

# Video Game Catalogue

Aarav, Suchet, Yatharth



GIGABIT ENTERTAINMENT  
INDUSTRIES LTD

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GAMIFY

# Contents:

## Phase 0 - Overview

Project Overview

## Phase 1 - Understanding the Problem

Problem statement

Objectives

Timeline

## Phase 2 - Analysis

Feasibility Study

Technical

Operational

Financial

Schedule

Overall Recommendation

## Phase 3 - Social and Ethical Issues

EULA - End User License Agreement

## Phase 4 - Design

Major Screen Design Sketches (annotated)

Screen Design Evaluation

Diagrams

UML Class diagram

Flowchart

Data Dictionary

## Phase 5 - Development

Code Snippets

## Phase 6 - Testing

Test Cycle 1

Test Cycle 2

## Phase 7 - Evaluation



# Phase 0 - Overview

**Business name:** Gigabit Entertainment Industry LTD

**Client contact:** aartee.saki@det.nsw.edu.au

**Contact number:**

Aarav Sharma 0484 147 094

Suchet Suneel Naik 0468 456 214

Yatharth Jain 0405 706 251

**Budget:** \$0

**Software Solution:** Gamify - Your one-stop gaming catalogue



# Phase 1. Understanding the Problem

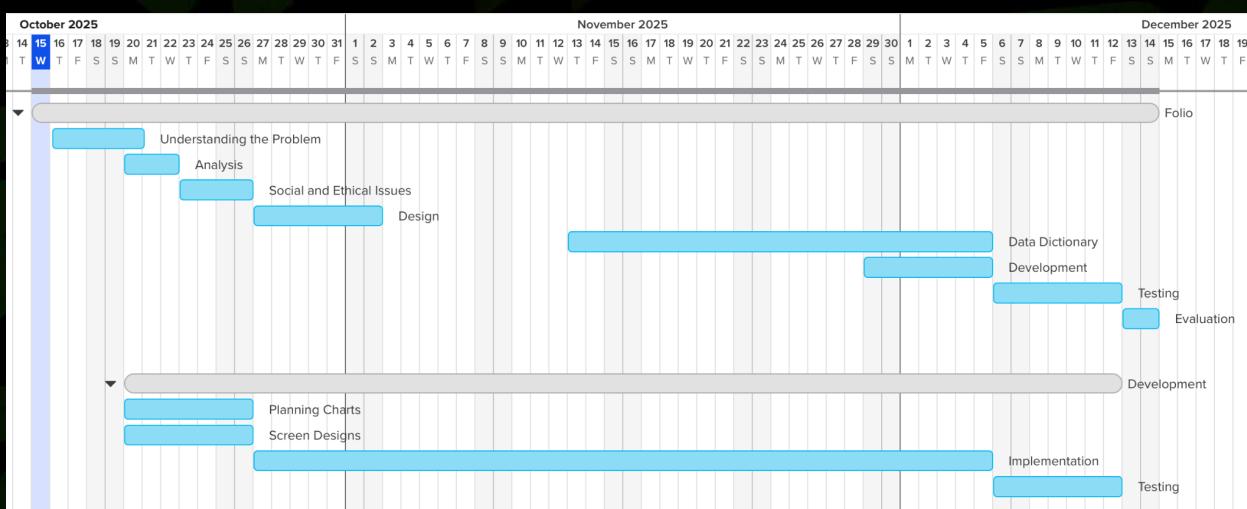
## a. Problem Statement

The problem presented to us requires us to create a game review website on behalf of our company, Gigabit Entertainment. The website must be able to allow a variety of users to join and be able to post their own reviews for a wide catalogue of games, as well as viewing information such as titles, review dates and ratings. It must be a progressive web app (PWA) with HTML, Javascript, SQLite and Python Flask.

## **b. Objectives**

Our objective is to create a game review website which is easily accessible to a variety of users and allows for users to share their opinions and perspectives on an extensive amount of games. By doing so we can strengthen the gaming community and allow users to make informed choices when making decisions about purchasing or downloading games.

### c. Timeline



Since we have a relatively tight schedule, our main goal was to give ourselves as much time as possible to code. Doing so means trying to get all of our planning and screen designs done as quickly as possible, which is why we have only given ourselves a week. This meant we did the respective parts of the folio as well as analysis alongside the planning phase. We gave ourselves

plenty of time to focus purely on coding and the relevant sections of the folio as we knew that was the bulk of the work. Not much time will be needed for evaluations. The goal was to finish on the weekend so we have time to spare in case of any issues

Upon reviewing how we went with the timeline, we started fairly strong with screen designs and the folio, meeting most of our targets early. However, the majority of the coding was pushed back due to incoming assessments for all team members, as well as a delay finalising our diagrams. This resulted in most of the coding being done within the last 2-3 weeks once our schedules cleared.



# Phase 2 Analysis

## Feasibility Study

### Technical

From a coding front, the majority of the process is extremely viable. All coding languages can be used across all devices allowing for complete collaboration between all group members, where easy access is allowed between devices through GitHub. Since the use of databases is required, there are some limitations due to the operating systems of one team member such as Microsoft Access not being available. Alternatives like SQLite can be used instead but require more time to learn. From a user perspective, the app is available as a website, and requires an internet connection but should otherwise be accessible and optimised for all devices.

### Operational

This job is quite operationally feasible as there are 3 people working on it, including minimal costs and highly experienced team members. Since not many resources are needed, this works well for the company, however the team on the task do have other commitments which may ultimately hinder the production of the page. This page will also require maintenance post production, however this will only occur on a monthly basis to ensure customer satisfaction.

### Financial

The project is financially feasible for the company. The main costs are involved with purchasing devices for coding for team members, however given the nature of their jobs they already have these devices. All software required for coding such as HTML, JavaScript, SQLite, etc. are available for free on the internet, meaning that the major costs are minimal. Other negligible costs are present such as electricity, but these are not factored in. Since effectively no money is required for this project, the project is financially feasible.

### Schedule

The project is being built on a fairly tight schedule. There are approximately 2 months to complete the project however, there are many inconveniences throughout the project. Within the first couple of weeks, 2 members will not be able

to focus entirely on the project due to a HSC task. Shortly after, the examination period begins for all group members directly consuming time that could be used for the project. While the project could hypothetically be completed sooner, due to these events 2 months is a more realistic timeline for the project.

## Overall Recommendation

This project should be feasible. Technically speaking, the project is easily buildable using our resources and will also be easy for users to use, meaning that there is also a purpose in going ahead with the project. Operationally, this project can be completed with 3 team members as long as they are all cooperative. Since the website will also be low maintenance, it will not require many resources post release either. This project is easily manageable financially as there is no cost. Despite being a tight schedule with lots of interruptions, the project should be completed within the given schedule. As a result, completing this project is extremely realistic and can be done to a high standard of quality.



# Phase 3 Social and Ethical Issues

## EULA

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### ### 9. Entire Agreement

This EULA constitutes the entire agreement between you and Licensor with respect to the Software and supersedes all prior or contemporaneous communications and proposals, whether oral or written, between you and Licensor with respect to the Software.

### ---

### ### 10. Contact Information

If you have any questions about this EULA, please contact:

suchet.suneelnaik@education.nsw.gov.au

aarav.sharma1@education.nsw.gov.au

yatharth.jain@education.nsw.gov.au

GigabitGames.com.au

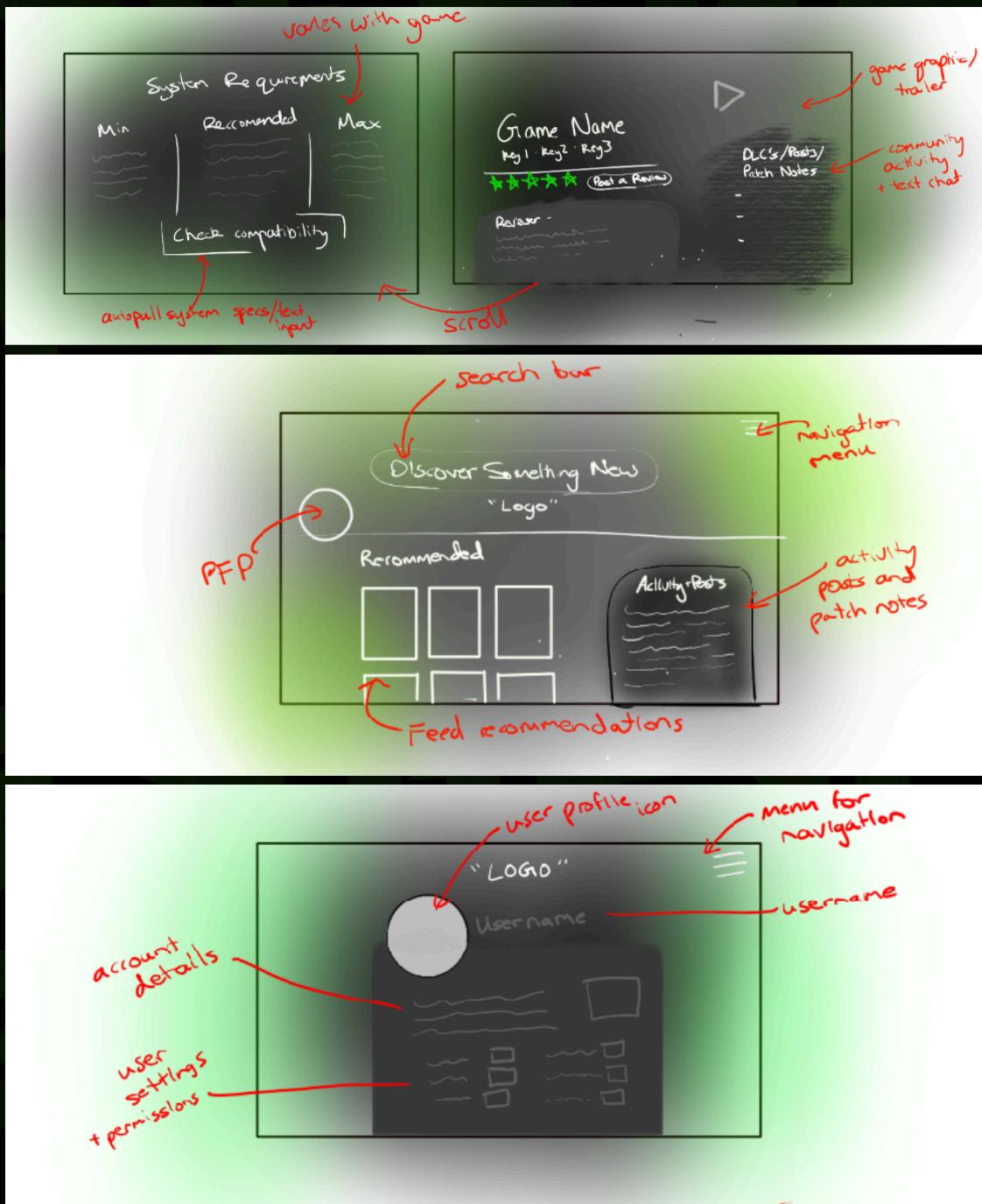
By installing or using the Software, you acknowledge that you have read, understood, and agree to be bound by the terms and conditions of this EULA.

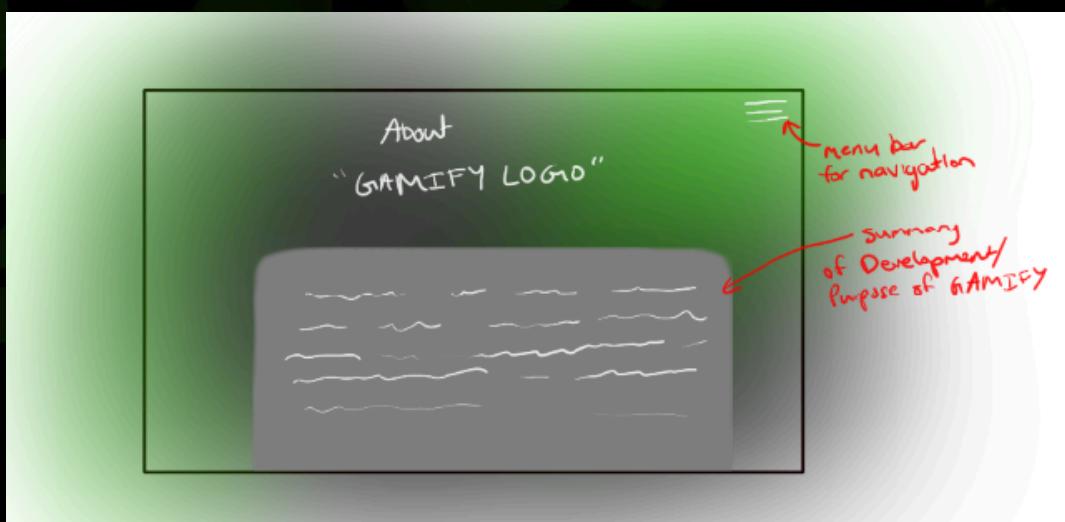
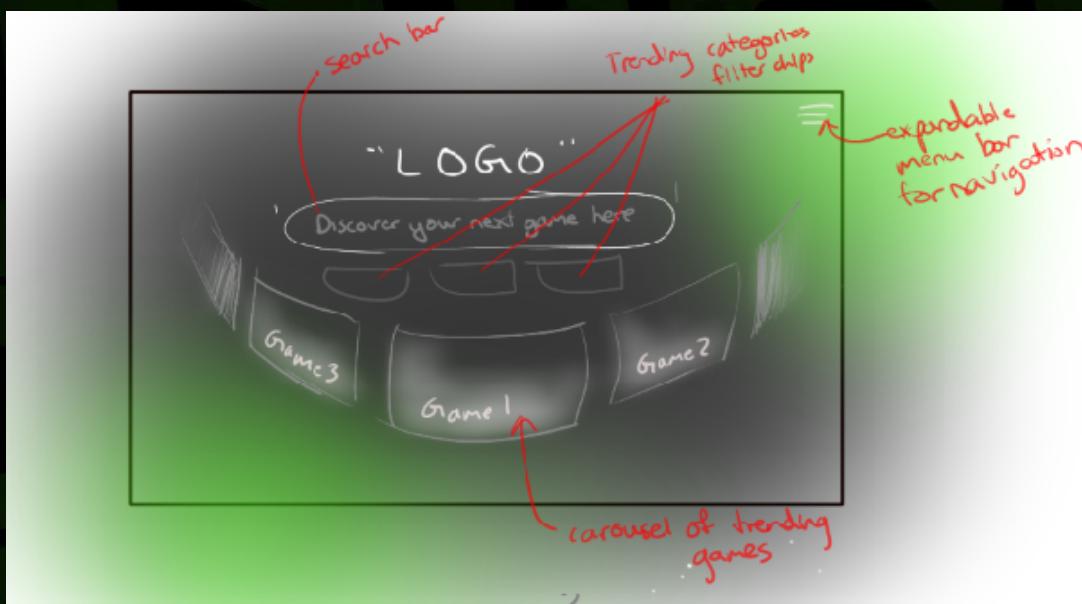
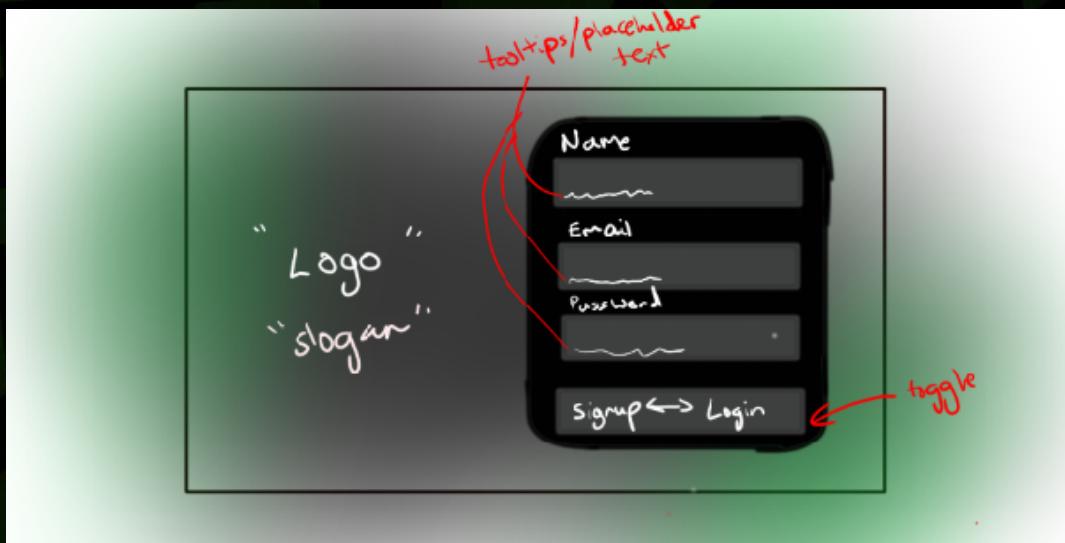
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# Phase 4 Design

## Screen Designs



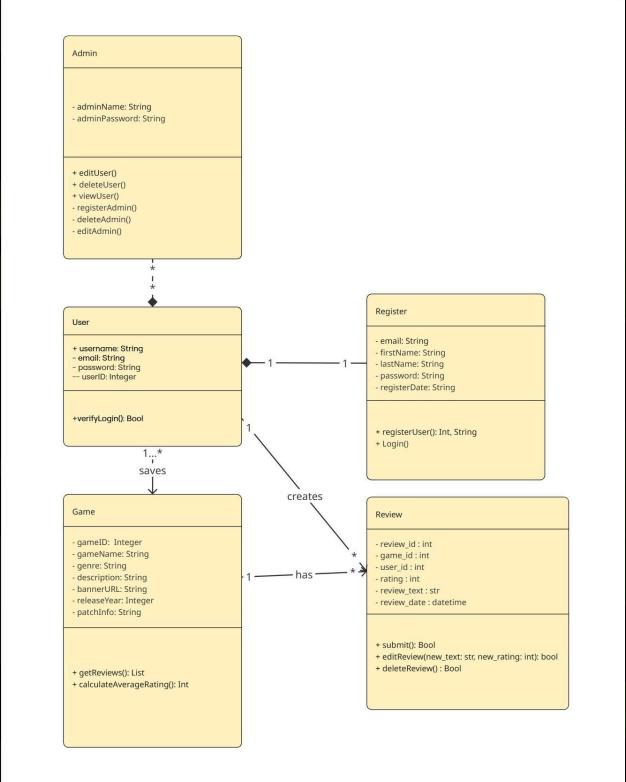


## Screen Design Evaluation

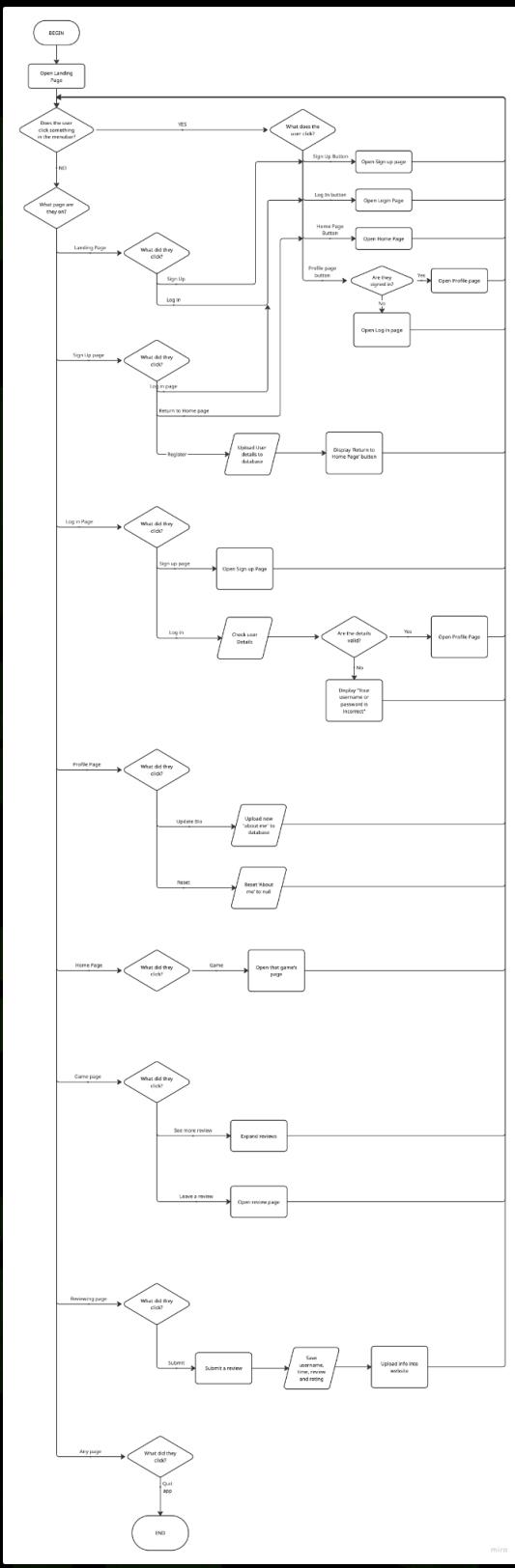
Gamify's screen designs aim to make the user experience as simple and clear as possible, with minimal user interactions on the signup and login screens. This allows us to have a high conversion rate for new customers that land on our landing page, while allowing them to experience the website's features. Additionally, our website prioritises a clean and informative UI, including relevant reviews, game details and patch notes for each game. Our game details and home page use a variety of mediums to showcase each game, including its genre, a mini trailer and what players can expect when playing each game.

## Diagrams

PDFs of individual charts will be accessible in the GitHub repository

Diagram	Justification
<p>UML Class diagram</p>  <pre> classDiagram     class Admin {         -adminName: String         -adminPassword: String     }     class User {         +username: String         -email: String         -password: String         --userId: Integer         +verifyLogin(): Boolean     }     class Game {         -gameId: Integer         -gameName: String         -genre: String         -description: String         -bannerURL: String         -releaseYear: Integer         -patchInfo: String     }     class Register {         -email: String         -firstname: String         -lastname: String         -password: String         -registerDate: String     }     class Review {         -review_id: int         -game_id: int         -user_id: int         -rating: int         -review_text: str         -review_date: datetime     }      Admin "*" -- "*" User     User "*" -- "*" Game     User "*" -- "*" Register     User "*" -- "*" Review     Game "*" -- "*" Review   </pre> <p>The UML class diagram outlines the core structure and relationships between key entities such as User, Game, and Library. The User class handles user details like userID, userName, userEmail, userBio, and userPfp, while the Game class represents individual games with attributes like gameId, gameName, and gameDesc. The Library class links users to their added games, supporting a many-to-many relationship. Admin functionality involves being able to do all that users can do but having added access to be able to delete reviews that have social violations.</p>	

## Flowchart



Since we were unsure how to make a flowchart for the entire page, we decided to make it do actions depending on what the user clicks. This resulted in essentially creating 2 sections. The first is if the user clicks on the menu bar. All buttons on the menu bar are quite simple and simply lead to different pages of the website. The other section is click on a page of the site, so we had different buttons for each page. This resulted in a long chain of different webpages where most of the buttons involved opening a new web page are uploading data to our databases. The flowchart ends when the user closes the tab or browser. Another thing to mention is some diamonds only have a single line coming out. I did this as I used the same question asking what they clicked for every page. Since some pages only have 1 button, I can not add another option, but I also can't assume they clicked it.

## Data Dictionary

Entity Name	Entity Type	Description	Scope
<b>User</b>	Entity	Represents a user in the Gamify system. Stores information about user identity, preferences, and interactions.	User-related actions like signing in, profile management, and library interactions.
<b>userID</b>	Attribute (User)	A unique identifier assigned to each user.	Used in authentication and for identifying specific users in the database.
<b>userName</b>	Attribute (User)	The user's chosen name displayed on their profile.	Visible on profile page.
<b>userEmail</b>	Attribute (User)	The email associated with the user's account.	Used for login and email-related features like notifications.
<b>userBio</b>	Attribute (User)	A short description or biography of the user.	Editable on the profile page.
<b>userPfp</b>	Attribute (User)	The URL or path to the user's profile picture.	Visible on profile page.
<b>userMembership</b>	Attribute (User)	The membership status of the user (e.g., Free, Premium).	Relevant to account management and benefits in the application.
<b>userJoinedDate</b>	Attribute (User)	The date when the user first joined the platform.	Visible on the profile page.
<b>Game</b>	Entity	Represents a game in the system, including all the metadata related to it.	Includes game details shown on the main page and detailed pages.



<b>gameID</b>	Attribute (Game)	A unique identifier for each game.	Used to link game data and actions such as adding to library.
<b>gameName</b>	Attribute (Game)	The name of the game.	Displayed on game cards and game detail pages.
<b>gameDesc</b>	Attribute (Game)	A brief description of the game.	Displayed on game detail pages.
<b>gameBanner</b>	Attribute (Game)	The banner image associated with the game.	Used in the game card display on the homepage and categories.
<b>gameGenre</b>	Attribute (Game)	The genre of the game (e.g., Action, Adventure).	Displayed on game detail page.
<b>gameDev</b>	Attribute (Game)	The name of the game developer or publisher.	Displayed on game detail page.
<b>gameRating</b>	Attribute (Game)	The average rating of the game.	Visible on game details page, based on user reviews.
<b>gameTrailer</b>	Attribute (Game)	The URL of the game trailer (if applicable).	Displayed in the game details section if available.
<b>gameSysReqs</b>	Attribute (Game)	System requirements for the game (if applicable).	Displayed in the game details section if available.
<b>gamePatchNotes</b>	Attribute (Game)	The latest patch or update notes for the game (if applicable).	Displayed in the game details section if available.
<b>GameLibrary</b>	Entity	Represents a user's library containing all the games they have saved or added to their profile.	Used to store games that users add to their personal library.



<b>libraryID</b>	Attribute (GameLibrary)	A unique identifier for the library entry.	Used for linking each game to a specific user's library.
<b>userLibrary</b>	Relationship (User, Game)	A relationship table between <b>User</b> and <b>Game</b> , showing which games have been added to which user's library.	Allows users to save games to their personal library.
<b>LibraryAddDate</b>	Attribute (GameLibrary)	The date when the game was added to the library.	Displayed in the library section for each game.
<b>PWAManifest</b>	Entity	Represents the manifest.json file that provides metadata for the Progressive Web App (PWA).	Provides the app name, icons, start URL, theme color, etc.
<b>icons</b>	Attribute (PWAManifest)	A list of icon sizes and their respective paths for use in the PWA.	Icons used for the app icon on desktop/mobile devices.
<b>start_url</b>	Attribute (PWAManifest)	The URL that the PWA should open when launched.	Configured to open the homepage or entry point for the app.
<b>display</b>	Attribute (PWAManifest)	Defines the display mode for the PWA (e.g., standalone, fullscreen).	Configured as <b>standalone</b> to make the PWA behave like a native app.
<b>background_color</b>	Attribute (PWAManifest)	The background color of the PWA splash screen.	Sets the background color of the PWA when opened.
<b>theme_color</b>	Attribute (PWAManifest)	The theme color used for the PWA's UI components.	Affects how the header of the PWA is displayed.



<b>serviceWorker</b>	Entity	Represents the Service Worker responsible for caching resources and enabling offline capabilities.	Manages caching, background sync, and push notifications.
<b>cache</b>	Attribute (Service Worker)	A storage mechanism for resources fetched by the service worker to enable offline functionality.	Stores assets like images, CSS, JS files for offline use.
<b>pushNotifications</b>	Feature	A feature allowing the PWA to send push notifications to users.	Requires user permission to receive notifications.
<b>installability</b>	Feature	Determines if the PWA can be installed by the user (based on manifest and service worker availability).	Affects the availability of the "Install" button on supported browsers.

# Phase 5 Development

## Code Snippets

Navigation bar: applied to all pages to allow users to quickly navigate the website, except for access to the landing page, which serves to convert possible users into users with accounts.



```
<header class="site-header">

    <a href="{{ url_for('home') }}><div class="brand"></div></a>

    <form class="header-search" role="search" action="{{ url_for('home') }}" method="get">

        <input type="search" name="q" value="{{ query|default('') }}" placeholder="Discover your new favourite game..." aria-label="Search games">

        <button type="submit">Search</button>

    </form>

    <button class="menu-toggle" style="margin-left: 35%;"
    onclick="menuToggle()">

    </button>

    <div class="menu">

        <h2 style="display: none; color: #fff; text-align: left; margin: 20px" class="menu-title">Menu</h2>

        <nav class="side-nav">

            <a class="nav-link" href="{{ url_for('index') }}>Landing</a>

            <a class="nav-link" href="{{ url_for('login') }}>Sign In</a>

        </nav>

    </div>

</header>
```

```

<a class="nav-link" href="{{ url_for('signup') }}>Sign Up</a>

<a class="nav-link" href="{{ url_for('profile') }}>Profile</a>

<a class="nav-link" href="{{ url_for('library') }}>Library</a>

</nav>

</div>

</header>

```

Homepage Search Functionality, allows users to search games, genres and developers. Returns search results in a scrollable format with tiles for each game. Details for each game are queried from the database to open when the user selects a game.

```

<main class="site-main">

    {%- if not query %}

        <!-- RPG, Simulation, FPS, Platformer, Sandbox, Battle Royale,
        MOBA, Roguelike, Action, Party, Puzzle, Survival, Sports, Adventure,
        Horror -->

        {%- for category, games in categories.items() %}

            <section class="category">
                <h2 class="category-title">{{ category }}</h2>

                <div class="carousel">
                    {%- for game in games %}
                        <article class="game-card" data-banner="{{ game.banner }}"
                                data-link="{{ url_for('game_detail', game_id=game.gameID) }}">
                            
                            <h3 style="display: inline-block">{{ game.gameName }}</h3>
                            <form class="libraryForm" action="{{ url_for('add_to_library', game_id=game.gameID) }}"
                                  style="display: inline;" method="POST">

```



```

                <p style="margin: 0; color: rgba(255,255,255,0.6);  

font-size:13px;">Age Rating: {{ g.ageRating }}</p>
            </div>
        </article>
    </section>
    {%- endfor %}
    {%- else %}
        <section style="max-width: 1200px; margin: 60px auto; padding:  

20px; text-align: center;">
            <h2 style="color: #e8e8e8; margin-bottom: 12px;">No search  

results found</h2>
            <p style="color: rgba(244, 244, 244, 0.7); font-size:  

16px;">No games match "{{ query }}". Try searching by title, genre, or  

developer.</p>
        </section>
    {%- endif %}
    {%- endif %}
</main>

```

Login/Signup Functionality: allows users to create an account by submitting email, username and password. When signing in, this data is verified against the database and loads the users cache if the sign in was successful. User data was not encrypted due to the scope of the project.

```

<form id="loginForm" autocomplete="on" method="post" novalidate>
    <div class="form-group">
        <label for="username">Username</label>
        <input id="username" name="username" type="text" required  

minlength="3" placeholder="yourname" />
    </div>

    <div class="form-group">
        <label for="email">Email</label>
        <input id="email" name="email" type="email" required  

placeholder="name@example.com" />
    </div>

```

```
<div class="form-group">
    <label for="password">Password</label>
    <input id="password" name="password" type="password" required
minlength="6" placeholder="••••••" />
</div>

<div class="actions">
    <button type="submit" value="login">Sign in</button>
</div>

<p class="muted">Don't have an account? <a href="{{url_for('signup')}}">Sign up</a></p>
</form>
```

Cache initialisation for offline functionality: This code enables the Web App to become progressive and function without an internet connection. The functionality is largely preserved while keeping animations and other UI elements.

```
const CACHE_NAME = `gamify-PWA-v1`;
```

# Phase 6 Testing

## Test Cycle 1 - Suchet

Issues found	Error	Fix
Manifest not being detected	The manifest file was not being detected by the browser	Ensure that the <code>link</code> tag for the manifest in the HTML is correctly specified and the manifest file path is correct
Install icon not appearing	The “install” icon did not appear correctly on the chrome DevTools installability page	Ensure that the <code>icons</code> section in the <code>manifest.json</code> is properly configured with icons of required sizes (e.g., <code>192x192</code> <code>512x512</code> ).
Service worker issues	The service worker failed to cache resources properly. The error “Request scheme ‘chrome-extension’ is unsupported” appeared	Ensure the service worker intercepts the correct HTTP requests and that it only handles requests for assets served by the server (not Chrome extensions).
No screenshots with correct form factor	The PWA was missing screenshots with the <code>form_factor</code> property set as “wide” for desktop, and no non-wide screenshot for mobile.	Add both wide-form factor screenshots for desktop and other form-factor screenshots for mobile in the <code>manifest.json</code> .



## Test Cycle 2 - Aarav

Issues found	Error	Fix
PWA was not installable	The app was not installable via the browser	Ensure that the <code>display</code> property in the manifest is set to " <code>standalone</code> ", and that the app meets the installability criteria (valid manifest, service worker, HTTPS).
Manifest warning in chrome dev tools	Warning in DevTools about missing required properties for screenshots (missing form factor for mobile or desktop).	Update the <code>manifest.json</code> with the appropriate <code>form_factor</code> for both mobile and desktop screenshots.
Service worker caching	There was an issue where some assets weren't cached, resulting in errors during offline use	Review the service worker logic to ensure proper caching of all assets, especially the core files like <code>index.html</code> , <code>manifest.json</code> , and critical JS/CSS files.
Icon missing from install prompt	The icon didn't appear in the install prompt even after the manifest was fixed	Make sure that the <code>icons</code> section in the manifest has valid image links, and that the images are correctly sized

# Phase 7 Evaluation

Peer Review - Dhanvin Bajeev

Question	Response	Rating
<b>How would you rate the visual design and theme of the PWA?</b>	The catalogue design is clean and professional, with a modern theme that makes browsing enjoyable.	<b>9/10</b>
<b>Did you find the user interface intuitive and easy to navigate?</b>	The interface is straightforward, though filtering options could be more prominent for quicker access.	<b>8/10</b>
<b>Were the instructions and onboarding clear and helpful?</b>	The onboarding steps were concise and tied well into the purpose of the app, making usage seamless.	<b>9/10</b>
<b>How useful did you find the catalogue features (search, reviews, ratings)?</b>	Very useful overall, though the search could benefit from advanced filters like system requirements or release year.	<b>8/10</b>
<b>What was your favourite feature/aspect of the PWA?</b>	The ability to post and read community reviews directly alongside game details stood out as most engaging.	<b>10/10</b>



## Peer Review – Atharva Batra

Question	Response	Rating
<b>How would you rate the visual design and theme of the PWA?</b>	It looks cool! The bright colours and game covers make it feel like a real gaming shop online.	<b>9/10</b>
<b>Did you find the user interface intuitive and easy to navigate?</b>	Pretty easy, but I got a bit confused when switching between reviews and game info pages.	<b>8/10</b>
<b>Were the instructions and onboarding clear and helpful?</b>	Yes, the instructions were simple, but I had to click around a bit to figure things out.	<b>9/10</b>
<b>How useful did you find the catalogue features (search, reviews, ratings)?</b>	Super useful! I liked seeing what other people thought about the games before deciding.	<b>8/10</b>
<b>What was your favourite feature/aspect of the PWA?</b>	The ratings and comments section, it's fun to see everyone's opinions and add my own.	<b>10/10</b>

