interactive learning methods. Currently, TOEIC preparation methods in many educational institutions still rely on conventional approaches, such as classroom lectures and paper-based exercises. These traditional methods are often considered less engaging and ineffective in enhancing students' English communication skills (Brown, 2016). Students frequently face difficulties in comprehending the material due to the lack of interactivity and flexibility in the learning process (Brown, 2016). Consequently, their preparation for the TOEIC test becomes suboptimal, resulting in lower test scores. At Politeknik Negeri Bali, students' readiness to take the TOEIC remains a significant issue. Preliminary observations indicate that many students struggle to understand the test patterns and strategies required. Limited access to representative practice materials and the absence of interactive learning platforms are among the main factors hindering their preparedness for the test (Sari & Wijaya, 2021).

To address these challenges and improve student readiness, a web-based TOEIC try-out system is needed to provide flexible and accessible test simulations. This system is expected to offer practice tests that closely resemble the actual TOEIC format and automatically analyze results to help students identify their strengths and weaknesses (Rohman, 2022). By familiarizing students with the test format and enhancing their test-taking strategies, the system can support more effective preparation. The development of a web-based TOEIC try-out system also aligns with the current trends in educational technology, which increasingly prioritize digitalization in learning processes (Garrison & Vaughan, 2021). This system can benefit not only students at Politeknik Negeri Bali, but also serve as a model for other educational institutions aiming to enhance English certification readiness. Therefore, this study aims to develop and implement a web-based TOEIC try-out system to effectively and efficiently improve student preparedness for the TOEIC test.

2 Methodology

This research adopts the Waterfall model from the Software Development Life Cycle (SDLC) framework to develop the TOEIC try-out system. The waterfall model is a software development model that follows a systematic and sequential process, beginning with analysis, design, implementation, testing, and continuing through to maintenance. This method is widely used in software development due to its clear structure, which allows development teams to work in an organized and structured manner (Ningsih & Erdisna, 2021; Rifai & Yuniar, 2019). The steps involved in the development are as shown in Figure 1.

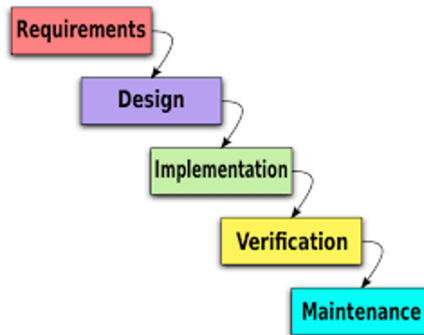


Figure 1. Research Method

Figure 1 displays the research stages referring to the waterfall method, which will be explained as follows :

1. Requirement: This stage involves discussions with the Language Unit of Politeknik Negeri Bali through interviews to identify and define the features to be developed in the system.
2. Design: Implemented using UML diagrams such as use cases and activity diagrams, along with database and user interface design.
3. Implementation: In this stage, the system development process is carried out through coding using the Laravel framework as the foundation for web application development.
4. Verification: The system was tested using black-box testing to validate functionality according to user expectations and specification requirements.
5. Maintenance: After deployment, the system is monitored for bugs or performance issues and will be iteratively improved.

3 Result and Discussion

3.1 Result

The system features are developed to reflect actual TOEIC test components, including Listening and Reading simulation and automatic scoring. Based on the analysis and discussions with the Language Unit of Politeknik Negeri Bali, the proposed concept is to develop a web-based TOEIC Preparation Try Out system using the Laravel framework. This system is designed to facilitate comprehensive TOEIC test preparation, aiming to help students easily access practice questions and perform self-assessments of their English proficiency. The system includes three types of users with distinct roles:

Table 1. Access Rights

Role	Access rights
Admin (has full access to all system features)	<ul style="list-style-type: none"> • Login to the system • Manage staff • Manage participants • Manage question banks • Manage images • Manage audio files • Manage TOEIC parts • Manage questions
Staff (has content and participant management rights, but cannot manage Admin accounts)	<ul style="list-style-type: none"> • Login to the system • Manage participants • Manage question banks • Manage images • Manage audio files • Manage TOEIC parts • Manage questions
Student (The Student is the end-user who can take TOEIC try-out tests and view the results)	<ul style="list-style-type: none"> • Login to the system • Edit personal profile • Take the TOEIC test • View test results

The relationship between user roles and access rights in the system can be modeled using a use case diagram, as shown in Figure 2. This diagram illustrates the interaction of each actor (Admin, Staff, and Student) with the available system functions according to their respective access rights.

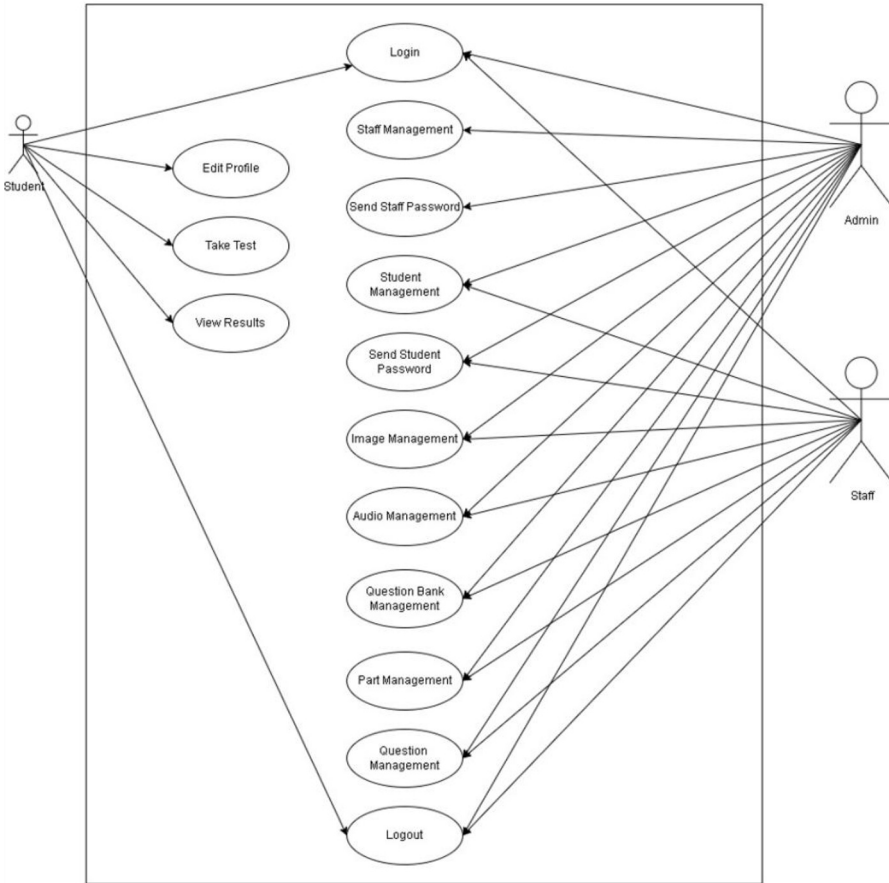


Figure 2. Use Case

The process continued to the implementation stage. This phase aimed to develop the system based on the previously created design by utilizing the Laravel framework for coding. The results of the system development are presented in the following section. Figure 3 shows the landing page of the TOEIC Preparation Try Out system. This page provides information about the definition of TOEIC, the importance of the test for academic and career advancement, and the scope of the simulation materials, which include Listening and Reading sections. Additionally, the page features a Frequently Asked Questions (FAQ) section and a user-friendly navigation menu to facilitate access to the available features.

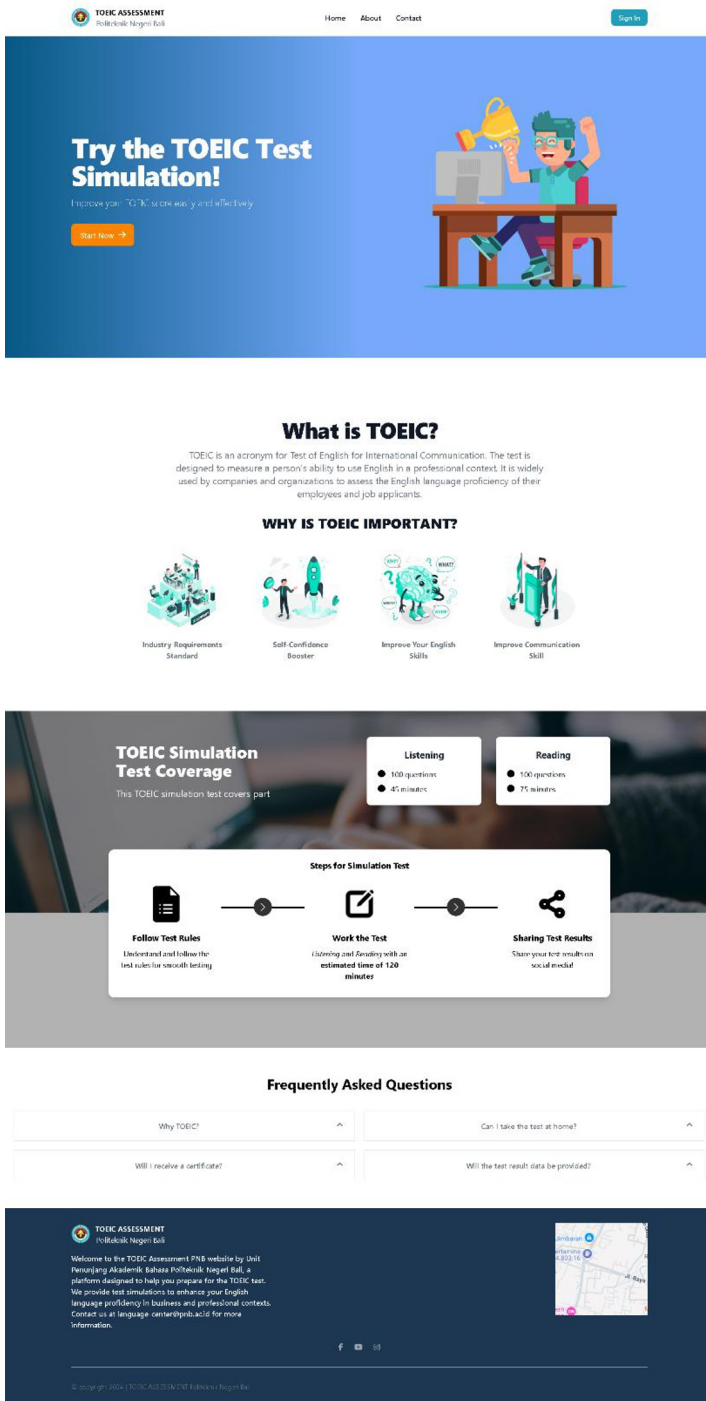


Figure 3. Landing Page

Figure 4 shows the interface of the TOEIC test simulation, covering the Listening *and* Reading sections from Part 1 to Part 4. The interface is designed to resemble the actual TOEIC test format, allowing users to practice in a realistic exam environment. Each section is equipped with clear instructions, questions, and supporting media such as pictures and audio for the Listening session.

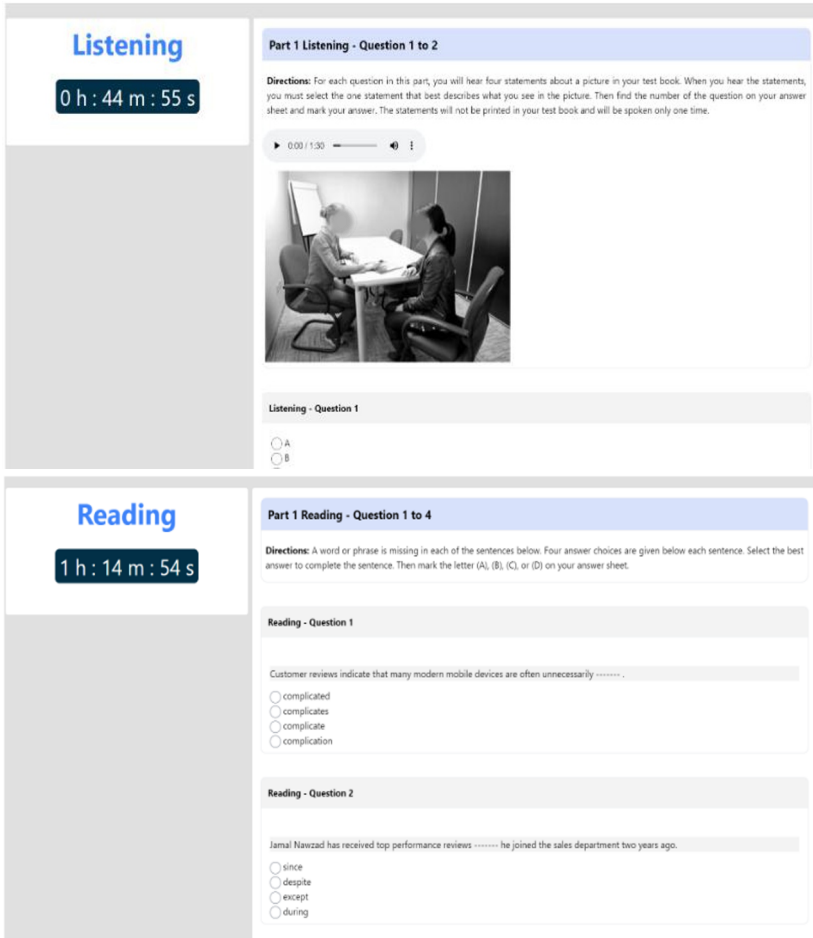


Figure 4. Listening and Reading Page

Figure 5 shows the results of the TOEIC simulation test completed by the participant. This page presents the final scores obtained in both the Listening and Reading sections, as well as the overall total score. This information helps participants assess their English proficiency level and serves as a valuable reference for improving their readiness for the actual TOEIC exam.

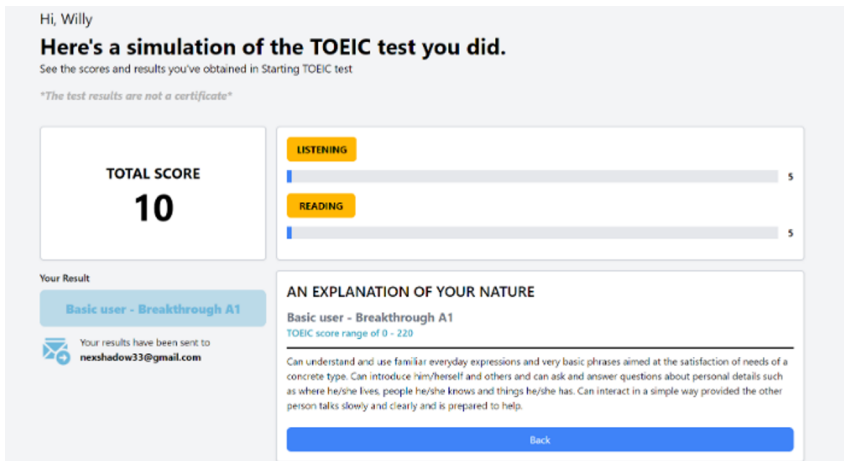


Figure 5. Result Page

3.2 Discussion

At this stage, the system is verified and tested to determine whether it fully or partially meets the specified system requirements. The testing process is conducted using the Black Box Testing method, which focuses on evaluating the functionality of the system. Testing shows that all modules operate correctly and according to the expected output. Tables 2 and 3 summarize the test results. Figure 6 shows that during the testing phase with 1,857 users, the system demonstrated stable and efficient performance. RAM usage reached approximately 5 GB. CPU usage peaked at 40%, especially during tasks like sending emails and generating PDF reports. Storage usage was recorded at 7 GB. This indicates that the system is well-optimized and capable of handling high user loads.

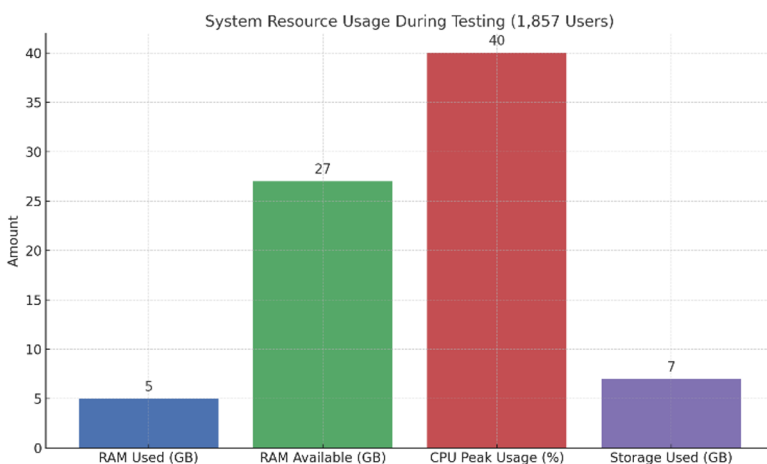


Figure 6. System Resource Usage

4 Conclusion

This research successfully developed a web-based TOEIC Preparation Tryout System to meet the needs of students at Politeknik Negeri Bali. The system was implemented using the Laravel framework and followed the Waterfall methodology, resulting in a platform that enables interactive and flexible TOEIC test preparation. Functional validation through black-box testing confirmed that all system features operated as intended. The testing results indicate that the system is capable of handling a large number of users efficiently, with resource utilization remaining within acceptable and stable limits.

Table 2. Black Box Testing Admin and Staff

No.	Page tested	Action	System reaction	Result
1	Admin Login	Enter the correct username and password	System redirects the user to the admin dashboard	success
		Enter an incorrect username or password	The system displays an error message and requests re-entry	success
2	Staff Data Management	Add, delete, or edit staff data	Staff data is successfully saved, deleted, or updated	success
3	Send Email to Staff/Participants	Send username and password to the staff/participant's email	The email containing credentials has been successfully sent	success
4	Participant Management	Perform CRUD on participant data	Participant data is successfully added or updated	success
5	Image Management	Perform CRUD on image data	Image data is successfully added or updated	success
6	Audio Management	Perform CRUD on audio data	Audio data is successfully added or updated	success
7	Question Bank Management	Perform CRUD on question bank data	Question bank data is successfully added or updated	success
8	Part Management	Perform CRUD on test part data	Test part data is successfully added or updated	success
9	Question Management	Perform CRUD on question data	Question data is successfully added or updated	success

Table 3. Black Box Testing Student

No.	Page tested	Action	System reaction	Result
1	Student Login	Enter the correct username and password	System redirects the user to the participant dashboard	success
		Enter an incorrect username or password	The system displays an error message and prompts for re-entry	success
2	Profile	Participant updates personal data (name, student ID, study program)	Participant data is successfully updated	success
3	Try Out	Participant enters the test code, takes the Listening and Reading test	Questions are displayed, answers saved, results recorded, and sent to the participant's email	success
4	Download Result	Participant selects the "Download Result" menu	The test result is successfully downloaded in the designated format	success

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