# "FOMOGame" Development: A Progressive Web App Approach to Simplify Game Top-Up Transactions

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***Abstract***

Gamers in Indonesia often face complex, non-transparent, and slow processes for game top-ups. Security concerns on untrusted platforms are also a major issue. This project aims to address these problems by developing "FOMOGame," a Progressive Web App (PWA). The main objective is to produce a functional Minimum Viable Product (MVP) that provides a fast, secure, and competitive e-commerce platform for popular game top-up services. This project uses an Agile methodology with iterative sprints and a User-Centered Design approach focused on usability. The technical architecture is built on Reactjs and Tailwind CSS. The expected outcome is an MVP capable of efficiently processing simulated transactions, which will be validated through usability testing with active gamers.

## 1. Introduction

Gamers in Indonesia often face difficulties when wanting to top up game currency, such as diamonds or coins. The main problems include complicated processes, non-transparent pricing, long verification processes, and concerns about data security when transacting on untrusted platforms.

As a solution to these problems, the development of a Progressive Web App (PWA) called "FOMOGame" is proposed. This application will function as an e-commerce platform that provides top-up services for popular games (e.g., Mobile Legends, Free Fire, Roblox). The platform is designed to offer a fast check-out process, competitive pricing, and a high guarantee of transaction security.

The main goal of this project is to produce a Minimum Viable Product {MVP} of the FOMOGame Top-Up website that is functional, responsive, and capable of processing popular game top-up transactions quickly and securely.

## 2. Research Methods

This research methodology outlines the approach taken to design, develop, and evaluate the FOMOGame PWA.

### 2.1. Development Methodology

The project adopts the Agile framework with an iterative approach. The development process is divided into several short sprints, where each sprint end will produce a functional part of the application that can be evaluated . Feedback from each iteration is used for improvement in the next cycle.

### 2.2. Design Approach (UI/UX)

The design is User-Centered Design with a primary focus on usability and readability. This project applies digital ergonomic principles to ensure a logical navigation flow and an interface that is clean and modern.

2.3. Target Population (Sampling)

The main user profile is active gamers of various ages who play popular mu/tip/ayer games (Mobile Legends, Free Fire, Roblox, etc.). These users are looking for a platform that is fast, easy, and secure to purchase their virtual currency efficiently.

2.4. Technical Architecture and Tools

The technical architecture and tools used in this project are:

- Front-end Framework: Reactjs
- Styling: Tailwind CSS
- Target Platform: Progressive Web App (PWA)
- Design & Prototyping: Figma
- Project Management: Trello

2.5. Project Team and Work Plan

The project development is managed by a specific team and schedule to ensure milestone completion.

*Table 1. Project Team and Role Distribution*

| **Nama Anggota** | **NIM** | **Peran / Pembagian Tugas Utama** |
|---|---|---|
| Muhammad Nashrullah | [241111019] | Project Manager |
| Abid Argiyanto | [241111002] | Front-end Developer (React) |
| Muhammad Mufti M.A. | [241111023] | Front-end Developer & Quality Assurance |
| Dico Havianto | [241111017] | UI/UX Designer |

Table 2. Project Plan and Timeline

| **No** | **Kegiatan / Milestone** | **Estimasi Waktu (Minggu ke-)** | **Penanggung Jawab** |
|---|---|---|---|
| 1 | Fina!isasi Ide & Penyusunan Proposal | 1 - 2 | Muehammad Nashrulloh(Project Manager) |
| 2 | Pembuatan Wireframe dan Desain UI (Tugas 1 & 2) | 3-4 | Diec Havianto (UI/UX Designer) |
| 3 | lmplementasi Antarmuka Awai (Tugas 3) | 5-6 | Abid Argiyanto (Front-end Developer) |
| 4 | Sesi Umpan Balik lnternall & lterasi Desain (Tugas 4) | 7 | Muhammad Mufti M. A. (Front-end Developer & Quality Assurance) & Diieo Haviantc (UI/UX Designer) |
| 6 | PengemtJangan Fungsionalitas MVP (Tugas 5) | 9-10 | Abid Argiyantc {Front-end Developer) & Muhammad Mufti M. A. (Front-end Developer) |
| 7 | Pengelolaan Proyek di Trello (Tugas 6) | 11 | Muehammad Nashrulloh(Project Manager) |
| 8 | Penyusunan Laporan Kemajuan Proyek (Tugas 7) | 12 - 13 | Muehammad Nashrulloh(Project Manager) |
| G | Usability Testing & Analisis Hasil (Tugas 8) | 14 - 15 | Muhammad Mufti M.A ..(Quality Assurance) & Diec Ha.viantc (UI/UX Designer) |
| 10 | Finalisasi Proyek & Laporan Akhir(UAS) | 16 | Semua Anggota |

## 3. Result and Discussion

The result of this project is the realization of a Minimum Viable Product (MVP) with a defined feature scope. The discussion focuses on the evaluation criteria for the success of the MVP.

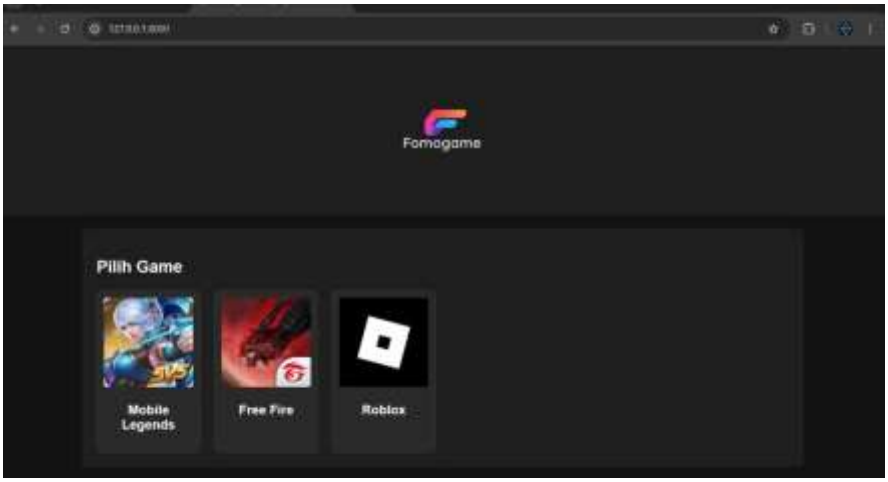


*Fig. 1. FOMOGame Homepage User Interface*

This visual representation displays the "Dynamic Homepage" feature, showcasing a list of popular games (Mobile Legends, Free Fire, Roblox) available for top-up services.

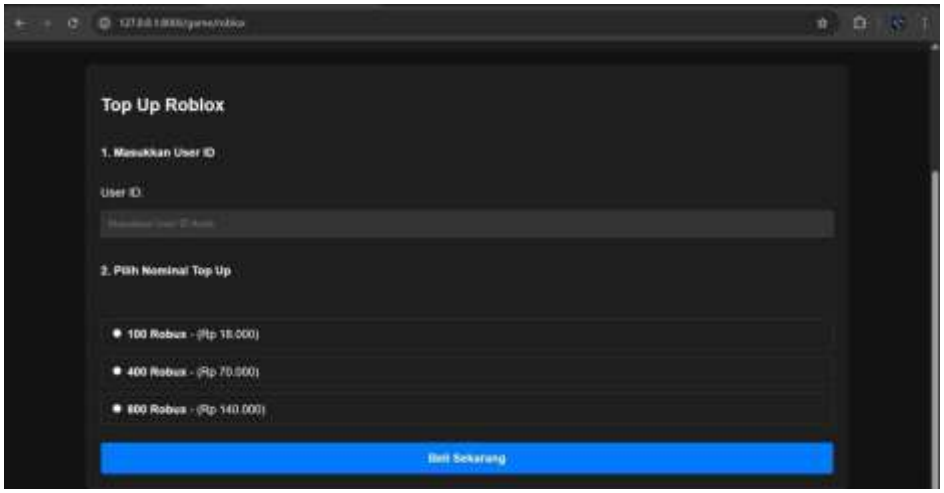


*Fig. 2. Product Detail Page User Interface (Example: Roblox Top-Up)*

This figure illustrates the interface for the product detail page, which is crucial for the top-up transaction process. It displays available denomination options, current pricing, and a dedicated input field for the user's Game ID.

Implementation and Planned Results

The functionalities developed as the main project outcome include:

Dynamic Homepage: Displays a list of popular games available for *top-up.*

Product Detail Page: Presents *top-up* nominal options, prices, and an *input field* for user ID.

Smart Search: Allows users to search for games by name.

Category-Based Filter: Allows filtering games by category (e.g., MOBA, Battle Royale).

Check-out & Payment Feature: Allows users to select a (simulated) payment method and confirm the order.

Features explicitly defined as Out-of-Scope for this MVP are a *login* system, transaction history, *push* notifications, *voucher* systems, and real *supplier* API integration. All game data and transaction statuses will be manually simulated.

Success Criteria and Discussion

The project's success will be discussed and measured using the following quantitative and qualitative criteria:

Quantitative Criteria:

All *In-Scope* features are successfully implemented and function without critical *bugs.*

The *task success rate* for users completing the *top-up* process reaches a minimum of 80% during usability testing sessions.

Qualitative Criteria:

The interface design receives an average score above 7 out of 10 on the *System Usability Scale* from post-testing surveys .

All *milestones* on the project schedule are completed according to the set time estimates.

## 4. Conclusions

This paper outlines the development process of the FOMOGame PWA, a project designed to solve common problems faced by Indonesian gamers regarding game top-up processes . By applying Agile methodology and User-Centered Design , the main project goal is to produce a functional, secure, and responsive Minimum Viable Product (MVP). The implementation of the defined features and validation through usability testing are expected to provide an efficient and trustworthy platform for gamers. Future work will focus on integrating a real payment gateway system and developing a user authentication feature (login/signup) to enhance security and personalization.

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