GAME GAUGE – A GAME REVIEW PLATFORM

A PROJECT REPORT

Submitted by

BALAMURUGAN M (220701516)

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RAJALAKSHMI ENGINEERING COLLEGE
RAJALAKSHMI NAGAR
THANDALAM
CHENNAI – 602 105

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RAJALAKSHMI ENGINEERING COLLEGE

CHENNAI - 602105

BONAFIDE CERTIFICATE

Certified that this project report **"GAME GAUGE – A GAME REVIEW PLATFORM"** is the bonafide work of **"BALAMURUGAN M (220701516)"** who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

Mr. K. Deepak Kumar
SUPERVISOR
Assistant Professor (SG)
Department of
Computer Science and Engineering
Rajalakshmi Engineering College
Rajalakshmi Nagar
Thandalam
Chennai - 602105

Submitted to Project and Viva Voce Examination for the subject CS19542 – Internet Programming held on _____.

INTERNAL EXAMINER **EXTERNAL EXAMINER**

ABSTRACT

Game Gauge is an innovative game review website designed to provide gaming enthusiasts with a centralized platform to discover, analyze, and engage with game reviews and ratings. The website, developed using HTML, CSS, and JavaScript with robust database connectivity, offers a seamless and interactive user experience. Game Gauge stands out by allowing users to browse detailed reviews across various game genres, create personalized game lists, and contribute their own insights through user reviews.

The platform integrates advanced features such as a dynamic search function, user ratings, and a recommendation system based on user preferences. The website emphasizes accessibility and responsive design, ensuring compatibility across devices and delivering an optimal experience for both casual gamers and avid gaming critics.

The project employs efficient database management to store and retrieve game data, ensuring fast and accurate content delivery. Game Gauge not only serves as a repository of critical game analysis but also fosters a vibrant community of gamers through discussion forums and comment sections. The initiative reflects a commitment to enhancing gaming culture by bridging the gap between gamers and the vast world of digital entertainment.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Game Gauge is a comprehensive game review platform designed to serve as a one-stop solution for gaming enthusiasts seeking reliable insights into the gaming world. Developed using HTML, CSS, and JavaScript with integrated database connectivity, the website provides a user-friendly interface for browsing and interacting with detailed game reviews.

The platform caters to gamers of all levels by offering a wide range of features, including personalized game lists, user-generated reviews, and dynamic search functionality. Game Gauge focuses on delivering accurate and diverse information about various game genres, helping users make informed decisions about their gaming preferences.

Designed with responsiveness and accessibility in mind, Game Gauge ensures a seamless experience across devices, making it convenient for users to explore its rich content. Beyond being a review site, it promotes a collaborative gaming community, encouraging users to share their opinions and discover new games through peer recommendations.

1.2 OBJECTIVE

The primary objective of Game Gauge is to create a comprehensive and user-friendly platform for gamers to access, share, and engage with game reviews and ratings. The project aims to provide a centralized space where users can explore detailed insights about games across various genres, empowering them to make informed gaming choices.

Game Gauge seeks to foster an interactive community by enabling users to contribute their own reviews and participate in discussions, creating a collaborative and engaging environment for gaming enthusiasts. The platform also aims to streamline the process of discovering new games through personalized recommendations and advanced search capabilities.

In addition to enhancing user experience with responsive design and intuitive navigation, the project focuses on efficient data management to ensure fast and reliable access to information. Ultimately, Game Gauge aspires to enrich the gaming culture by bridging the gap between gamers and the vast digital entertainment landscape.

CHAPTER 2

EXISTING SYSTEM

Existing game review systems typically consist of multiple platforms, such as blogs, forums, and dedicated review websites, each offering scattered information about games. While these platforms provide valuable insights, they often lack personalization and interactivity, requiring users to browse through various sources to find relevant content. Additionally, many existing systems do not prioritize user contributions, limiting community engagement. Most of these platforms are also not optimized for seamless cross-device compatibility, creating inconsistent user experiences. This fragmentation leaves a gap for a unified, user-centric solution like Game Gauge.

Disadvantages:

- **Scattered Information:** Users need to browse multiple platforms to gather comprehensive insights about games, leading to inefficiency.
- **Lack of Personalization:** Existing systems often fail to provide tailored recommendations based on user preferences.
- **Limited User Engagement:** Many platforms do not encourage user-generated content or community interaction, reducing overall engagement.
- **Inconsistent User Experience:** A lack of responsive design results in poor accessibility and functionality across different devices.
- **Slow and Inefficient Data Access:** Fragmented systems often rely on outdated database structures, leading to slower content retrieval.

CHAPTER 3

PROPOSED SYSTEM

The proposed system, Game Gauge, is a unified platform designed to address the limitations of existing game review systems by offering a centralized and user-friendly experience. It provides detailed game reviews, personalized recommendations, and advanced search features to help users find relevant content effortlessly. By enabling user-generated reviews and fostering interactive discussions, Game Gauge promotes community engagement and collaboration. The platform's responsive design ensures seamless functionality across devices, while efficient database integration ensures fast and reliable data access. Game Gauge aims to simplify the gaming discovery process and enhance user experience, making it a comprehensive solution for gamers.

Advantages:

- **Centralized Platform:** Game Gauge provides a unified space for discovering, reviewing, and discussing games, eliminating the need to browse multiple sources.
- **Personalized Recommendations:** Advanced algorithms deliver tailored game suggestions based on user preferences and activities.
- **Enhanced User Engagement:** Features like user-generated reviews and interactive discussions promote active community participation.
- **Responsive Design:** The platform ensures seamless functionality and accessibility across devices for a consistent user experience.

- **Efficient Data Management:** Optimized database integration enables fast and reliable access to game information and user data.
- **Ad-Free or Minimal Ads:** A focus on user experience reduces distractions, offering a clean and immersive browsing environment.
- **Simplified Search:** Dynamic and advanced search functionalities make finding specific games or genres quick and efficient.
- **Community Building:** Encourages collaboration and interaction among gamers, fostering a vibrant and supportive gaming community.

CHAPTER 4

SYSTEM ANALYSIS

4.1 General

Game Gauge is a web-based platform developed to provide gamers with a centralized solution for exploring game reviews, ratings, and personalized recommendations. It aims to address the limitations of existing fragmented systems by offering a user-friendly interface and fostering a vibrant gaming community. The platform allows users to browse detailed reviews, rate games, and contribute their own insights, creating a collaborative environment for gaming enthusiasts.

Designed with responsiveness in mind, Game Gauge ensures seamless accessibility across various devices, enhancing the overall user experience. It integrates efficient database management for storing and retrieving game data, ensuring fast and reliable performance. By combining advanced search capabilities, personalization features, and community engagement tools, Game Gauge simplifies the process of discovering and evaluating games.

The platform's goal is to enhance gaming culture by bridging the gap between gamers and the digital entertainment world, making it a comprehensive and engaging tool for all users.

4.2 Technology

HTML (HyperText Markup Language)

HTML is the standard markup language used to create web pages. It provides the structure of the website by defining elements such as headings,

paragraphs, images, links, and forms. HTML is essential for web development as it lays the foundation for all web content.

- **HTML Structure:** HTML documents are structured using tags that define different sections of content, like <head>, <body>, and various elements such as , <p>, <h1>, etc.
- **Semantics:** HTML5 introduces semantic elements like <article>, <section>, <footer>, and <header>, which help in creating meaningful and accessible content for users and search engines.

CSS (Cascading Style Sheets)

CSS is used for styling HTML content by defining the layout, colors, fonts, and overall design of web pages. It enhances the visual appearance of a site and ensures consistent presentation across different devices.

- **Styling:** CSS allows customization of elements through selectors, properties, and values. It supports features such as color, positioning, and transitions.
- **Responsive Design:** CSS media queries help in creating a responsive design, making the website compatible with various screen sizes, such as desktops, tablets, and smartphones.

JavaScript

JavaScript is a high-level programming language that adds interactivity to web pages. It allows developers to implement dynamic features like interactive forms, real-time updates, and animations.

- **DOM Manipulation:** JavaScript interacts with HTML and CSS through the Document Object Model (DOM), enabling the modification of HTML elements and styles on the fly.
- **Event Handling:** JavaScript responds to user actions (clicks, key presses, etc.) to trigger dynamic behavior, enhancing user experience with smooth interactions.
- **AJAX:** Asynchronous JavaScript and XML (AJAX) allows web pages to fetch data from the server without reloading, creating a more responsive and seamless user experience.

History and Development

HTML was developed by Tim Berners-Lee in 1991 as a way to structure documents for the World Wide Web. CSS was introduced in 1996 to separate content from presentation. JavaScript was developed by Brendan Eich in 1995 as a client-side scripting language, and it has since evolved into a powerful tool for web development.

Key Features of HTML, CSS, and JavaScript

- **HTML:** Provides the basic structure of a website, ensuring content is organized and displayed effectively.
- **CSS:** Enables precise control over the design and layout of web pages, enhancing visual appeal.
- **JavaScript:** Adds interactivity, making websites dynamic and engaging.

Advantages

- **Cross-platform Compatibility:** These technologies are supported across all modern web browsers and platforms.
- **Ease of Learning:** HTML, CSS, and JavaScript are relatively easy for beginners to learn and implement.
- **Flexibility:** These technologies are flexible, allowing for custom web solutions and dynamic, interactive user experiences.
- **Wide Adoption:** HTML, CSS, and JavaScript are the foundation of modern web development, with extensive community support and resources available.

Why Use HTML, CSS, and JavaScript for Game Gauge?

- **Responsive Design:** Ensures the Game Gauge platform works smoothly on any device, from desktops to smartphones.
- **User Interaction:** JavaScript enhances the interactive elements of the website, such as filtering game reviews and submitting user ratings.
- **Seamless Experience:** HTML and CSS create a well-structured and visually appealing interface, providing an optimal browsing experience for users.

4.3 Input and Output Design

4.3.1 Input Design

Input design acts as the interface between users and the Game Gauge platform, ensuring data is captured efficiently and accurately. The design includes methods for organizing and validating user inputs to ensure seamless data

processing and reduce errors. The input system is structured to be simple, user-friendly, and secure while maintaining data privacy.

The input design focuses on:

- **Data Entry:** User inputs such as search queries, game reviews, ratings, and account details.
- **Input Arrangement:** Ensuring the input fields are clearly labeled, logically arranged, and easily accessible.
- **Validation:** Incorporating mechanisms to validate inputs, such as ensuring ratings are within defined ranges or verifying email addresses during account creation.
- **Error Handling:** Providing clear error messages to guide users in correcting invalid inputs.
- **User Guidance:** Intuitive prompts and tooltips to assist users in data entry.

Objectives

- Simplify data entry to avoid errors.
- Ensure inputs are validated and processed securely.
- Provide interactive and user-friendly input screens to enhance the overall user experience.
- Offer real-time feedback for invalid inputs, ensuring data accuracy.

4.3.2 Output Design

Output design focuses on delivering processed information to users in a clear, concise, and organized manner. It determines how information is displayed, ensuring that it meets user requirements and aids decision-making.

The output design includes:

- **Information Presentation**: Results of search queries, detailed game reviews, average ratings, and personalized recommendations displayed in an intuitive layout.
- **Output Formats**: Well-structured pages showing game details, visual elements like icons and banners, and community contributions like user reviews.
- **Real-Time Updates**: Dynamic output ensuring changes (e.g., new reviews or ratings) are reflected instantly.
- **User-Friendly Design**: Prioritizing readability and accessibility through responsive design for mobile and desktop users.
- **Interactive Reports**: Allowing administrators to generate usage statistics and monitor community activity.

Objectives

- Provide users with clear and actionable information about games.
- Enhance decision-making by presenting relevant data effectively.
- Ensure outputs are visually appealing and accessible across all devices.
- Support real-time updates for dynamic and engaging user experiences.

CHAPTER 5

MODULE DESCRIPTION

5.1 List of Modules

- User Account Management
- Game Data Collection
- Review and Rating System
- Game Search and Filter Functionality
- Recommendation System
- Admin Dashboard
- GUI for Game Reviews and Recommendations

5.2 Module Description

5.2.1 User Account Management

This module serves as the backbone for user interaction with the platform, handling registration, login, and profile customization.

- **User Registration and Login:** Provides a user-friendly interface for signing up and securely logging into the system. Employs encrypted storage for user credentials to ensure privacy and security.
- **Profile Management:** Allows users to personalize their profiles by adding gaming preferences, favorite genres, and preferred gaming platforms.
- **Session Management:** Ensures secure session handling, including features like auto-logout for inactivity and token-based authentication for seamless user experiences.
- **Account Recovery:** Facilitates password recovery through OTP or email verification, ensuring users can regain access to their accounts easily.

- **Admin Access:** Includes an administrative control panel for managing user accounts, suspending or deleting malicious accounts, and addressing user queries.

5.2.2 Game Data Collection

The Game Data Collection module is responsible for building and maintaining a comprehensive database of games to support the platform's functionalities.

- **Web Scraping:** Extracts game-related information such as titles, release dates, genres, platforms, developers, and ratings from sources like Metacritic, IGN, and Steam using web scraping tools like Beautiful Soup.
- **API Integration:** Leverages third-party APIs such as IGDB to enrich the platform with detailed, real-time game data.
- **Data Validation:** Includes automated checks to verify the accuracy and completeness of collected data, removing duplicates and outliers.
- **Continuous Updates:** Ensures the database stays up-to-date by scheduling regular data updates for newly released and upcoming games.

5.2.3 Review and Rating System

This module enables users to express their opinions about games and provide ratings to guide others.

- **User Reviews:** Allows users to write detailed reviews that include aspects like storyline, graphics, gameplay, and replayability.
- **Rating Mechanism:** Implements a 5-star rating system that lets users quickly assess the overall quality of a game.

- **Moderation Tools:** Provides administrators with tools to monitor and moderate reviews to prevent spam or inappropriate content.
- **Aggregated Scores:** Combines individual ratings and reviews into an overall score for each game, offering users a quick overview of its reception.

5.2.4 Game Search and Filter Functionality

This module ensures users can easily find games that match their interests by offering advanced search and filtering options.

- **Keyword Search**: Enables users to find games based on keywords like titles, developers, or genres.
- **Filters**: Provides multiple filters, such as genre, platform, release year, and user rating, for narrowing down search results.
- **Sorting Options**: Includes sorting by popularity, release date, or average ratings to prioritize search results.
- **Dynamic Updates**: Displays results in real-time as users adjust filters or type in the search bar.

5.2.5 Recommendation System

The Recommendation System enhances user engagement by suggesting games based on user preferences and activity.

- **Personalized Recommendations**: Uses algorithms to analyze user behavior, preferences, and review history to provide tailored game suggestions.
- **Trending Games**: Highlights popular and highly-rated games based on community activity and recent releases.

- **Collaborative Filtering**: Suggests games based on similarities with other users' preferences, leveraging collective user data for accurate recommendations.
- **Cross-Platform Insights**: Recommends games based on compatibility with user-preferred gaming platforms.

5.2.6 Admin Dashboard

The Admin Dashboard is a central hub for managing the platform efficiently and ensuring smooth operations.

- **User Management**: Offers controls for monitoring, editing, and deleting user accounts, as well as addressing account-related complaints.
- **Game Data Management**: Provides tools to update, add, or remove game entries in the database.
- **Analytics and Reports**: Displays key metrics such as user activity, review submissions, and platform performance to guide administrative decisions.
- **Review Moderation**: Allows admins to review flagged content and take appropriate actions to maintain platform integrity.

5.2.7 GUI for Game Reviews and Recommendations

This module defines the visual and interactive elements of the platform to ensure a seamless user experience.

- **Game Reviews Interface:** Displays user reviews in a visually appealing layout, with options to sort and filter reviews by date, ratings, or helpfulness.
- **Recommendations Panel:** Highlights personalized game suggestions, trending games, and new releases.

- **Interactive Elements:** Incorporates features like hover effects, tooltips, and animations for an engaging user experience.
- **Responsive Design:** Ensures compatibility with various devices, including desktops, tablets, and mobile phones, to cater to a diverse user base.

5.3 Feasibility Study

The feasibility of Game Gauge was thoroughly analyzed during the initial stages to ensure it is viable from multiple perspectives. A business proposal was formulated with a high-level plan, including cost estimates and resource allocation. The goal of this study was to ensure the system could be developed and implemented without causing financial, technical, or social strain. An understanding of the major requirements for the platform was essential to carry out the feasibility analysis effectively.

The three critical areas of feasibility considered were:

- **Economic Feasibility**
- **Technical Feasibility**
- **Social Feasibility**

5.3.1 Economic Feasibility

The economic feasibility study was conducted to evaluate the financial impact of developing and maintaining the Game Gauge platform. It focused on ensuring that the project remained within budget while delivering high-quality outcomes.

- Most technologies used, such as **HTML, CSS, JavaScript, and MySQL**, are open-source and free, significantly reducing development costs.

- Hosting services and minimal software subscriptions (if required) were carefully selected to align with budget constraints.
- By leveraging open-source libraries and frameworks, the system's economic feasibility was confirmed, ensuring the project did not exceed the allocated financial resources.

5.3.2 Technical Feasibility

The technical feasibility study focused on assessing whether the available technical resources and infrastructure could support the system's requirements.

- The platform was designed to be lightweight, ensuring it operates efficiently on widely available hardware and software configurations.
- The technologies used, such as HTML, CSS, JavaScript, and MySQL, are well-supported and easily integrated, requiring no specialized hardware or high-performance servers for initial deployment.
- Development tools and environments were chosen to minimize technical complexity, making the system easy to implement and maintain.
- Scalability options were included to accommodate future growth, ensuring that the platform remains functional as user demand increases.

5.3.3 Social Feasibility

Social feasibility was analyzed to determine how well the Game Gauge platform would be accepted by its target users and stakeholders.

- The platform's user-friendly interface and intuitive design minimize the learning curve, encouraging widespread adoption by gamers, reviewers, and administrators.

- Training and support materials, such as user guides and FAQs, were planned to ensure users feel confident in navigating and utilizing the system effectively.
- The project emphasizes community engagement by offering features like reviews, ratings, and personalized recommendations, which create a sense of connection and value for users.
- Clear communication regarding data privacy and platform policies ensures that users trust and accept the system as secure and reliable.

CHAPTER 6

SYSTEM REQUIREMENTS

6.1 HARDWARE REQUIREMENTS

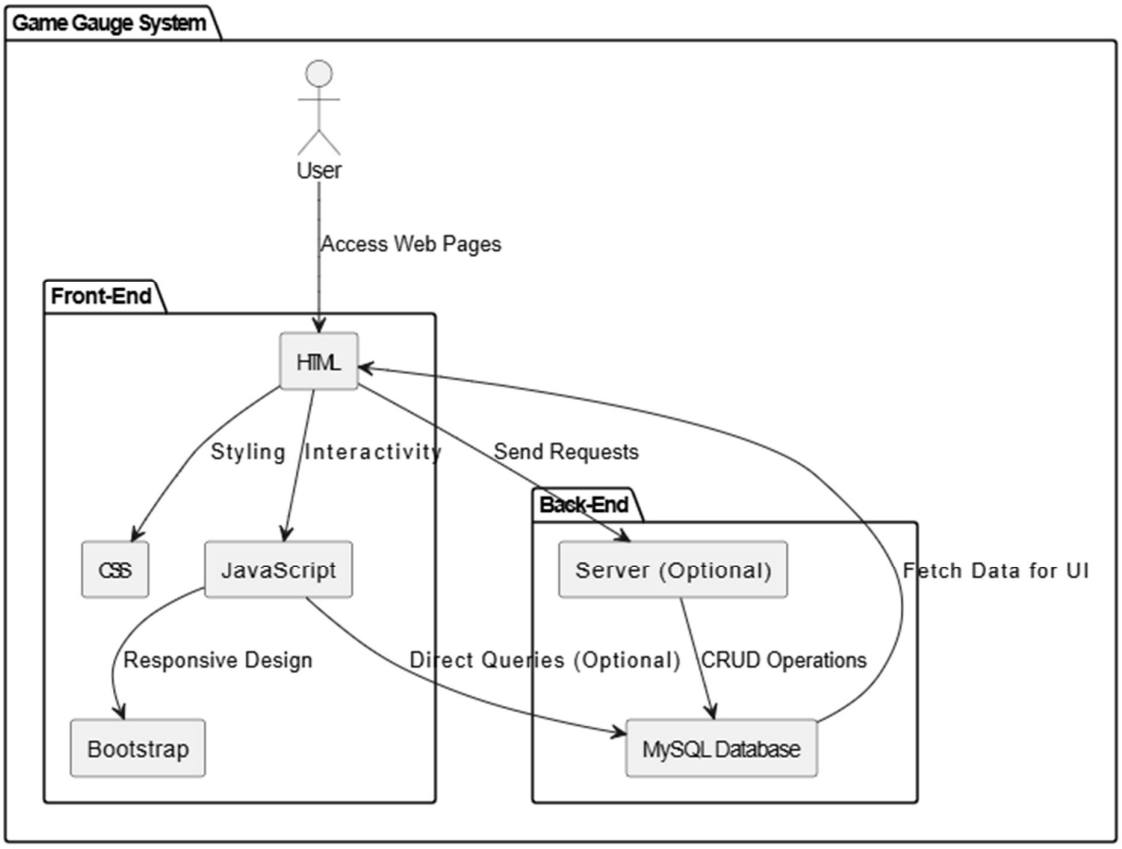
Processor	:	Intel Core i3 or equivalent
RAM	:	4GB
Storage	:	128GB HDD (or) SSD

6.2 SOFTWARE REQUIREMENTS

Operating System	:	Windows
Front End	:	HTML, CSS, JavaScript
Back End	:	MySQL, Node.js

CHAPTER 7

ARCHITECTURE DIAGRAM



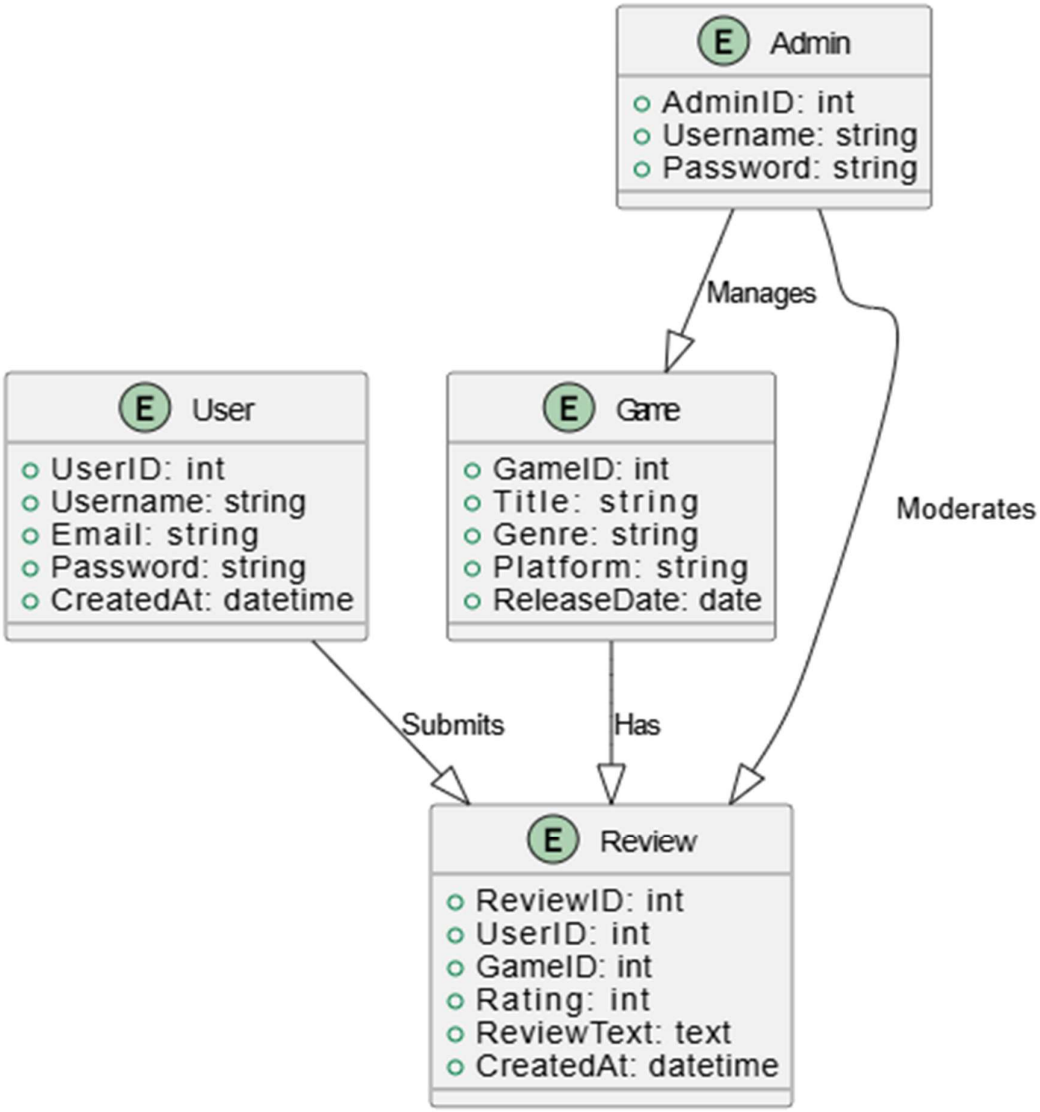
CHAPTER 8

SYSTEM DESIGN

8.1 Data Architecture Design

Data architecture is composed of models, policies, rules or standards that govern which data is collected, and how it is stored, arranged, integrated, and put to use in data systems and in organizations.

In this system, users provide attributes related to games, such as title, genre, platform, release date, and ratings, which are taken as input and stored in the platform's database. The database contains a repository of game information, including user reviews and ratings. The system allows users to explore and retrieve game information through a well-designed GUI. The GUI serves as an interactive medium where users can browse games, provide reviews and ratings, and create personalized playlists or collections. The admin module oversees the system, enabling efficient management of game data, moderation of reviews, and overall system maintenance. This architecture ensures a user-friendly experience while maintaining reliable data handling and efficient operations.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8.2 UML

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object-oriented computer software. In its current form UML is comprised of two major components: A Meta- model and a notation. In the future, some form of method or process may also be added to or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems. The UML is a very important part of developing objects-oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

Goals

The Primary goals in the design of the UML are as follows:

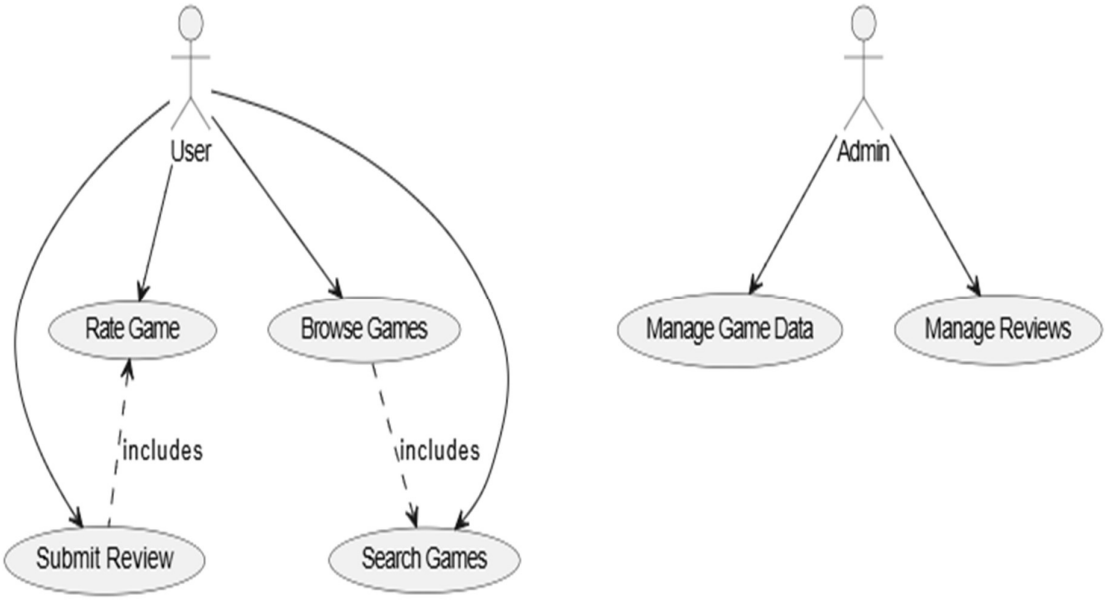
- Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
- Provide extendibility and specialization mechanisms to extend the core concepts.
- Be independent of particular programming languages and development process.

- Provide a formal basis for understanding the modeling language.
- Encourage the growth of Object-Oriented tools market.
- Support higher level development concepts such as collaborations, frameworks, patterns and components.
- Integrate best practices.

8.3 UML Diagrams

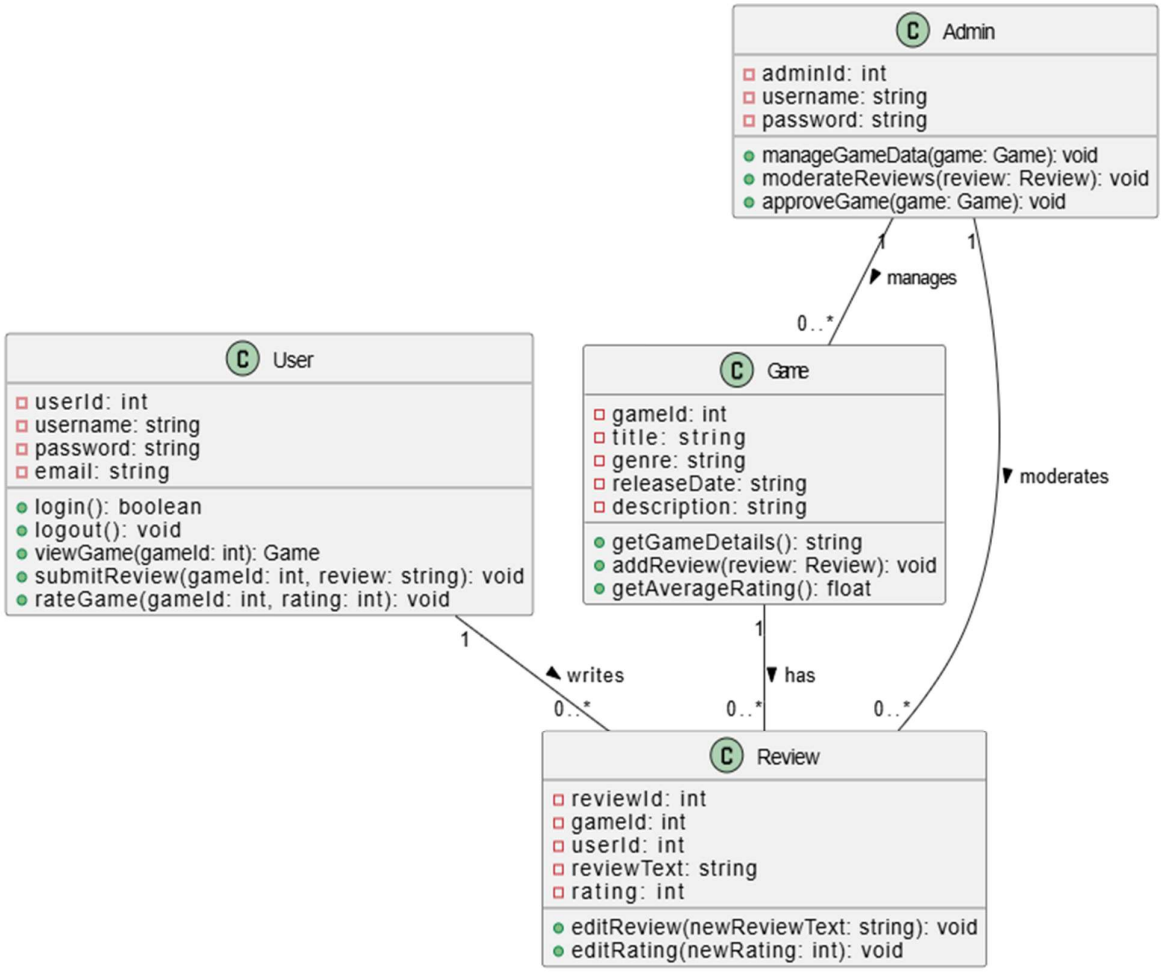
8.3.1 Use Case Diagram

A use case diagram is a graphic depiction of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements.



8.3.2 Class Diagram

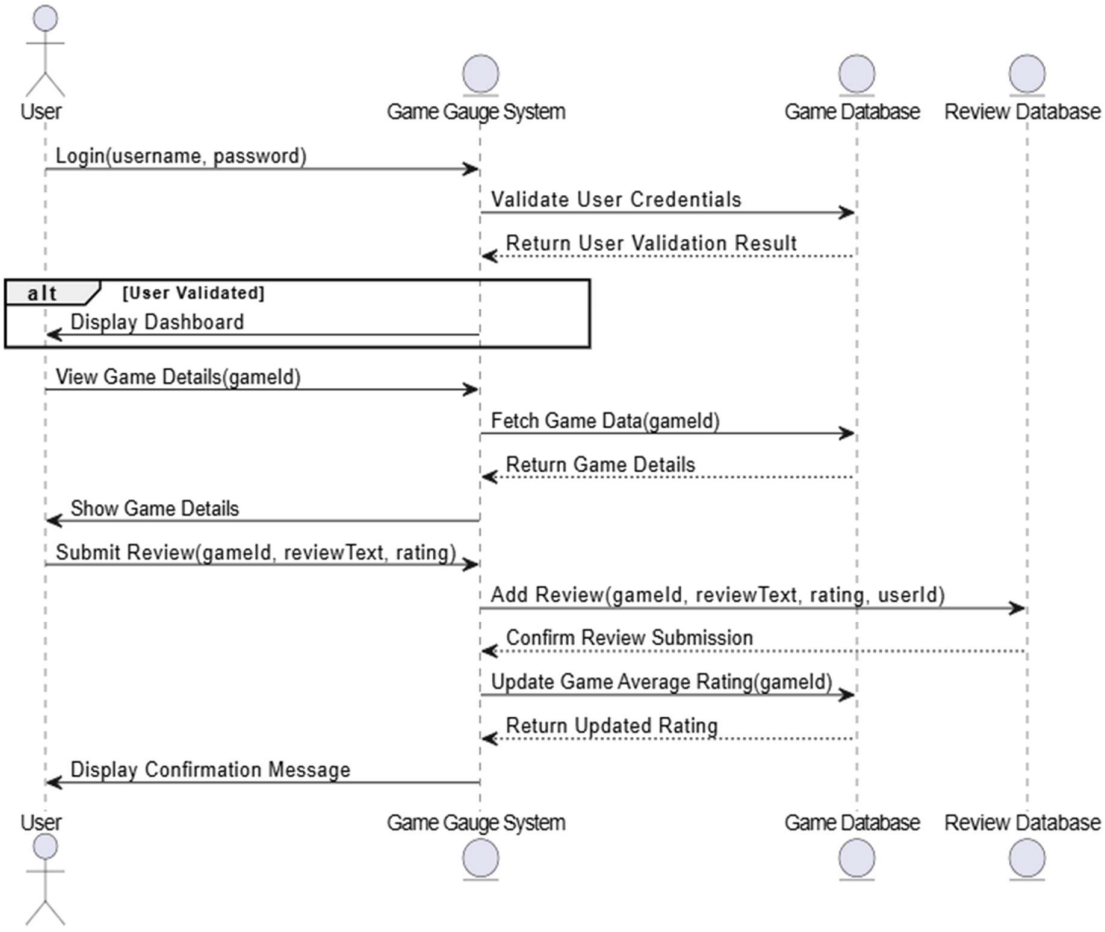
The class diagram is the main building block of object- oriented model. It is used for general conceptual model of the structure of the application, and for detailed model translating the models into programming code. Class diagrams can also be used for data modeling.



8.3.3 Sequence Diagram

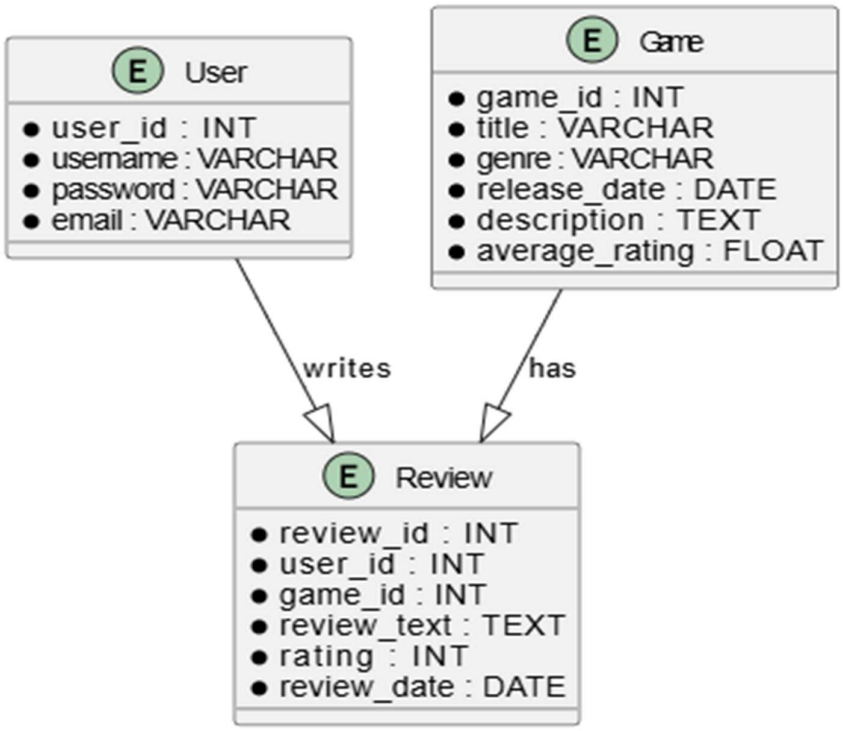
A sequence diagram, in the context of UML, represents object collaboration and is used to define event sequences between objects for a certain outcome. A sequence diagram is an essential component used in processes related to analysis, design and documentation.

A sequence diagram is also known as a timing diagram, event diagram and event scenario.



8.3.4 Entity Relationship Diagram

An Entity–relationship model (ER model) describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database.



CHAPTER 9

CONCLUSION

The Game Gauge platform provides an efficient and user-friendly environment for game enthusiasts to discover, review, and rate their favorite games. By incorporating essential features like user account management, game data collection, and an advanced review and rating system, the platform ensures an engaging and interactive experience for users. The powerful search and filter functionality further enhances the discovery process, allowing users to find games based on their preferences easily.

The recommendation system leverages user activity and ratings to suggest games that align with individual tastes, thus improving the overall user experience. The admin dashboard provides valuable insights into user behavior and game reviews, helping administrators manage and optimize platform performance. The intuitive GUI for game reviews and recommendations makes it easy for users to navigate through the platform, contributing to a seamless interaction.

This project not only addresses the need for a comprehensive game review platform but also demonstrates how such systems can be built efficiently using modern web technologies like HTML, CSS, JavaScript, and MySQL. The Game Gauge system is a scalable solution that can evolve with additional features, ensuring its relevance and utility for users in the gaming community. With its robust architecture and functionality, Game Gauge is set to become a go-to platform for game reviews and recommendations.

Future Enhancements:

1. **Enhanced Recommendation Algorithm:** The current recommendation system can be expanded by integrating more advanced algorithms such as collaborative filtering, content-based filtering, or hybrid models. This would allow for more personalized game recommendations based on user preferences, gameplay history, and even ratings of similar users.
2. **User Reviews and Ratings with Media Content:** Enabling users to add media content like screenshots, gameplay videos, or live streams along with their reviews could enhance the review system, making it more dynamic and engaging. This would provide a more detailed and comprehensive view of the games.
3. **Mobile Application Development:** The Game Gauge platform could be extended to mobile devices by developing a dedicated iOS and Android application. This would offer users more convenience and accessibility, allowing them to browse, review, and search for games on the go.
4. **Social Media Integration:** Adding social media features such as sharing reviews, ratings, and achievements on platforms like Facebook, Twitter, or Instagram could increase user engagement. Users could also follow friends, see their game ratings, and compare preferences.
5. **Multilingual Support:** To cater to a global audience, future enhancements could include multilingual support for the platform. Users could choose their preferred language for browsing, reviewing, and rating games, making the platform more accessible to diverse regions.
6. **Advanced Analytics for Game Developers:** Providing detailed insights and analytics to game developers about how their games are rated, reviewed, and perceived by users would be valuable for improving game

design and marketing strategies. This could include sentiment analysis of user reviews and performance metrics.

7. **Cloud Integration:** Integrating the platform with cloud storage for game data could help streamline updates, backups, and data synchronization across devices, ensuring a smooth experience for both administrators and users.

8. **AI-Based Game Testing:** Introducing an AI-powered testing module that simulates user interaction and detects bugs or performance issues in games could help developers before they release games to the public. This system could be used to automatically assess games based on user experience factors such as loading times, graphical performance, and overall usability.