

Gamesino

Final 4th Year Report

South East Technological University



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Introduction

The following final report will provide an insight into the development of this project.

The goal of this project is to develop an online games platform application that allows people to purchase games with stripe and get it stored in their library and also play online games with people on the internet. You will also be able to gamble in the casino to win cash and transfer your earnings to your paypal account or to buy a game.

In this final report document, the goal is to highlight the development process of Gamesino. It will also go into the detail the challenges I had in the making of this project and how I was able to solve them alongside with the accomplishments I was able to achieve and the relevant technologies that were used in order for this project to be made.

This report will also include how I would make this project again if I started over and its learning outcomes.

Project Description

As mentioned above, Gamesino is a web application made for people who would like to be able to purchase games and be able to play them in their library. Gamesino also allows users to view their transaction history and be able to gamble using their own funds and win some cash to withdraw to their paypal and be able to use some of this cash to buy a game from the store.

Gamesino is a cross-platform application intended for the usage of websites and mobile devices. Gamesino is developed using ASP.net core mvc which allows for cross-platform websites to be built up to standard.

The elements and styling was made using bootstrap 5 for easy component styling and easier for these components to adjust based on if the user is on a mobile phone or their computer. The Views was written in HTML,CSS,Javascript where relevant and the models and controllers and other backend files was written in C# since ASP.net Core MVC uses C# making this similar to a full-stack type of development.

The database was made using Azure Database and models which allowed for data to be stored in the cloud rather than a local mysql db which has a chance of being corrupted or lost due to a hard drive fault or anything else. This database also had the ability to accommodate a large scale of users since this is a gaming and gambling website.

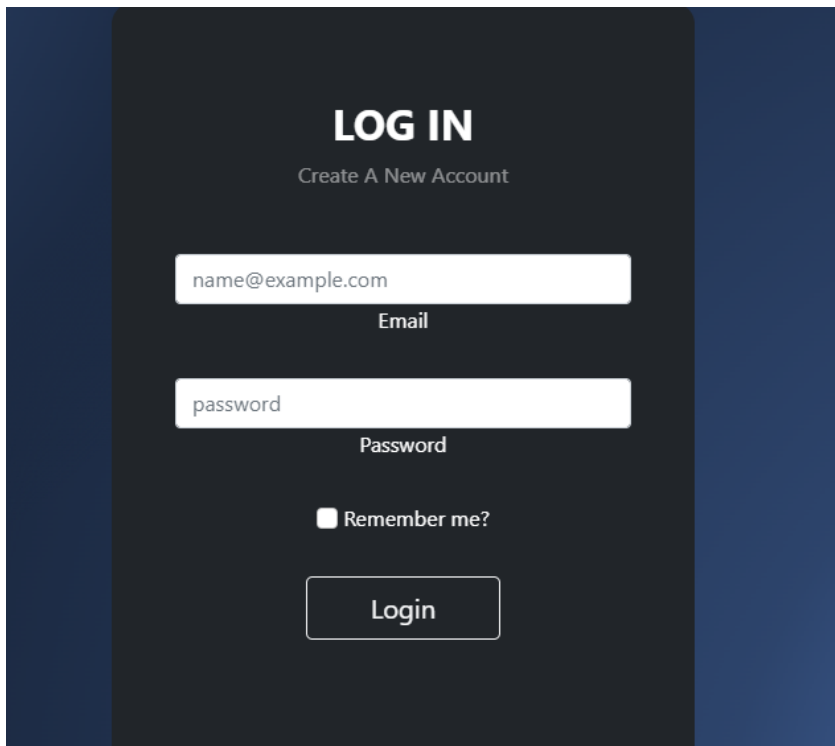
The application was also hosted using Azure's hosting plan which was really cheap alongside with the azure database. This was assuring as if anything was to happen to the files, the database didn't need to be rebuilt from the ground up again.

Visual Studio was used as the IDE for the development of this project since it had a number of packages and addons that were relevant to the application such as the stripe API, PayPal Payouts etc.

Application Screenshots

Login Screen

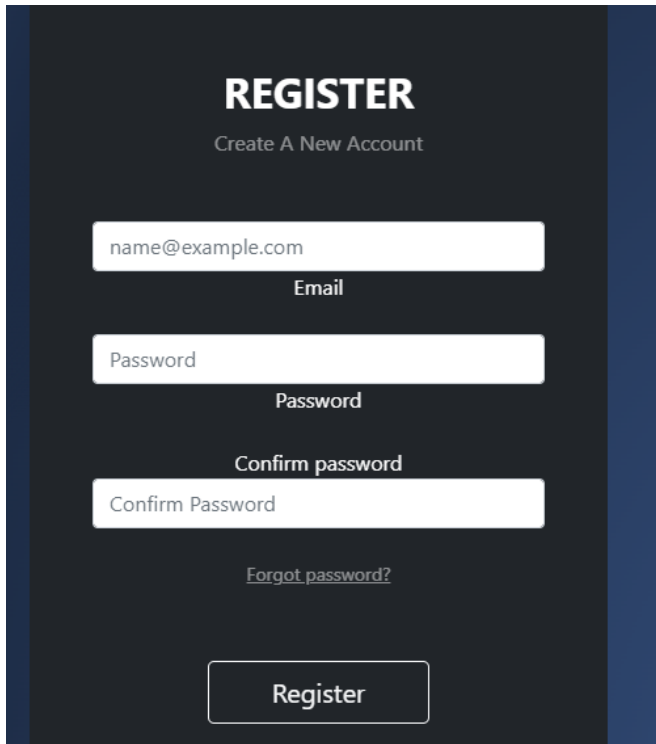
The Login screen is presented when a user wants to log in. Here they have two fields they will enter in which is the email and password in order to log in. User details are retrieved from the azure database and are verified. Users can select the button “Remember me?” in order for them to not have to log in each time they go on the site. Users will also be prompted with this screen if they try to access a resource that requires them to be logged in.



The screenshot shows a login interface with a dark background and blue sidebars. At the top, the text "LOG IN" is displayed in large white letters, with "Create A New Account" in smaller white text below it. There are two white input fields: the first contains "name@example.com" and is labeled "Email" below it; the second contains "password" and is labeled "Password" below it. Below the password field is a checkbox labeled "Remember me?". At the bottom, there is a white "Login" button.

Register Screen

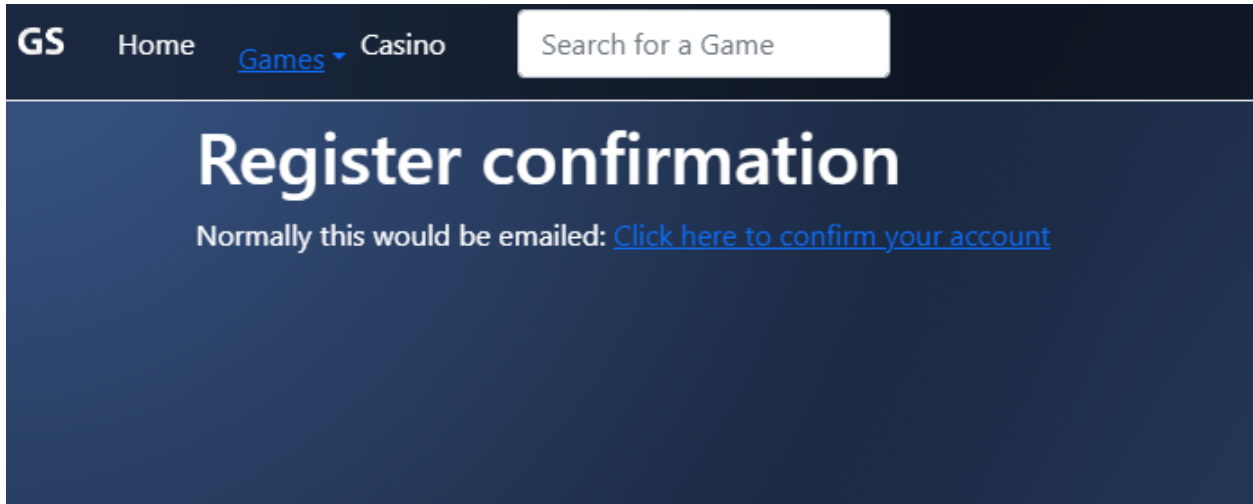
Here on this screen, a user can register an account on the application. They will enter in three fields which are the email, password and confirm password. Once Users enter in their details, they will be moved to a confirm email screen shown below. Users also have the option to proceed to access “forget password” if they have forgotten their password.



The image shows a dark-themed registration screen. At the top, the word "REGISTER" is written in large, bold, white capital letters. Below it, the text "Create A New Account" is displayed in a smaller, lighter font. There are three white input fields stacked vertically. The first field contains the text "name@example.com" and is labeled "Email" below it. The second field contains the text "Password" and is labeled "Password" below it. The third field contains the text "Confirm Password" and is labeled "Confirm password" above it. Below the input fields, there is a link that says "Forgot password?". At the bottom of the screen, there is a white button with the text "Register" inside it.

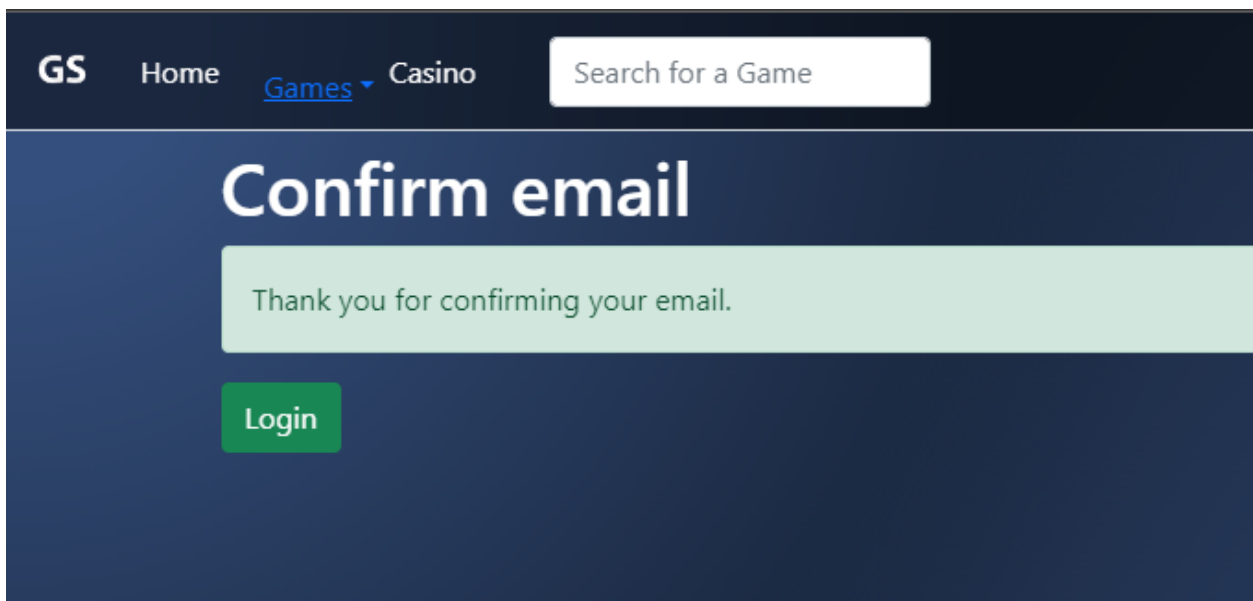
Email Confirmation Screen

This is the screen users are presented with once they register an account. Normally account registration will be emailed but since this is not implemented, users will have to click a link to confirm their account.



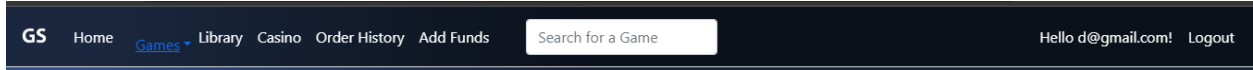
Confirm Email

Once a user clicks on the link to confirm their account email they will be presented with this screen. This screen's purpose is visually confirm to the user that their account is confirmed and able to be logged in and using the login button will open the Log in screen



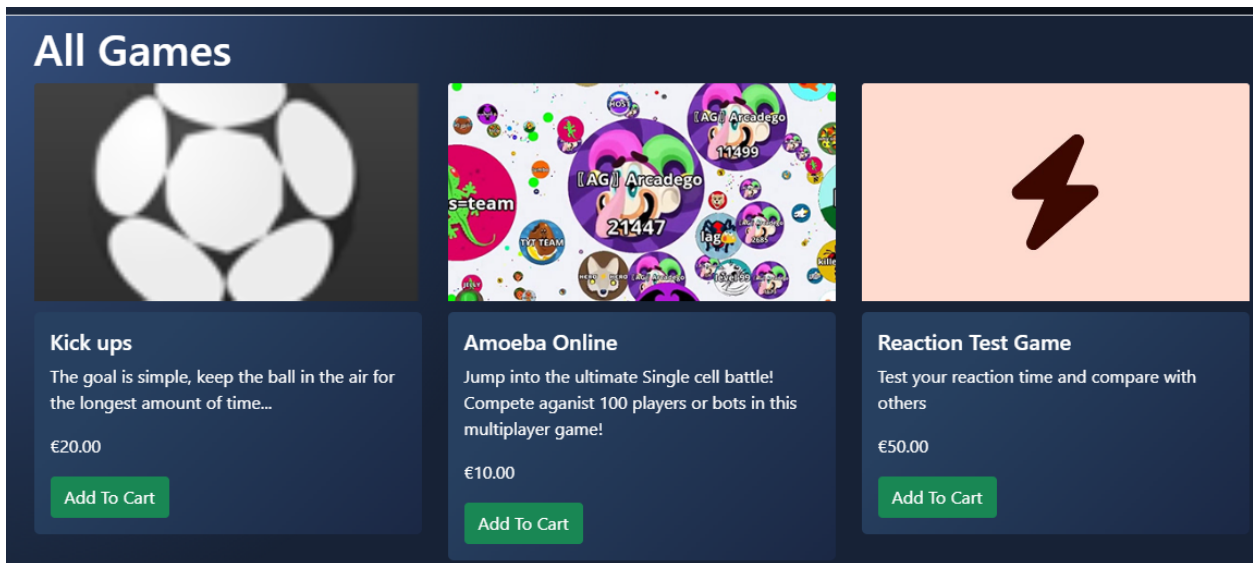
NavBar Screen

Once a user has logged in, the navigation bar will be updated to this. Here it displays various tabs such as Library, Casino, Order History, Add Funds, search bar and the Hello to the user and logout button.



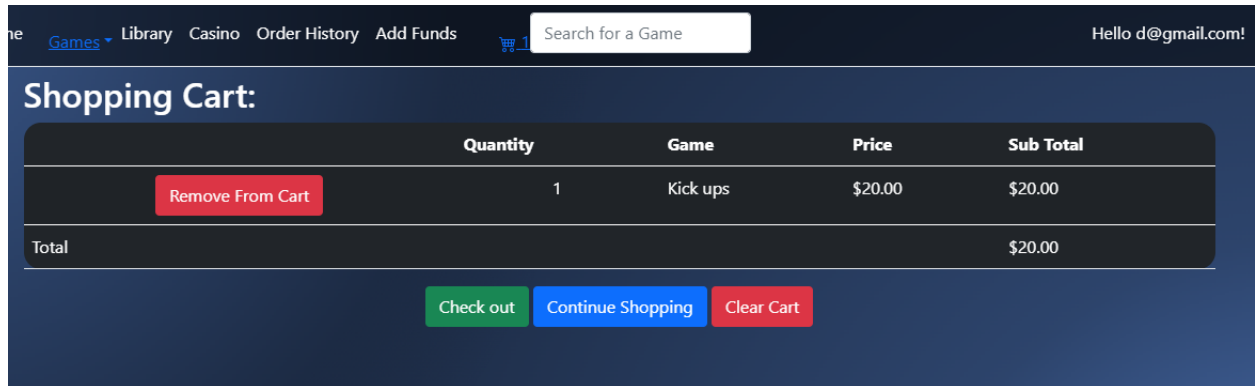
Games List Screen

Here once the user clicks on the Games tab, it will open a page that will display all the games currently available to play. Users will be able to see all the paid games, free games and casino games



Shopping Cart Screen

Once a user clicks on add to cart, they will be able to see their cart. Here it displays the game the user wishes to buy. It shows its name along with its price and the total of the cart. Users can remove a game from their cart or clear their cart completely and from here can continue shopping for games or check out.

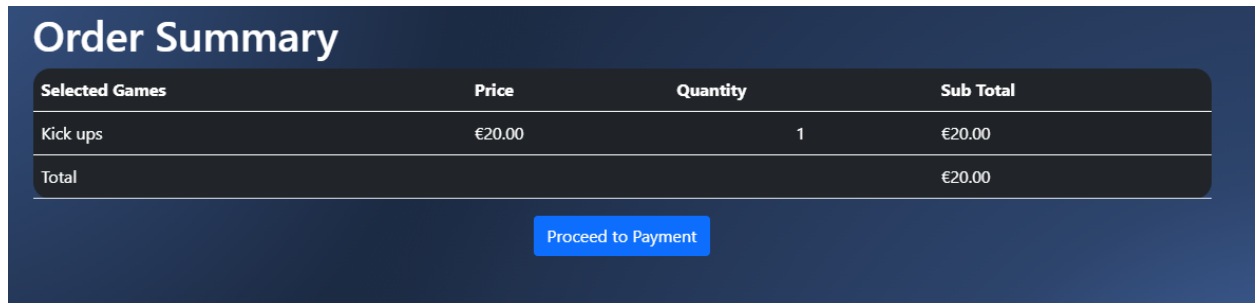


Checkout Screen

Here the user will enter in their details to checkout. They will enter in their name, address, post code etc and then will move onto order summary

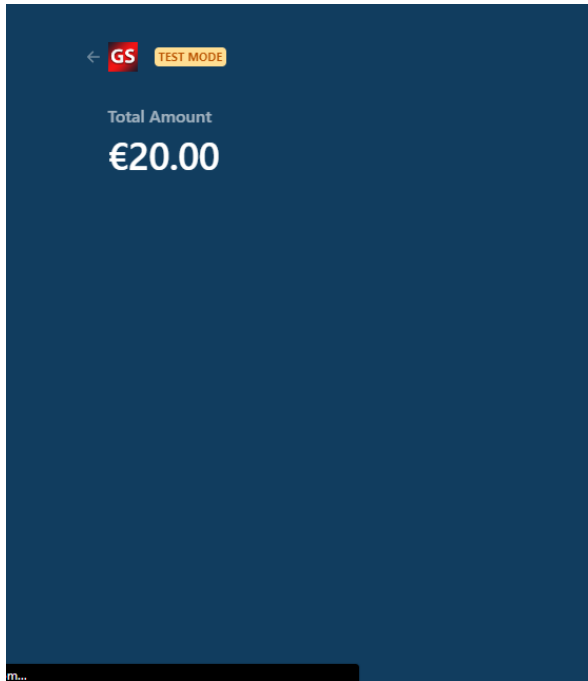
Order Summary Screen

Here the user will see the order summary of their order. It shows the games they wish to buy alongside their price. Here the user can proceed to the stripe Payment once they are happy with their selected games.



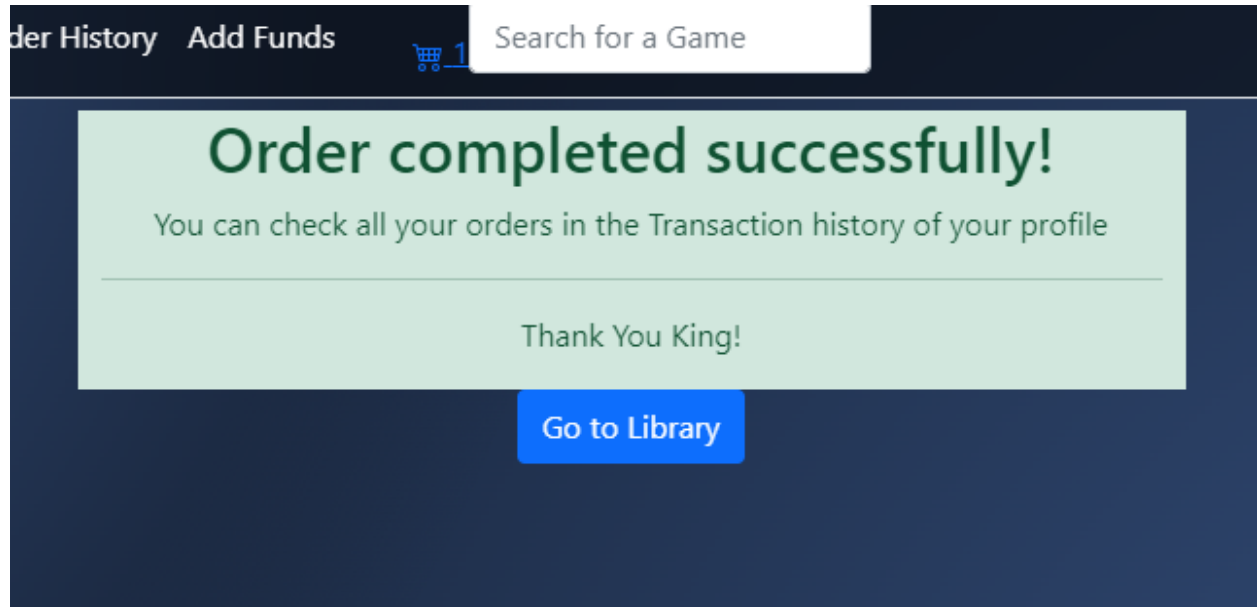
Stripe checkout Screen

Once the user has proceeded to payment, they will be presented with the stripe checkout screen. Here the user can see their total amount they are paying and pay with link or Apple pay or go with the traditional route of entering in their card details. The user will enter in email and since it's a test mode of the stripe checkout, users will use the test card number : 4242 4242 4242 4242 and any valid MM/YY and CVC in order to pay for their game.

A screenshot of the Stripe checkout form. At the top, there are two buttons: a black 'G Pay' button and a green 'Pay with link =>' button. Below these is a separator line with the text 'Or pay another way'. Underneath is an 'Email' input field. The 'Payment method' section shows four options: 'Card', 'iDEAL', 'Bancontact', and 'Apple Pay'. The 'Card information' section includes a card number field with '1234 1234 1234 1234' and logos for VISA, Mastercard, and American Express. Below that are fields for 'MM / YY' and 'CVC'. The 'Name on card' field is empty. The 'Country or region' dropdown menu is set to 'Ireland'.

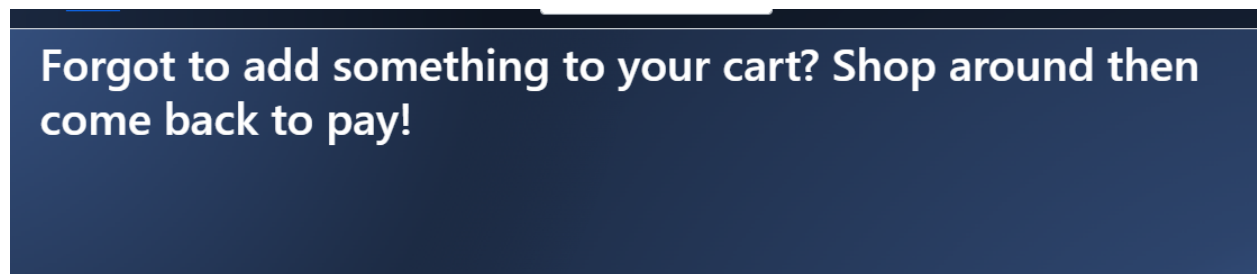
Order Success Screen

Here, once the payment is successful, the user will see this screen which visually confirms to them that their order has been completed successfully. From here they can continue on to their library to see their purchased game.



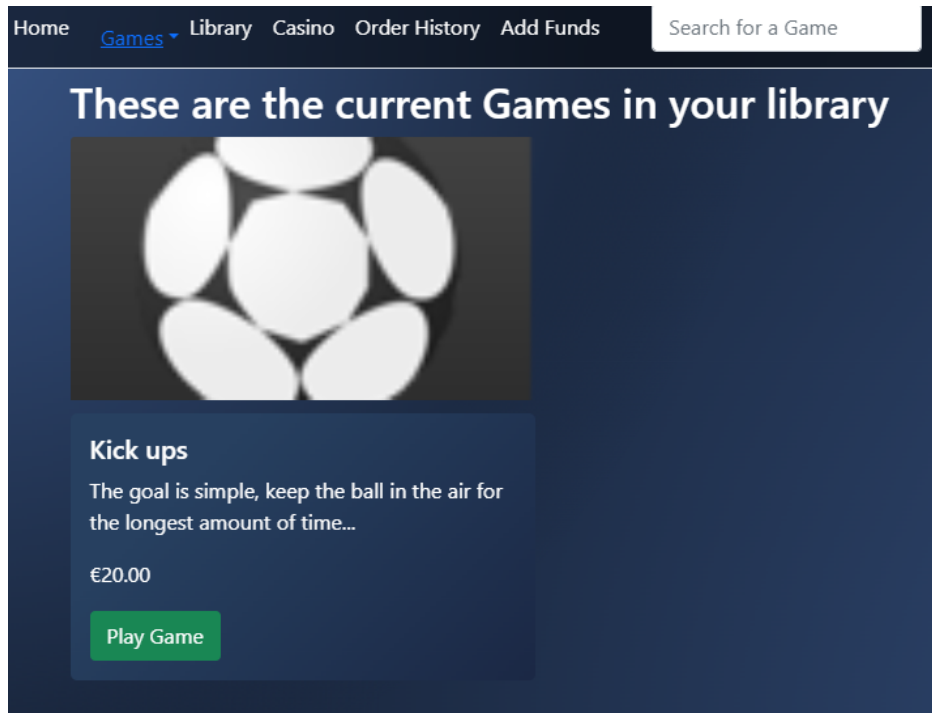
Order Cancelled Screen

If for some reason, the user decides to back out of the stripe payment, they will be presented with this screen that explains they can still pay for a game after shopping around.



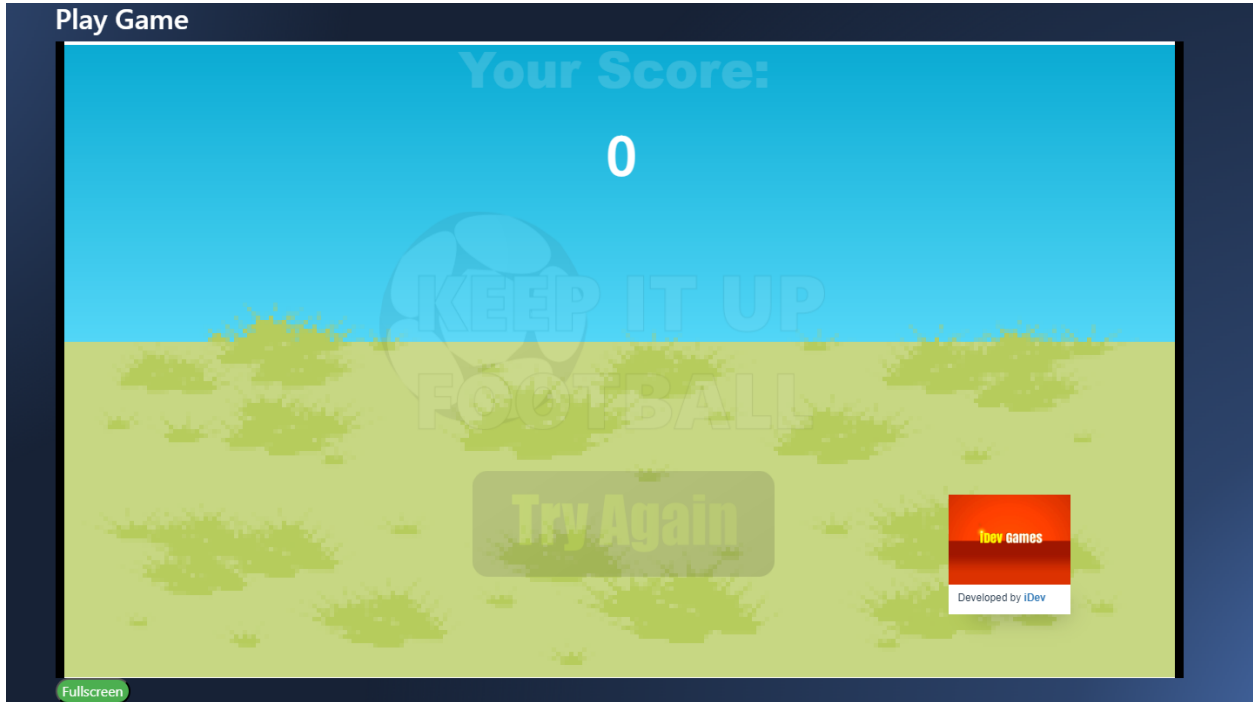
Library Screen

This is the library screen where the user can see their purchased game in their account in their library. From here they can play their games in their library.



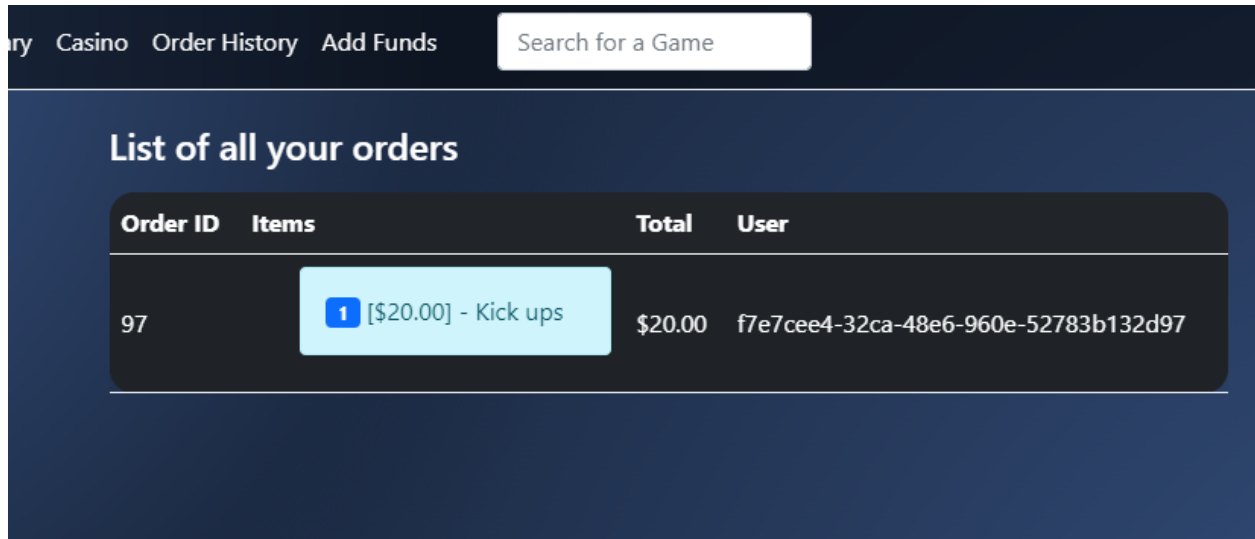
Play Game Screen

The user can play their desired game. It shows the game and a fullscreen button which will expand the game to cover the whole screen. It is an embed code that's displaying the game. Only users who have paid for this game can see this screen of the game.



Order History

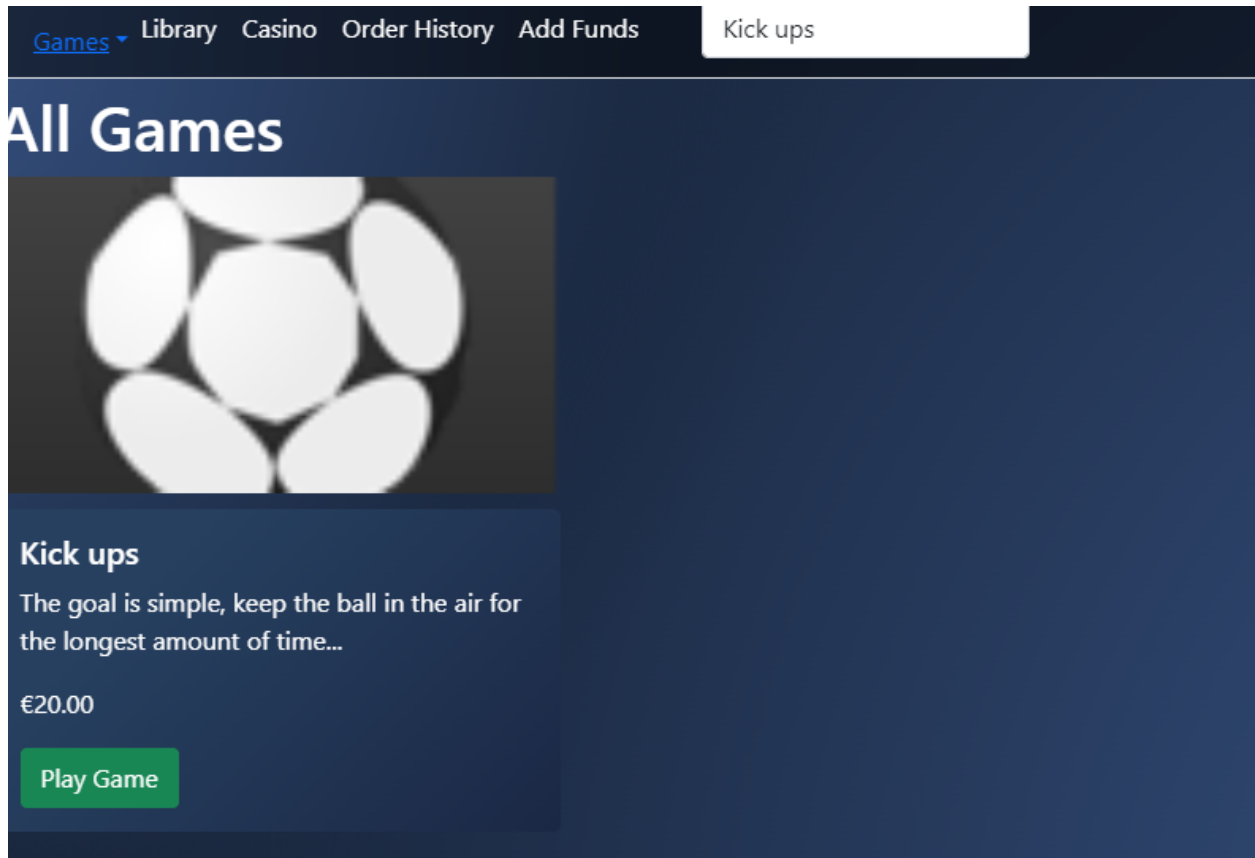
Here the user can see the orders they have made. It shows their Order ID, the items they have purchased along with its total and their User ID which will be used if there's an issue with their account. If the user hasn't made any purchases it will only show the headings and nothing in the table.



Order ID	Items	Total	User
97	1 [\$20.00] - Kick ups	\$20.00	f7e7cee4-32ca-48e6-960e-52783b132d97

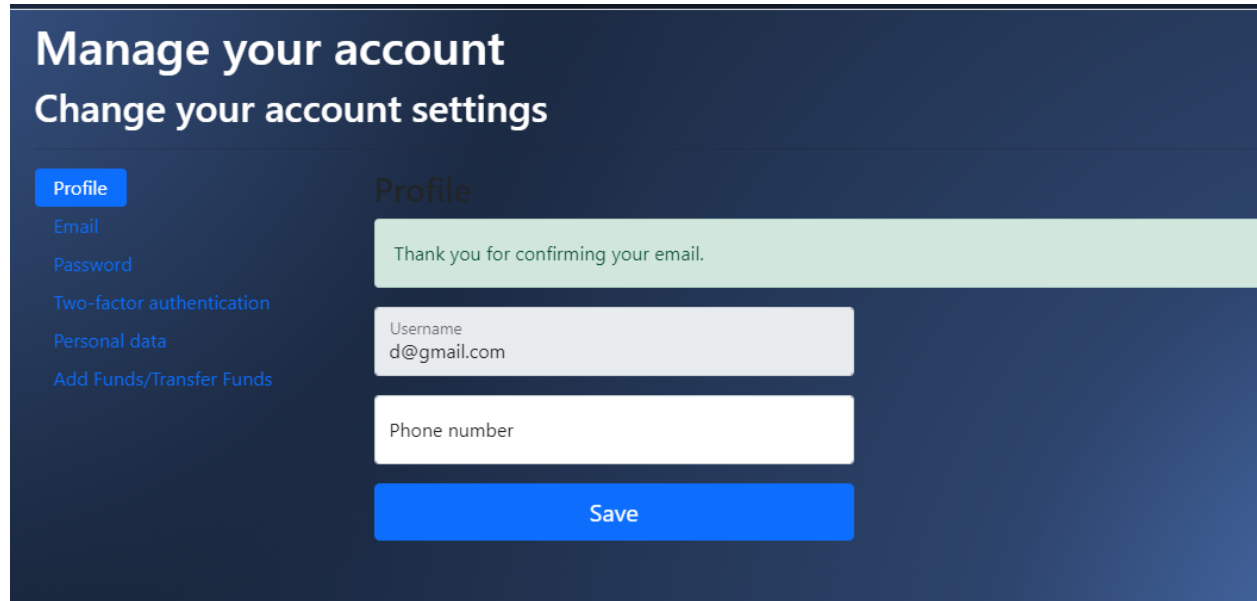
Search Bar

In this screen, the user can search for a game using the search bar. In this example, kick ups has been searched and it displays the kick ups game card for the user.



Account Management Screen

In this screen the user can manage their account by changing their number, email password, enable 2fa and see their personal data and add funds to their balance.



The screenshot displays a mobile application interface for account management. At the top, the title "Manage your account" is followed by the subtitle "Change your account settings". A vertical sidebar on the left contains several menu items: "Profile" (highlighted in blue), "Email", "Password", "Two-factor authentication", "Personal data", and "Add Funds/Transfer Funds". The main content area is titled "Profile" and features a light green confirmation message: "Thank you for confirming your email." Below this, there are two input fields: "Username" with the value "d@gmail.com" and "Phone number". A prominent blue "Save" button is positioned at the bottom of the form.

Verify Account screen

In this screen, in order for users to be able to play casino games, they must verify their account by submitting proof of ID. They can see an example photo as reference and upload their own ID.

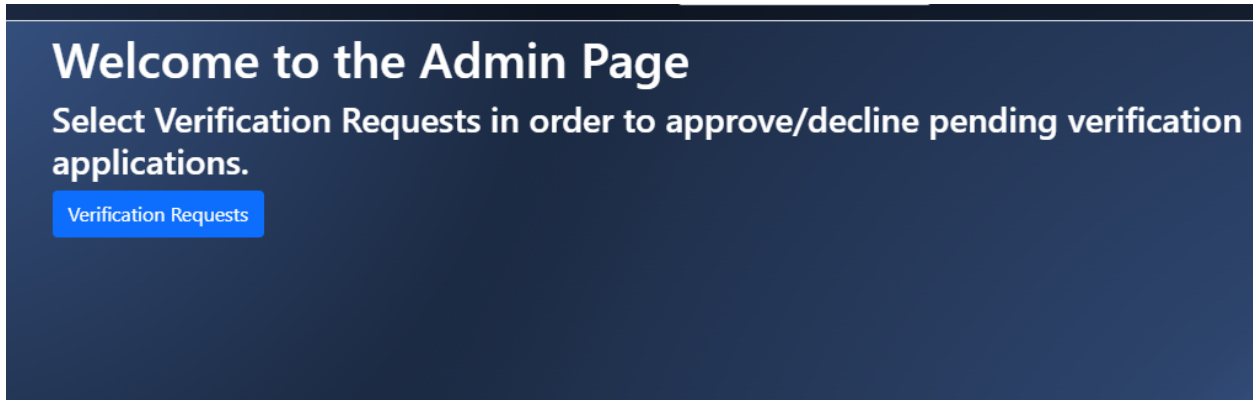
Casino Screen

On this screen, once the user is verified, they can see the casino games available to play. Only users who have been verified by an admin can be allowed to play casino games. To gain entry, users will pay a fee of €5 for entry to the game. The casino will call the same controller the embedded games use and will run on their own components afterwards.



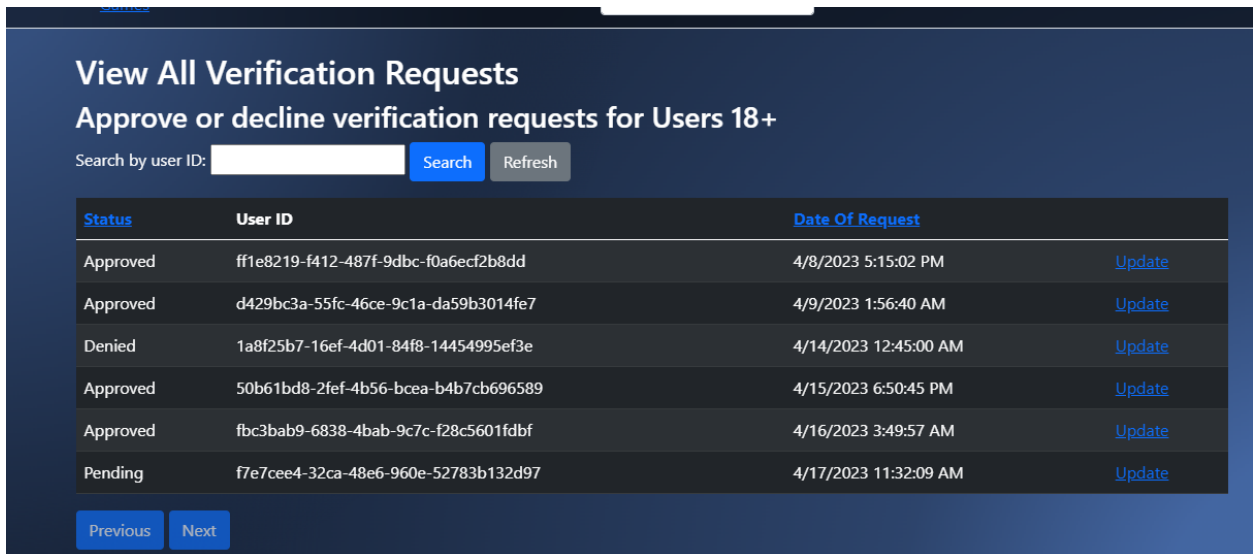
Admin Home Page Screen

Here is the home page of the admin screen. Here Admins can select what task they want to take a look at which in this case is the Verification Request tab.



View Verification Requests Screen

In this screen, the admin user can see the verification requests of users who made a request to have their account verified. The admin can search for a specific user by their User ID which can make it quicker to find them if they have many requests. Admins can see the status of applications and their date of request.



Update Verification Requests


Here the admin user can update the verification request of the user ID they are looking at. Here the admin can choose to decline or approve users if they followed proper verification guidelines.

Update Verification Requests

Accept images that have followed proper guidelines on Verification submission and of legal age in related country.

Verification ID:	2
User ID:	d429bc3a-55fc-46ce-9c1a-da59b3014fe7
Date of Request:	4/9/2023 1:56:40 AM
Current Status:	Approved
Update Status:	<input type="text" value="Approved"/>

Photo ID



Add Funds Screen

Here the user can transfer their earnings from the casino games that's in their balance to their Paypal using the Paypal Payouts SDK. The user enters in their registered paypal account and the amount of the balance they wish to transfer.

Transfer winnings to Paypal

If you have a PayPal account, enter your registered PayPal email and the amount you want to transfer and click 'Transfer Funds'

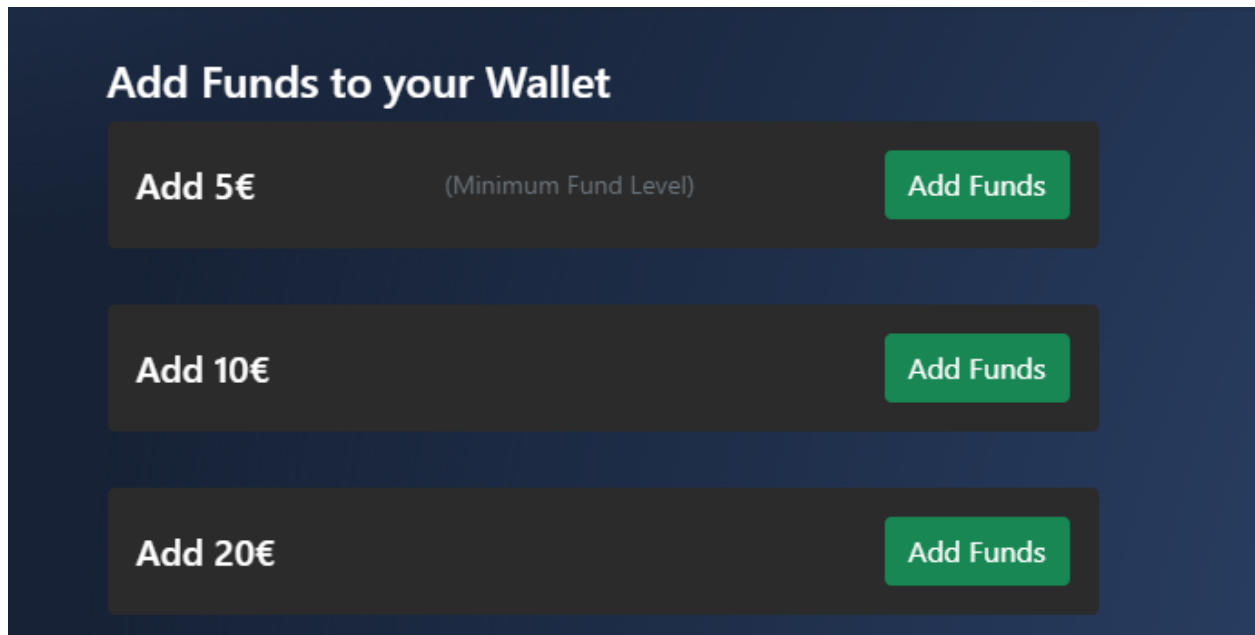
Transfer Balance to PayPal

PayPal Email

Transfer Amount

Add Funds to Wallet

On the same screen, the user can add funds to their balance using stripe API. The user can select between €5, €10, €20 and add the funds. If a user had no funds to play a casino game they would be redirected to this page in order for them to top up their balance.



Challenges Encountered

During the duration of Gamesino's development, a number of issues were faced and resolved that helped shape Gamesino into what it is today.

Cross-Platform Development

One of the considerations for this project was that the Gamesino application will be available to be accessed on mobile phones and computers. Developing for the computer was easy enough to handle as css, html and javascript was made to adapt to the computer screens easily but for mobile phones, a different approach had to be done in regards to the layout of the project . Due to the lack of experience of making content render efficiently for phones, it wasn't possible to fix all of the issues the web app looked like on the phone version. Thankfully, due to Bootstrap and ASP.Net Core , the components used allowed for a more responsive design to the site, so it allowed some elements to resize itself based on screen size.

Casino Games

One of the main functionalities of this project was to be able to gamble in casino games such as slots, roulettes, rock,paper,scissors etc. One of the main issues was getting the relevant games for the casino tab working. I couldn't find good sites to help me implement classic casino games like Slots and Blackjack into the project so that it would give off that proper casino feel to the games.

Since this was the last thing I was working on, I wasn't able to fully implement most of the casino games I had planned.

Learning Outcomes

Technical Aspect of the project

For this project, ASP.net Core was an essential part of the project. Using the MVC design pattern which I studied in my software engineering class gave me greater understanding on how the design works and how they all interacted with each other. It increased my interest in learning more about web development and full stack development since ASP.net Core was coded in C#. This project also helped me learn more about C# since it's being used in my current graduate job and gave me a headstart on how to use this language efficiently.

I was able to learn how to use cloud services for the first time with the cloud databases and hosting my web application on the cloud. Using these technologies gave me a deep understanding into the world of cloud computing. I was able to learn how to properly manage multiple tables and learn how to send data back and forth between the azure cloud services to my web application.

I was able to learn how to use Stripe API's and Paypal's SDKs and API's more efficiently. Using these tools to help implement a payment system into my application gave me a look at how businesses were able to make a smooth checkout for users and guests while keeping the design simple. I was able to gain understanding on how to use stripe's api to link to a shopping cart and how to keep a user's payment secure keeping that layer of security between the user and third parties.

Personal learning outcomes

One of the learning outcomes for me was that I was able to manage the time given to us for this project. With the other courses that had to be completed in the timeframe of this project it allowed me to better manage my time and plan my goals accordingly by achieving certain functionalities only this project over the course of the year.

Project Review

Achieved

Working on this project had its ups and downs but a number of features and functionalities were achieved. The main functionalities of this project were achieved.

- The purchasing of games was achieved since users were able to buy a game using the stripe checkout API.
- Users were able to play their purchased game
- Purchased Games was stored in the user's library
- Users are able to search for games using the search bar
- Users are able to gamble on the website and win money.
- Users are able to see their transaction history
- Verification is implemented in order for users to verify their age
- Admins are able to approve / decline verification requests.
- Users can add funds to their balance
- Users are able to transfer their funds to Paypal.

Not Achieved

Due to the remaining time available, I managed to implement the functionality for this project but in order for that to be possible, I had to sacrifice adding more games, allowing users to add games to a wishlist, a store page of a game that showed more detail than a card.

A number of more security checks should have been done on the user such as a better way to identify a User's age through a better ID System.

Another feature that would have been beneficial to users is to be able to buy a game using their balance from their casino games. This would have opened another door of payment for users and allow them to pay for a game for free.

Reflection

If I was to do this project again, I would most definitely work more on the mobile version side and make it more responsive than it is.

I would also implement all the features that I wanted to include so that would be a full fledged Gaming/Gambling website. I would also improve on the security aspect of the project as that's a huge part of making a website like this.

Regardless of everything, I am happy with the work I put into this project and I'm happy with the result.

Conclusion

Gamesino is a web application that allows users to buy/play games and allows users to gamble. This final report has discussed in detail the application and the Challenges encountered along with the achieved goals with the unachieved goals.

Gamesino is available for use here: <https://gamesino.azurewebsites.net/>

My Source Code: <https://github.com/SamuelDavid60322/GamesPlatform>

Declaration

*I declare that all material in this submission e.g thesis/essay/project/assignment is entirely my/our own work except where duly acknowledged.

*I have cited the sources of all quotations, paraphrases, summaries of information, tables, diagrams or other material; including software and other electronic media in which intellectual property rights may reside.

*I have provided a complete bibliography of all works and sources used in the preparation of this submission.

*I understand that failure to comply with the Institute's regulations governing plagiarism constitutes a serious offence.

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Date : **17-04-23**

