

A Web Project Play Games to Learn

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This Report Presented in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Science in Computer Science and
Engineering

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APPROVAL

This Project titled “A Web Project Play Games to Learn”, submitted by Mohammad Badrul Karim Akib, ID- 201-15-13691 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 26 January 2024.

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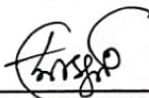
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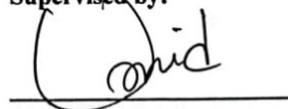
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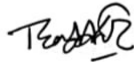
We at this moment declare that this project has been done by us under the supervision of **Md Umaid Hasan, Lecturer, Department of CSE Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

This report provides a comprehensive account of the development of a groundbreaking online platform called "Play Games to Learn - Where Education Meets Fun!" This platform aims to transform how we learn by combining education and gaming into an exciting and interactive experience. The platform's front end utilizes React, while the back end relies on Express. These technologies work in conjunction with the Prisma Library, which serves as a bridge between them, and the MySQL server functions as the database. Additionally, this platform incorporates a strong HRM system to enhance the user experience. The main objective of the platform is to connect game developers, educational institutions, and students. It aims to make learning more interesting and enjoyable by turning it into an exciting adventure. This platform acknowledges the requirement for captivating learning tools in our modern digital era. It strives to improve the results of learning and foster a deeper understanding of subjects through an interactive method. The report includes a comprehensive analysis of the design, implementation, and testing of the project, along with an exploration of its societal impact. It highlights the various challenges that were overcome during its development and emphasizes the potential influence it can have on education. "Play Games to Learn" serves as a symbol of technology's seamless integration with the field of education, marking the dawn of a new era in digital learning.

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CHAPTER 1

Introduction

1.1 Introduction

The desire for everything to be situated in the same spot is a trend that has gained increasing popularity throughout the last few years. Workers in the modern day often express a wish for everything to be present in the same spot. This is a common occurrence. In this particular instance, the trend that is being addressed is one of the specific trends that is now receiving an increasing amount of attention. The structure that is formed on the web is the approach that is both the most effective and the most essential when it comes to giving service to customers, and this is becoming more and more evident as time goes on. The Workers can carry out their daily activities and interact with one another by using the Play Games to Learn platform, which operates in a manner that is comparable to that of a modern web-based project. This allows the workers to work together. Because of the capabilities of the platform, it is possible to do this despite the challenges. While you are at this location, which is a place where fun and knowledge come together, you will have the chance to take part in activities that are educational while also having fun with interesting games. First and foremost, the purpose of this game is to make the instructional potential of educational games more accessible to users. This is one of the goals that you may achieve in the game. It is anticipated that this purpose will be effectively accomplished by the use of the attraction of gaming. The world of educational institutions, students, and game creators are all brought together via our platform, which has a dynamic hub that unites them all. Additionally, it serves as a conduit for communication between academics and game designers. This purpose may be accomplished by the formation of a partnership between educational institutions, students, and game producers. This relationship facilitates the development of games. As far as we are concerned, the educational system needs to be designed in such a way that it is not only engaging but also motivating and enjoyable. This is the viewpoint that we hold. According to our point of view, the process

of education has to be changed into an experience that is both positive and entertaining for the student. We also believe that teaching ought to be a journey rather than a destination, and this is something that we hold dear. To be able to produce such things, the workers need to be invested in their work, and they need to ensure that everything is comprehensible in a manner that is not just clear but also thorough. just then will they be able to produce such things? You will be able to produce such objects once they have reached that phase in their development. The things that were created for the employees include the smart Dashboard. This HR system allows us to find all of the employee details, provide attendance, view the payroll, make announcements, provide awards for special tasks and hard and soul work, view all of the projects that we are working on, and finally, a communication chat option that allows everyone to chat and provide the necessary documents. They will be working together on a substantial percentage of the tasks that they will be doing for this project. This will be done in combination with the efforts that they are doing individually. They are going to combine their efforts and work together to accomplish their goals. This project will have several key results, one of the most essential of which is that it will foster collaboration between management and people to guarantee that the projects will be finished with the greatest possible quality. In addition to the many other significant implications that this project will have, this is only one of them. When it comes to the outcomes that will be brought about as a consequence of this project, this is among the most significant outcomes.

1.2 Motivation

We concluded that we wanted to make the process of learning more engaging for the students, and we also wanted to establish a working environment that was favorable to productivity among the staff. In response to a discussion that we had with the management, this was the answer that we provided. After giving it some consideration, we realized that this was the solution. Taking everything into account, this was the alternative that we eventually decided to go with as our final choice. We were able to come to this insight as a result of the circumstances that we found ourselves going through at the time. Currently, the major reason that is contributing to the growth of this issue is the fact that young people

are growing increasingly unsatisfied with the traditional educational system. This is the case in this day and age. Because of this, things happen in the manner in which they occur. This is the reason why things take place. The use of third-person applications was by far the most significant factor that resulted in the construction of this project, and it was also the one that proved to be of great assistance in the process of developing this aforementioned project. The use of third-person apps ultimately resulted in the realization of this breakthrough. This specific action was carried out to attain the objectives that were specified for the project as a whole. The aim was to achieve those goals, and the desire was to accomplish that goal. These actions were carried out to accomplish the objectives that they were designed to accomplish from the beginning. As a consequence of the fact that we are expected to study in a traditional way, which is one of the many problems that we are put in the position of having to take into account and conquer, we have arrived at this conclusion regarding the issue. This is the conclusion that we have reached as a consequence of the research that we conducted. Users and staff members who are working toward the objective of making learning more engaging will discover that this exercise is relevant to their efforts to achieve that goal. As a result, they will realize that this activity is pertinent to the efforts that they are making. The rationale for this is that the activity will be relevant to both of the groups, which is the reason. This activity, which will be beneficial to both of these groups, will also be appreciated by both of these groups to an equal degree. The participation in this activity will be beneficial to both of these groups. Both of these groups will benefit from participating in the activity, which is why this is the case. In a similar vein, this work will be useful to each of these various groups in their unique ways within the contexts in which they are located via the circumstances that they are now experiencing. Both groups will benefit from the actions being done, which will guarantee that they will continue to exist in the future. These evaluations are now being carried out for both of these groups. As a result of the fact that the execution of this plan of action will be advantageous to both of these groups, the execution of this plan of action will be advantageous to both of them. It is specifically because both of these groups will be engaged in the process of putting this plan of action into effect.

1.3 Objectives

In this project, there are two types of objectives one for the students/learners and another for the developer/employers.

- Create a diverse library of games covering a wide range of subjects and skills for learners.
- Ensure each game is designed to be both educational and entertaining for learners.
- Provide easy-to-use tools for developers.
- Allow personalizing content based on their working dashboard needs.
- Implement a robust system to track and measure developers' progress.
- Provide detailed analytics for management to monitor individuals.
- Introduce a rewarding system to motivate developers to achieve milestones.
- Establish a vibrant community platform for developers to interact.
- Include social features like leaderboards and forums to enhance developers' engagement and collaboration.
- Incorporate gamified elements into assessments for a more engaging evaluation process.
- Use analytics to generate insightful reports on developers' performance, helping management tailor their engaging approach.

1.4 Expected Outcomes

For this project, the outcomes that we could expect are:

- Engagement and motivation for the learners and developers.
- Improvement of Accessibility.
- Automated Administrative tasks.
- Real-time skills.
- A positive Return on Investment (ROI).
- Streamlined communication.
- Enhance the satisfaction of developers.
- Talent hunting.

1.5 Project Management & Finance

This project Play Games to Learn was planned to be created by me and my supervisor. In the initial phase, we defined the scope of the company and created rules and platforms. Then we selected the target audience to get a proper user view. Then we established our project timeline which started in February 2023 and ended in December of 2023. We had sat several times and identified all the risks that could appear on completing the project. My supervisor had always monitored me, and I was reporting him timely with all the details. He also checked the quality of the project and currently, we are planning to launch our project. As there were no other teammates involved, we didn't have to make any financial money but in the future, on launching it we have a place to invest in this project.

1.6 Report Layout

In this report, there are a total of seven chapters.

Chapter 1, The starting to know our project, its motivation objectives, and expected outcomes.

Chapter 2, Discussed more about the technology which were used to create this project, past works related to this, analysis of the world, and the challenges.

Chapter 3, Sorted all the requirements business model and logical data models.

Chapter 4, Worked on the design to create the website both front-end and back-end.

Chapter 5, Implemented the project and tested all the utilities.

Chapter 6, Discusses the sustainability plan, ethical aspects, and the impact of the project on society.

Chapter 7, Discussed the scope of future development and concluded the report.

CHAPTER 2

Background

2.1 Terminologies

The primary objective of Play Games to Learn is to encourage creative collaboration among game developers who are using this platform. This is done to foster creative cooperation among game developers. The first reason is mostly related to the fact that all of the many conceptualizations of the operation will be gathered together in a single spot. Beginning from this point forward, a tremendous number of partnerships with educational institutions are going to be made. Schools and other educational institutions to make the process of learning more positive and entertaining for students. The use of it makes it possible to promote and disseminate strategies that are designed to increase the amount of exposure that the platform can obtain. To make this project more fascinating, several games were chosen as samples from real life. This action was taken to provide a more fascinating element to the project. Increasing the level of enjoyment that it provides was the purpose of this phase. This project will guarantee that the developers have a pleasant relationship with one another, and they will be able to view everything that is going place in front of them. This is an extra advantage that will be provided by this project. This will be one of the most significant benefits that will be gained. Due to the incorporation of gasification, they are given the ability to analyze the operation of the vessel, which is a really useful scenario. Edtech projects are projects that mix education and technology. These projects are referred to as "tech projects." This is because the effort brings together the two subjects. It will be necessary for an educational technology company to have a compact solution that integrates all of the necessary components for them to get their startup endeavor off the ground. This will be a solution that is both compact and effective.

2.2 Related Work

Our concept is quite different where our users will be able to learn through playing games and on the back side there is a Human Resource Management System also to run the

business quite well. So, in the first concept, there is only one website available which is for kids named “ABCya!” on the other hand, there are a few companies like EdTech “100 Minute School” and more.

2.3 Comparative Analysis

Play Games to Learn is a unique project. Currently, there are only a few websites where we can find and directly connect the learning by playing but on the other hand there are many Edtech companies where they are creating and researching how they can make the learning easy. In my project, all the things are available for a startup and tech company needs. Not only that in this project all the elements are very easy to understand and all those are very visible to others. On our website, there is a unique thing that is award and gamification. This feature encourages the developers to do much more than before and unleash their potential to the maximum level to reach the goal.

2.4 Scope of the Problem

As it is one of the new concepts of learning-based games, research materials are quite low or unavailable. We must try different things to make sure this learning goes full of entertaining and challenging. So, it would be very hard for us to develop a game-like project. But on the other hand, in tech, there are many competitors and there are many companies containing and maintaining HRM and ERP systems but in my one there available all types of things and no need to use third-party applications or software.

2.5 Challenges

There are a few challenges like lack of engagement, Limited practice application, and Learning silos. Traditional working methods may struggle to captivate employers/developers’ interest, resulting in disengagement and reduced motivation to comprehend and apply concepts across projects. The segmented nature of conventional working can create silos, preventing a holistic understanding of how procedures function within broader contexts.

CHAPTER 3

Requirement Specification

3.1 Business Process Modeling

In this project PG2L the main purpose is to sell games. So we used a simple model to go through all the parts like:

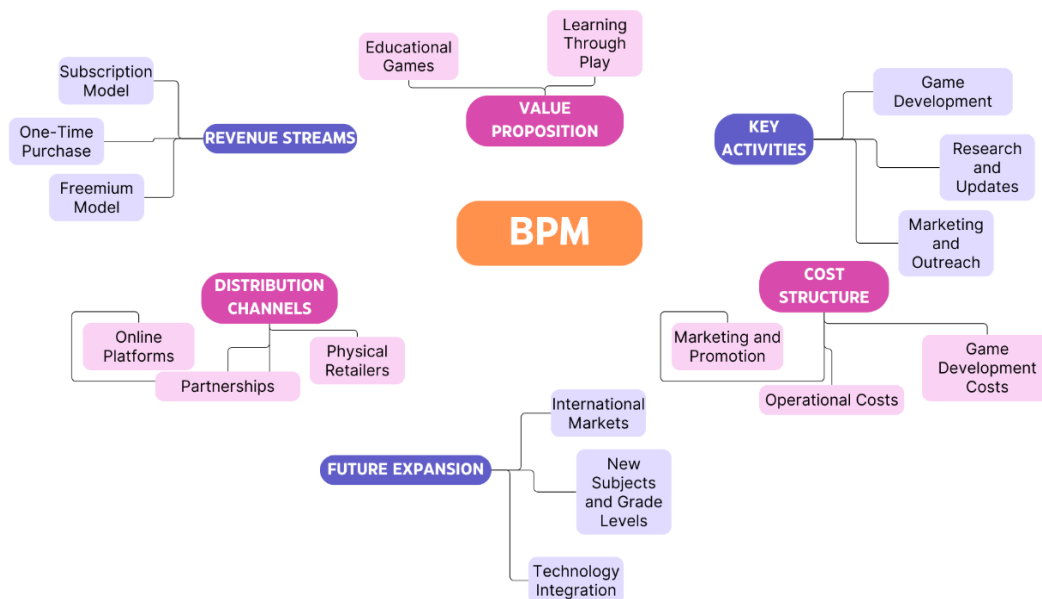


Figure 3.1.1: Business Process Modeling

Here in the model, there is a value proposition where mainly we make a value of our games and another thing is learning through games where we have to find the perfect gaming techniques that could be played to learn. We need a revenue model and for revenue, there are three parts a subscription model where a student can get different types of support then a time purchase which currently shows the game can be downloaded and played. Last is the freemium model where for some time we might let learners download the game for free. Then we have to work on our key activities like the development of the games,

research of new games, and updating the existing ones. The last one is the marketing of the games and outreach of partnerships. Then there are distribution channels where we can distribute our game like online platforms, and partnerships with different institutes, and physical retailers to sell the product. This stays in the business process of the project.

3.2 Requirement Collection and Analysis

For building the project first I went through all the tech company websites to gather information that how they have sold gaming or learning products. From there, I created the front end of my project using React. Then I took ideas from different ERP and HRM projects to match my idea of the project. The main thing I have done is that all-in-one package for a company in the frontend given all the dynamic features to be shown also the gaming product to download and made it a full user-friendly environment then other competitors and, in the backend, integrated all the required files and features so that the developers can get all thing together that they needed.

3.3 Use Case Modelling and Description

In this project, there are two use case models one is for the users which shows on the front end and another one is the backend which is for the developers of the company to monitor all the company's HRM and also ERP. In the first figure, the use case of users is shown and in the second figure, the use case of employees is shown.

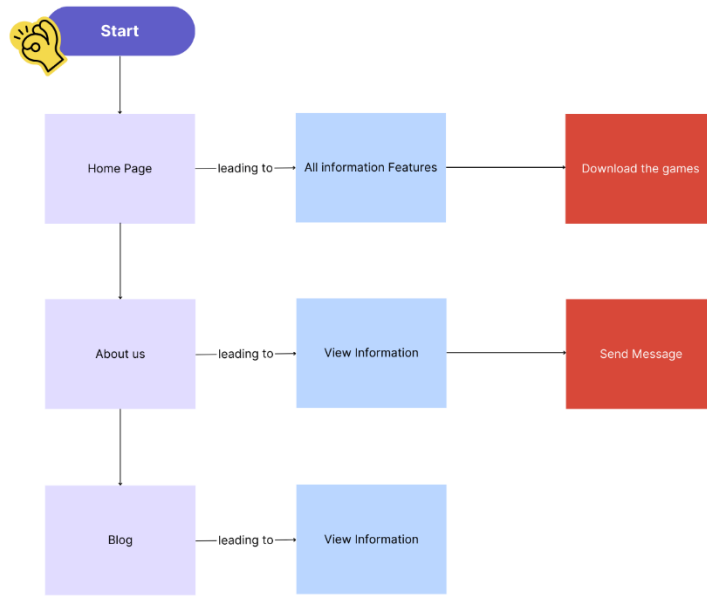


Figure 3.3.2: Use Case Model 1

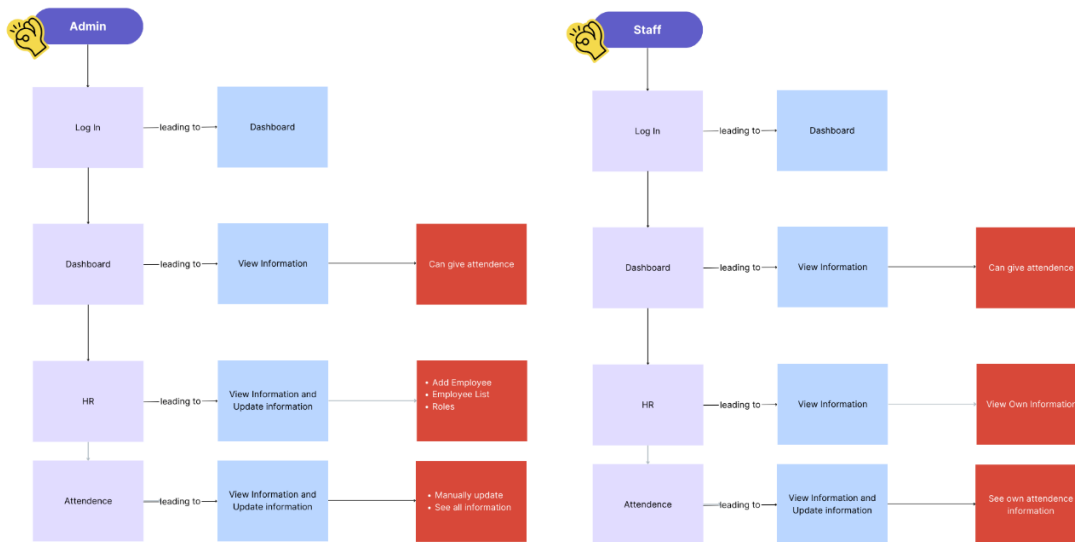


Figure 3.3.3: Use Case Model 2

3.4 Design Requirement

Before we could begin working on this project, we were required to first design the structure of the system. The completion of this task was necessary for us to do before we could begin working on it. To do this, it was required to not only figure out how the system operates but also to figure out the areas that it has an impact on. Therefore, it is of the highest essential for us to have the specifications for the hardware and software, and it is at this point that the component of the project that is appropriate and required for the completion of the job is presented. As a consequence of this, it is of the utmost importance for us to have these specifications. As soon as I became aware of what I was doing, I shifted my focus to the performance of the project, which included establishing what we would do to make it more dynamic and user-friendly at the same time. Immediately after I became aware of what had taken place, I behaved in this way. Immediately after that, I focused all of my efforts on ensuring that the project was adequately safeguarded from any possible threats that could arise. I was able to include new components into the system by making use of the link that exists between the systems that are located on the front end and also on the back end. Achieving this goal has been within my reach. The use of the Prisma model made it possible to experience the reality of this prospect. Following that encounter, the first things I started working on were the responsibilities of confirming and testing my product. I started focusing on those things very immediately. Throughout the entire approach, we evaluated every feature to make certain that it was suitable for the genuine workplace.

CHAPTER 4

Design Specification

4.1 Front-end Design

In this project of Play Games, 2 Learn the front-end design is created by React which is a library of JavaScript. It mainly works to build large-scale projects. It has dynamic web applications to focus on UI. It also has its logic and appearance. React has a few features where it creates a declarative UI state. It has its components for that reason it is reusable and it is easy to understand. It also makes the code modular and maintainable for developers. To build a project it follows an undetectable dataflow so that the data could be traced more easily and would be able to understand the code staying at any point or place. There are a few types of components in react like class components and functional components. Here all the components are connected through the parent component and it does all the necessary things to build the child components. It can control child components also. It also follows the lifecycle method which follows mounting, unmounting, and updating. It has its tool to create the project of react and build the app of the project.

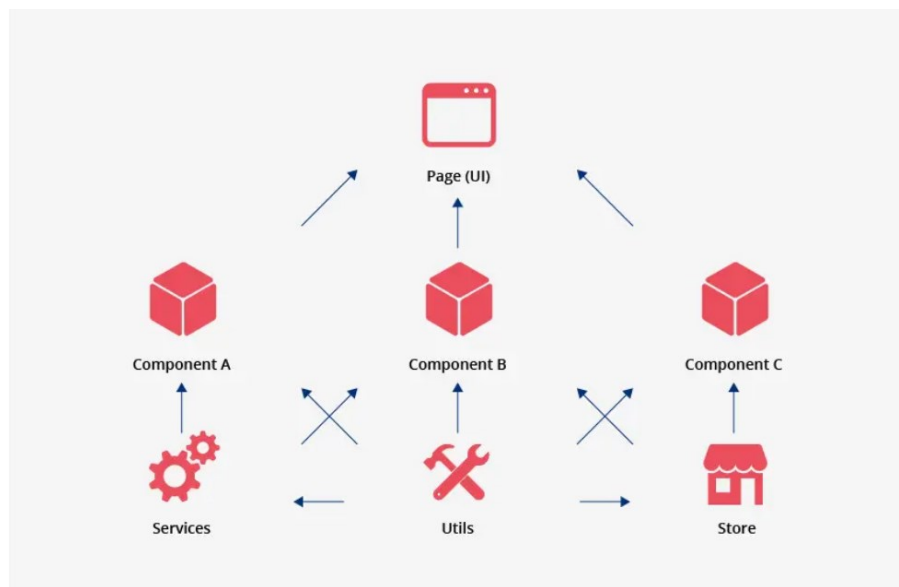


Figure 4.1.4: Front End Design

In PG2L the front end has a dynamic scoping appearance where it shows the home, about us, blog, and log-in to the ERP. Later on, the first banner where there is a short intro of the company and shows a few of the features. The main and selling point where the game could be downloaded on one press is shown. Like this, the whole project's front-end UI is created using React.

4.2 Back-end Design

In the back-end project, the design is made of Express. Express is a framework of node JS web applications. It mainly works to help servers and routes. It is a minimal and flexible framework where it creates robust APIs very quickly and easily. It provides a very thin layer of application features. It is commonly used for its routing facilities. It can be associated with different functions and different requests. It also contains the function of middleware where it accesses the function of request and response. It can also handle and detect errors.

The working architecture of Express is

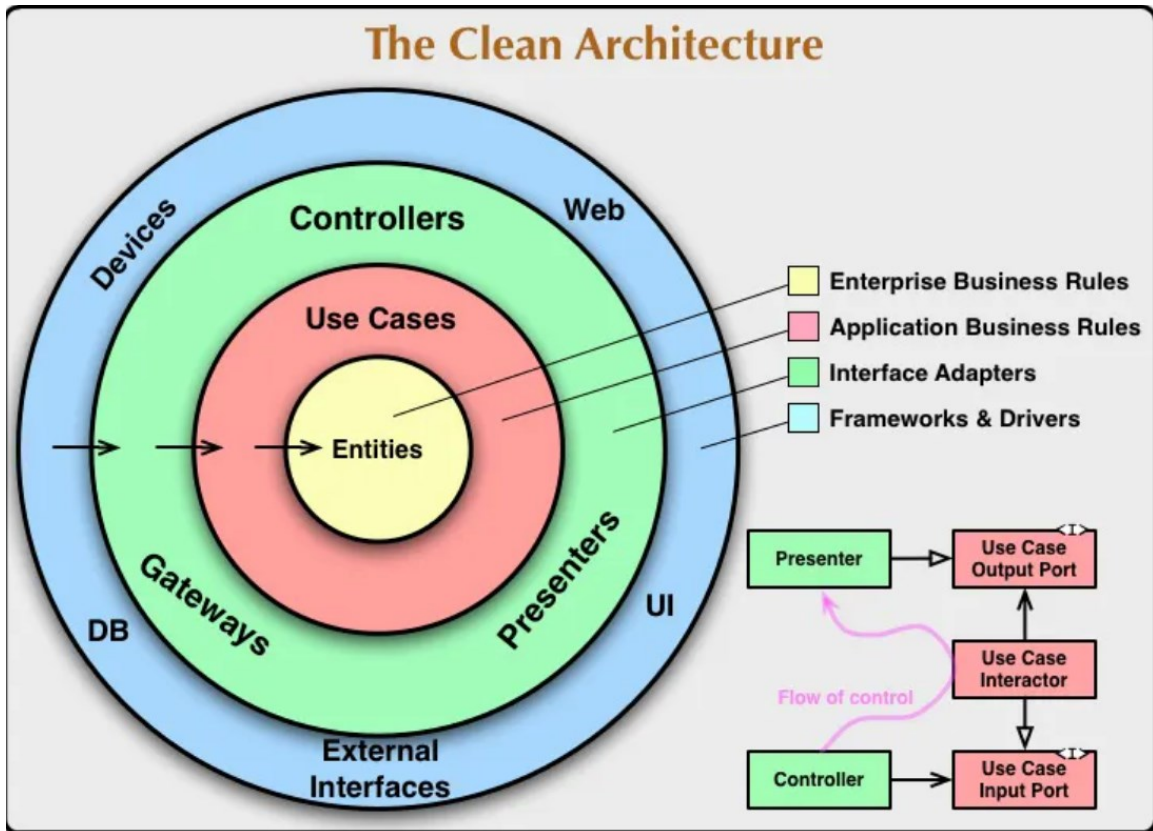


Figure 4.2.5: Architecture 1

In PG2L the express created the whole back-end of the project from starting to log in to get and add all the information of HRM and ERP. It connects with the database and in my project, I used the MySQL database server which connects like

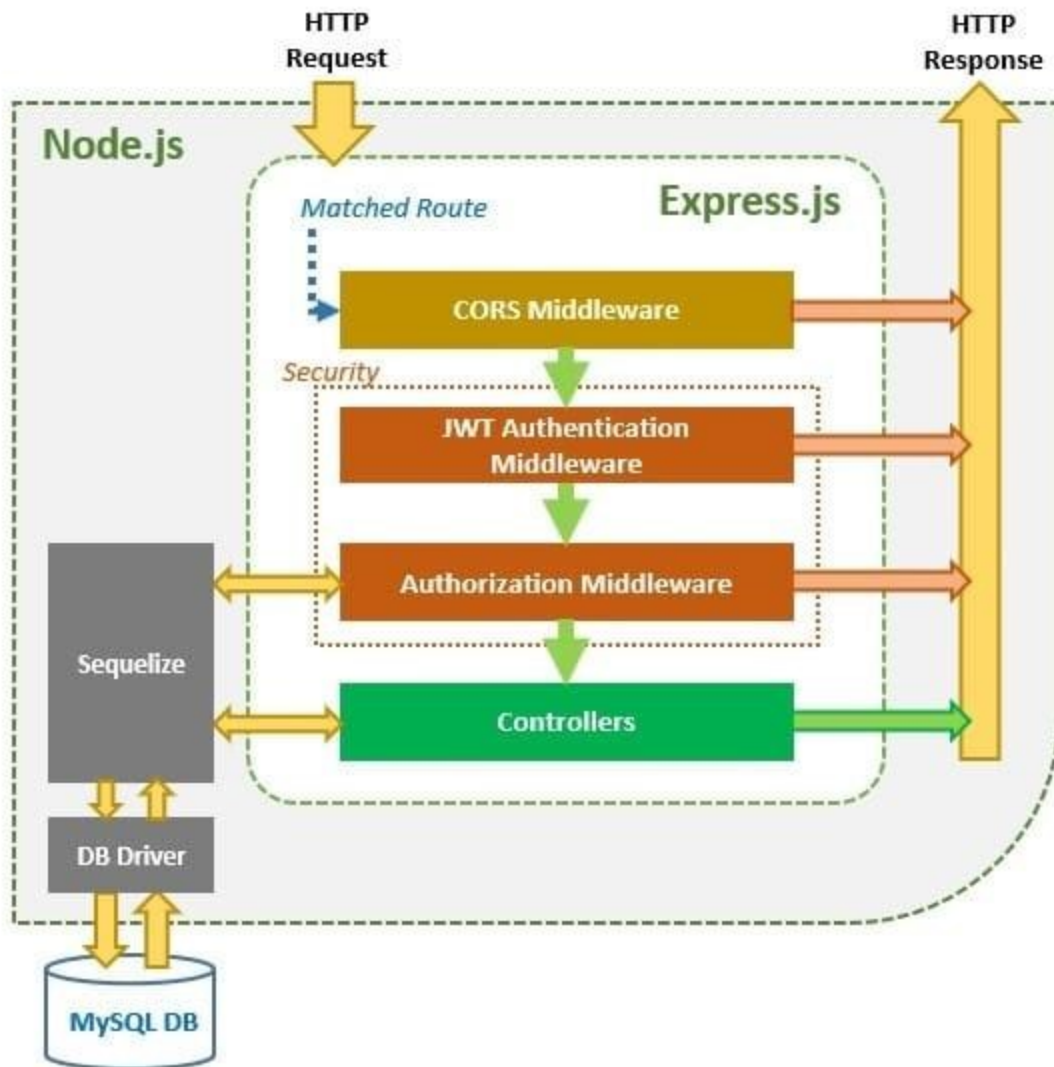


Figure 4.2.6: Architecture 2

This total back-end is connected with the front end through Prisma. Prisma is a library which helps to connect read and write data. In PG2L it connects the back-end data with the front-end so that it could be shown easily in front. The architecture of Prisma is

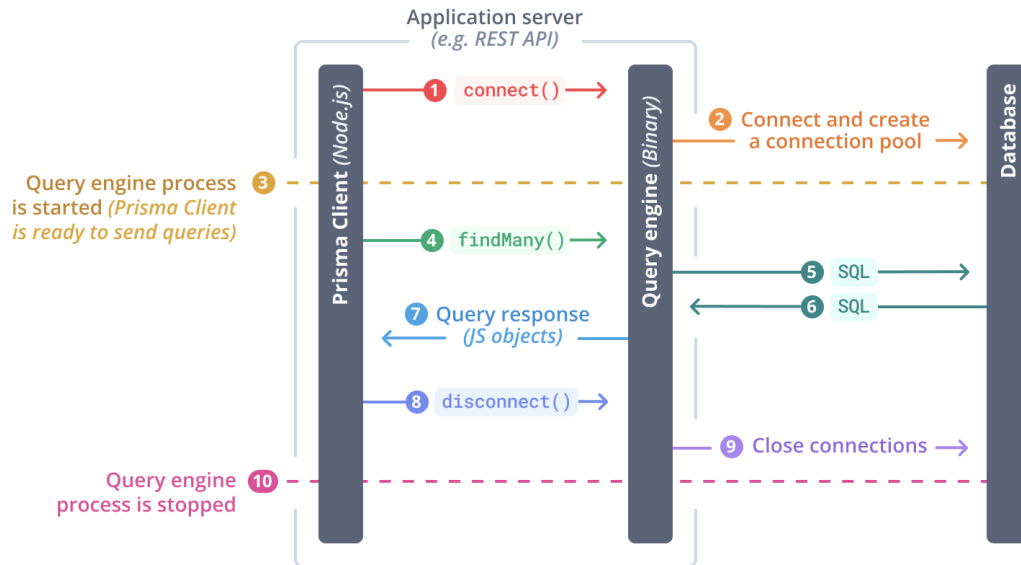


Figure 4.2.7: Connection Architecture

This is how the back end of Play Games 2 Learn was created. The format requires the middleware to request a response from the body. As we see all the details that are found as a caution and generated together on the field of responsiveness seem to find out a way to get more attractive and resilient.

4.3 Interaction Design and User Experience (UX)

In the project of Play Games 2 Learn the UX is quite simple and easy to use. At the start of the front end, the full banner shows up with a little information about the company.



Figure 4.3.8: Front Page

On the front side, there is a quick view of the navigation bar which dynamically shows up with spiral animation.

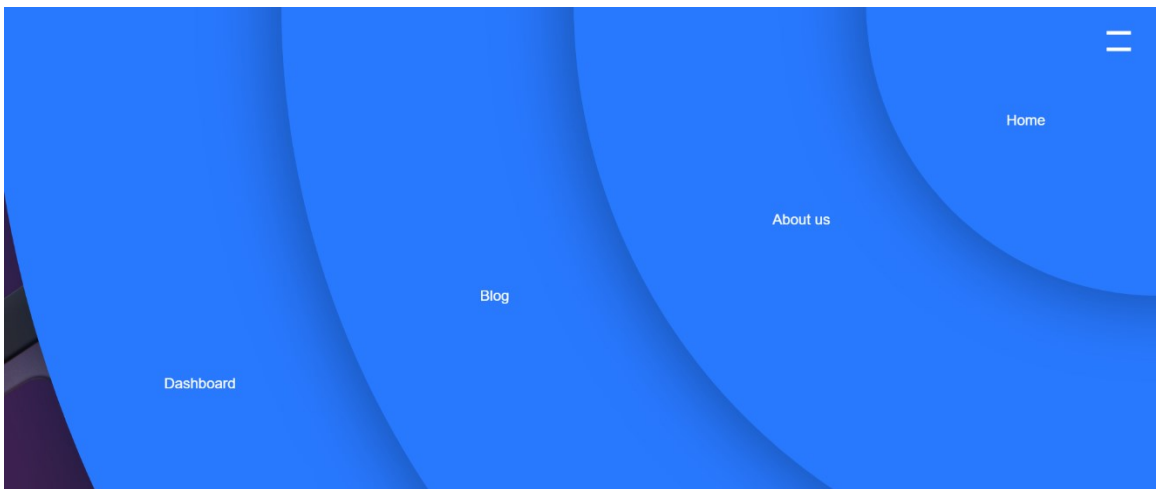


Figure 4.3.9: Navigation Bar

After the banner shows up there are a few features and staff information to show the details of the company and also details of the project. After that few banners are added with information about the project and finally in the end the selling part of the project where the game can be downloaded here.

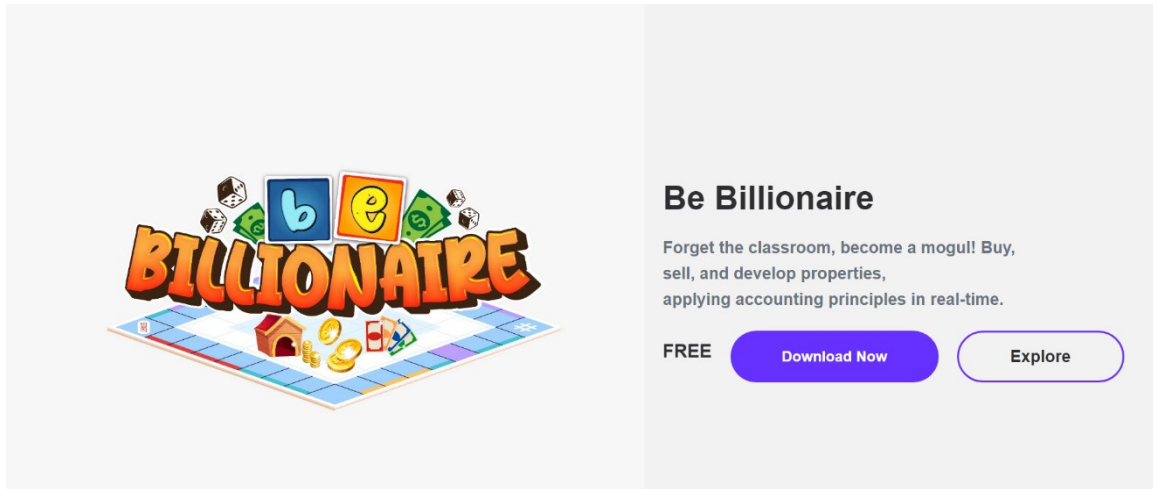


Figure 4.3.10: Game Content Page

It finishes with a nice simple footer where all the information and a few links are embedded. The next page shows About Us where the information about the company is given and there is a part where anyone can easily reach out for the merging details and get more info about it.

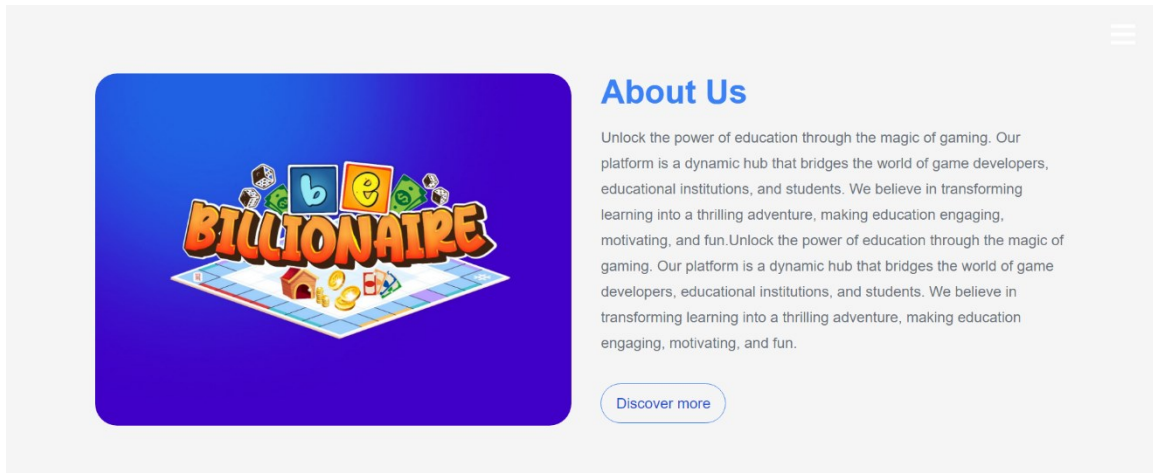


Figure 4.3.11: About US (Game)

By going through this all the UX are designed and for the ERP and HRM of the dashboard the UX looks like

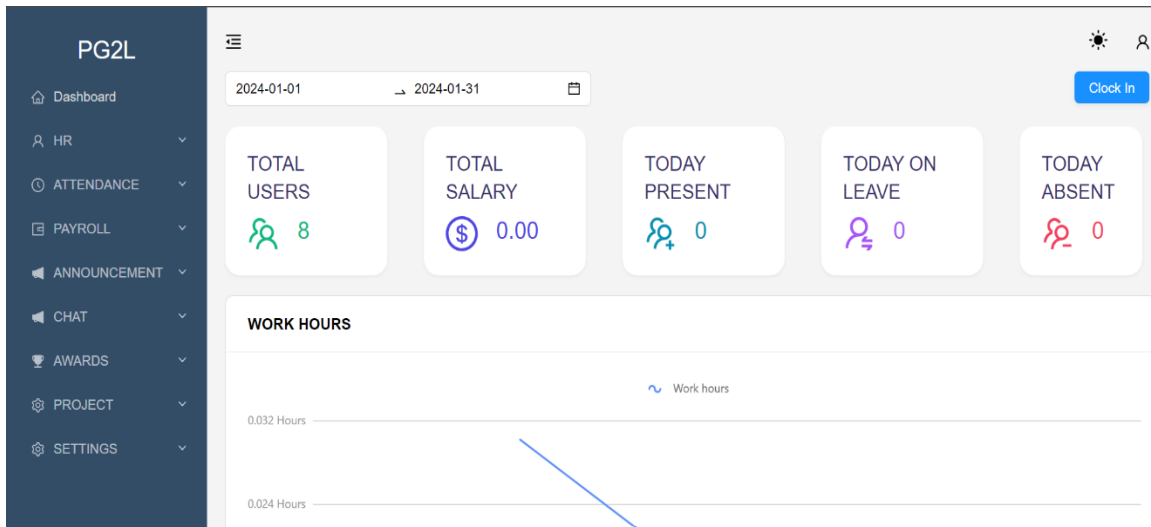


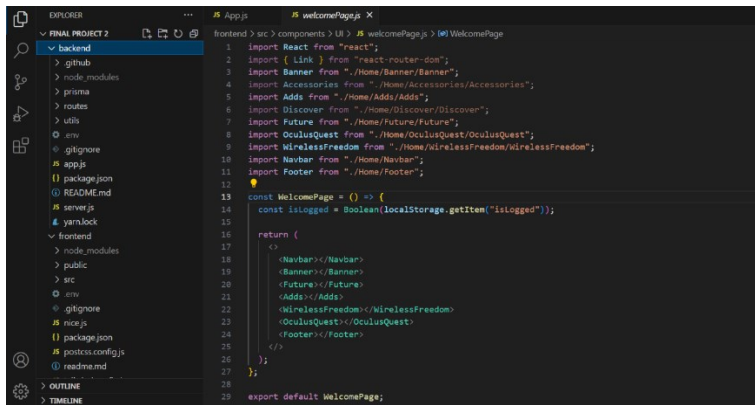
Figure 4.3.12: ERP system Front Page

Here the information quote is summarized and the user can easily understand and go through all the details as all the details are minimized here like few components are also available in the HR part and those are very responsive and user-friendly to get used to it. By this, the interaction design is created.

4.4 Implementation Requirements

The Play Games to Learn project needs many things to create in the front end it uses React to create the whole architecture of design. To design this coded structure, it follows the straight and basic way of code organization like giving the default folder names so that it could be easily understandable. It modules the codes folder so that for future development it could be found very easily by the developers. It uses the JSON package and the yard module node to run and lock the profile. It has its own customizable coded features for web package configuration. For enhanced styling, it also uses the preposition of CSS. For easy documentation, it also added a readme profile so that one can easily learn the development details. Now if we go to the back-end implementations where it uses the express to develop the system. The express server needed the middleware for handling the request and response information of the project. It also enables the connection to run from the system. For connecting with the database, it works on the MySQL server where it stands and creates

all data formats. Finally, the back end gets connected with the Prisma library to accomplish the project.



```
1 import React from "react";
2 import { Link } from "react-router-dom";
3 import Banner from "../Home/Banner/Banner";
4 import Accessories from "../Home/Accessories/Accessories";
5 import Adds from "../Home/Adds/Adds";
6 import Discover from "../Home/Discover/Discover";
7 import Future from "../Home/Future/Future";
8 import OculusQuest from "../Home/OculusQuest/OculusQuest";
9 import MIrelessFreedom from "../Home/MIrelessFreedom/MIrelessFreedom";
10 import NavBar from "../Home/NavBar";
11 import Footer from "../Home/Footer";
12
13 const WelcomePage = () => {
14   const isLoggedIn = Boolean(localStorage.getItem("isLoggedIn"));
15
16   return (
17     <>
18       <NavBar/></NavBar>
19       <Banner/></Banner>
20       <Future/></Future>
21       <Adds/></Adds>
22       <MIrelessFreedom/></MIrelessFreedom>
23       <OculusQuest/></OculusQuest>
24       <Footer/></Footer>
25     </>
26   );
27 }
28
29 export default WelcomePage;
```

Figure 4.4.13: Backend

CHAPTER 5

Implementation and Testing

5.1 Implementation Database

In this project, I used the MySQL data management system. Here I have used several numbers of databases which is linked with each other. Here can be seen that the first table belongs to Project. Where the contents of the column with ID, Project manager ID, Name, start date, End date, description, status, created at, and updated at. Here column name ID is Primary ID which is linked with every table. As on the table names Project belongs to the whole project the whole table should be managed by the project manager. So, his/her ID is important. Also, his/he name, when he started work, and when it ended are also included in the project table. Also, there would be a log that can be traced by creating and updating it. Both columns will show when the data is inserted and when the data is being modified. After that, a table is built allied user table. On this table user will use the system and the data will be updated on this table. Here lots of columns are included titled, "ID", "first name,", "last name", "username", "password", "email", "phone", address, etc. All of the columns are important as a user first needs to log in to the system. When they log in, they input all the fields that are included in the database. The user table contains almost 20 columns, which will gather their information and store it in the database. This is also a very secure option as all the information is contained here. Here also the primary ID is the ID column which is linked to the project table. That means by searching with ID people will be able to get access to both tables. Then on the database, another table is created titled, "projectteam". On the project team table, there are columns named, "id", "project team name", "projected", "status", "created at", "and updated". Here also the primary key is "id". And all the other columns are for using projects. Such as project team name, and project ID. Both columns show that when a team is working on a project theory must list the name of the project and the project ID. By tracing with id Project table can get access to the project team. So it is also linked with the project table. Then also there is a table

called role. Where keys are id, name, status, created at, and updated at. This table will show the role of the user and project workers. So here the name shows the man database option. A table called message is a kind of table that will keep a record of how many messages have been sent and how many messages would take to complete the project. Here the columns are id, from id, message. Here the system will send an SMS, and on which ID the system is ending will message will be recorded. Here also the primary key is id. By using which project table can be found. Also, the message table is linked with the user table. So, it will be very easy to trace which user is sending a message and what the topic is. Another table is called chatroom, where columns are id, from id, told, created at, and updated at. Here can be seen that the primary key here is id and from id. Which is similar to message and user ID. The table will be used as a room where users will share their functions and problems. So, it is very easy to assume that this table will also be linked with the user and message. There is another table called "attendance". Here the main function will be counting the attendance. So in this table, all the functions will belong to the attendance count. And as assumed previously the key on this table is id, user id, in time, out time, ip, comment, punched by, hour, intime status. All the function shows how much detail the database has been designed and this database shows every detail of users and projects. This database is also linked with the user table. Also, there is another table called role permission. Which shows which employee and which user will get which role. It is very important to have a table called role permission. From this table which admin is assigning which role to the employee can be traced. So, there is role id, which shows what's is the role id. Such as the manager ID, which is the GM ID etc. Also, there is a column named permission ID which indicates what the permission ID is assigned for. There is also a table called account, public holiday, designation history, project member, weekly holiday, and award history. All the database table has a primary id named, "id". So by searching with "id", all the database information can be traced. Also, the other columns like in designation history designation ID will show which designation holds the particular ID when they started, how long time they are working, and when they left the designation. A project team member will show the all details of a team member. Here another ID is placed as the project team ID. It is also linked with users and project tables.

So here can be seen that many relevant tables show the perfect combination of database starting. My SQL is very useful for creating a database and on this system, the database is unique enough to represent the whole system. The best thing about this system and the database is that most information is traceable and it will be very easy for the admin to use the database conveniently. Also, the database is very useful which makes the system very user-friendly and users will get very much swift access if they log in and continuously work on it. There are also many scopes to develop the database but now at this moment, the database is convenient enough to use the system. The infrastructure is very useful and effective. I hope in the future more work will be applied to the system and the database will be more convenient.

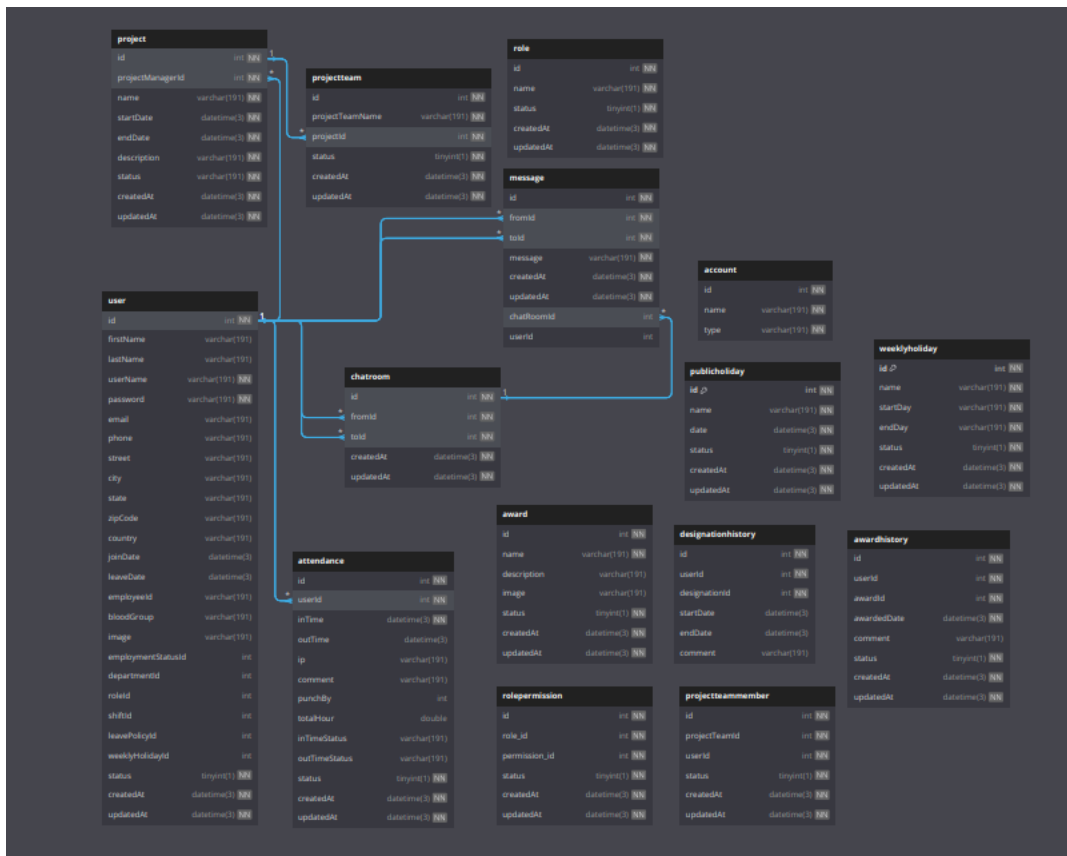


Figure 5.1.14: Database Architecture

5.2 Front-end Design

In my project, the front-end design was created by using React to focus on user interaction with the platform. Here we created all the elements starting with the nav bar to the footer of the user interface. First, we designed a long banner where we introduced our company and its motive, then we attached a video where we were developing the game “Be Billionaire”. Then we have given a few of our specification icons to identify our process and advantage to take service from us. Then we added the short info of our game. Finally, we gave the option to download the mobile game for the beta version. Lastly, the footer where few shortcuts have been added. In the subpage where About Us has been created mainly added the photo of the game and all the information about the company like its mission, vision what we do so on. At the end, there is a part where automatically anyone can send us an email or email box. The last page of the blog which we attached gives a little news about our company information. This all is created by reacting. Mainly here an architecture created of a website to show up all the components. It also worked for state management where all the dynamic overflow and overview showed. The functionality of JS is used here for interactive elements to show and add. Here for data handling the main thing is controlling used for functions. Finally, we integrated the backhand of Human Resource management which connects API connections to with backhand. It also enables functions like user authentication, progress tracking, and data analysis. Real-time data implementation was also done here to ensure the interactions were accurate. By implementing all those areas using React front-end design becomes much more attractive and responsive for users. Here is the working principle

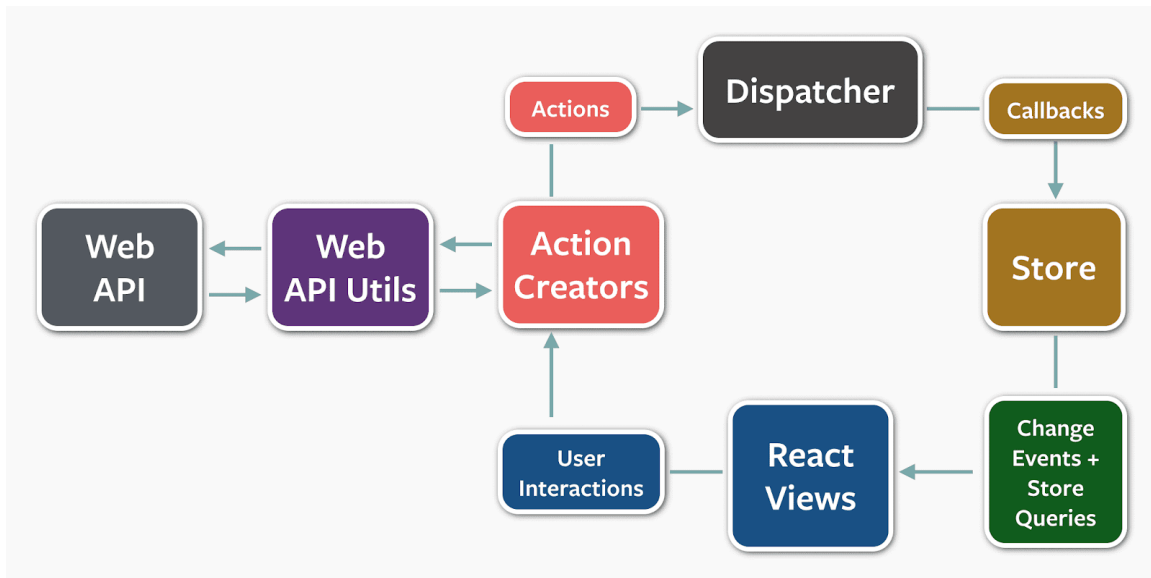


Figure 5.2.15: Working Principle

5.3 Testing Implementation

In the project, the main testing needed in the backend where to login first had to give the user ID and password. Then it will take you to the dashboard of the project where the total users list will be shown with their working hours. For the management, the total salary of that person will be also shown alongside the present person of today and those who are absent also will be shown. The next option shows HR where we will get the list of the people who are working there, and we can add or remove users from there. The next option is attendance where one can log in and log out and the time will automatically count on today's hour list. Then comes the part of payroll where we can release the payment of developers and they will receive that as salary of a month. Then the part announcement comes where if an announcement is given then it will show up to all of the people in front of their dashboard. The next option is a chat where the users can chat with each other simultaneously. Then the award comes where we can categorize the awards and also give them. Last comes a project where developers are divided into a few teams and start working there accordingly. In that part, we can create new projects, add developers and we can remove them also. The settings where few log in out and others things will stay. In this

user interface of backhand, there stays a total of two types one is light, another mode is dark which is also tested here. All the information is tested on this project of Play Games to learn.

CHAPTER 6

Impact on Society, Environment and Sustainability

6.1 Impact on Society

The concept of the project Play Game to Learn is also an educational enhancement of society. Mainly the target is to make learning and working more engaging effective and easy to learn. In the backend where all the things come together also makes that a platform of society because at that platform many developers connect and make it a developed place which also changes their minds and makes them think hard. The concept can give access to learning to all types of people. As gaming teaches accounting anyone can download it from the website of PG2L and play to learn that so it would be easily accessed by all types of people. This project will also create a society where developers, learners, and educational institutes will get connected and learn the way by playing games. So, this project surely will impact society very harmoniously.

6.2 Impact on Environment

The ability of a person to absorb information in a time-efficient manner is likely to be affected in both positive and negative ways by playing games. It is possible that playing games might have both positive and negative consequences. This must be taken into account since it is an important aspect. The development of a digital infrastructure is one of the many good aspects of this project, which will ultimately result in the building of a digital infrastructure. Just one of the numerous benefits that are a part of the project is this particular advantage. The fact that this is only one of the many remarkable qualities that this endeavor has is one of the many fantastic characteristics that it possesses. It will be important to develop a digital infrastructure footprint to facilitate the establishment of learning and working habits, which will be required in the future. This is going to be necessary to make the formation of these routines easier to do. Because everyone in the same place will have access to the internet, the construction of a digital footprint will be of the highest relevance. This is because everyone will be in the same spot. Because of this,

it is guaranteed that all individuals will have access to the internet for the whole of the procedure. Even though it is general knowledge that trees are the source of paper, the project is developed on a platform that is based on the Internet. This is the case even though forests are the source of paper. However, this is the situation, even though the internet is the fundamental foundation around which the project is built. As a consequence of the fact that it will be advantageous to the environment and will lead to the preservation of a significant number of trees, it will not need the use of any sort of paper. This is because these actions will result in the protection of trees. The efforts that are being made will, in the end, result in the preservation of trees, which is one of the reasons why this is becoming more prevalent. The quantity of energy that is used by the system is not the only thing that works against the system; there are a great number of additional variables that operate against it. Energy will steadily deplete over time, eventually reaching a point when it is no longer available for anybody to use. Specifically, this is because energy is a limited resource that will ultimately be depleted. The repercussions of this are something that just cannot be avoided in any manner. In light of this, it is anticipated that this project will have a detrimental effect on the ecosystem in the years to come. This is because it is predicted that a significant amount of energy and electricity will be used throughout this project. This is the reason why this is the case.

6.3 Ethical Aspects

Every project has some ethics that should be maintained. In Play Games to Learn all the things will be stored online so the first thing we have to maintain is security. As it is a Human Resource Management system at the backend there will be many personal information of the developers and also some confidential details of the project. So, all those must be secured, and all the employees have to maintain their privacy on that. The second important thing is that we have to take notice of the context of learning, as we will display the games that will teach others some academic or non-academic knowledge, we have to maintain all the context like we cannot teach any false information or false knowledge to them. Another thing we have to be fair to all of the learners and also all the developers as all will give their heart and soul to work for the company, we have to be fair to all.

6.4 Sustainability Plan

Play Games to Learn is an edtech project where learners will learn through games and there will be a community of developers and workers. As it is new to this generation it will be hard to sustain at first because it will be a new adaptation but the main thing that we have to keep in mind is that we have to create financial viability. We need investment, partnership, or grant to run this project and we must maintain a good communicative relationship among all the partners and members so that we can discuss all the financial things we should make a follow-up every year to sustain the project company. Then we have to maintain scalability to run the accommodation of the project. We have to make all the marks and maintain that scale to run that accordingly. We have to improve our projects like the “Be Billionaire” project. We must have to improve the quality otherwise at a certain point learners will get bored. We have to introduce new projects and new games so that we don’t get stuck or run by just one. Finally, community engagement all have to create and engage new communities so that we don’t lose our target audience and users.

CHAPTER 7

Conclusion and Future Scope

7.1 Conclusion and Discussion

‘Play Games to Learn’ the edtech project will represent a significant role in educational technology. This project has just successfully shown that learning is fun and working together on the same platform for developers is fun. This project also demonstrated that we could create a community where developers, institutes, and learners can connect. Using React at the front end and the big Human Resource Management at the back end shows that the technology has gone very high in learning. In this project, we achieved an interactive learning environment where learners can play games to learn and engage with many people together. A great competitive working environment for the developers where the developers could go through all sorts of support. This project also provided flexibility to work and develop a good project in the proper time. This project also has effective collaboration with developers learners and institutes. To build up this project we must balance our objective and engaging game styles. We had to take risks to get a fresh new start and do many developments. We also found there are many impacts of this project and we must discuss and research more about the impacts so that the positive impact rises and the negative goes down. For more long-term sustainability we have to think of the long run like we always have to find out what will come out in the future so that we can take the right steps at the right time. In the end, Play Games to Learn is not just only a learning or educational technology platform but also it will be a meat of lions for future endeavors. In essence, PG2L addresses the challenges in traditional education by introducing an innovative platform that blends the thrill of gaming with the depth of educational content, creating a dynamic and effective learning experience across a spectrum of subjects.

7.2 Scope for Future Development

“Play Games to Learn” is now in beta form in the future it will be one of the top EdTech Companies so for the future development needed the scopes are:

- Create a signup page for the user.
- Develop more games like Be Billionaire.
- Create an emulator platform to play the game on PC.
- Create a revenue portal.
- Integration of Artificial Intelligence.
- Integration of Augmented Reality and Virtual Reality
- Gamification and assessment for learners

Those future scopes are multifaceted; they mainly focus on accessibility, inclusivity, and sustainability.

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