I HAVE TO FLY (ANDROID GAME)

By

Name of the Students	Class	Roll No.
Abhay Rajde	BE-5	32
Deep Ruparel	BE-5	33
Sahil Shah	BE-5	40

Guide
Ms. Swati Gajbhiye
Ms. Sonali Bapte

Department of Information Technology
Shah & Anchor Kutchhi Engineering College, Mumbai

2020-2021

Approval for Project Report for Android Apps Development Lab of semester VII

This project report entitled I Have to Fly (Android Game) by Abhay Rajde, Deep Ruparel, Sahil Shah is approved for semester VII in partial fulfillment of the requirement for the Mobile Application Development of B.E. Engineering.

Examiners

1._____

2._____

Guide

1._____

2._____

List of Figures

Chapter 1 : Introduction

I Have to Fly is an android game made by using Android Studio. The whole game is developed by using Android Studio. It is a simple game that records the highest score, as well as has sound effects imbibed in it. It has no levels, but the highest score is always maintained. There are sound effects for shooting, as well as when the game has ended. It is made for entertainment purpose and will soon be available on the Android play-store.

Before the game starts, we have created a Sign-in page. We have also created a Sign-up page for first time users. To maintain the data of these pages, we have used Firebase. On successfully signing in, the user can also access and get information about the current geo-location.

Chapter 2: Literature Review

In 2016 Xiufeng Shao, Lingling Zhao, Xuemei Liu wrote a paper The Research and Discussion on Android Game Development Curriculum which mainly focuses to provide an important basis for the teaching reform of colleges and universities, can nurture high quality talent on mobile game development rapidly.

In 2019, Matheus G. Cordeiro; Paulo Bruno S. Serafim; Yuri Lenon B. Nogueira; Creto A. Vidal; Joaquim B. Cavalcante Neto published a paper A Minimal Training Strategy to Play Flappy Bird Indefinitely with NEAT whose main focus was to proposes a minimal training strategy to develop autonomous virtual players using the NEAT neuroevolutionary algorithm to evolve an agent capable of playing the Flappy Bird game.

In 2019, Yash Mishra and Vijay Kumawat wrote a paper entitled Performance Analysis of Flappy Bird Playing Agent Using Neural Network and Genetic Algorithm with an aim to develop and study an artificial intelligence based game-playing agent using genetic algorithm and neural networks. Phaser Framework was used to facilitate HTML5 programming for introducing real-life factors like gravity, collision and Synaptic Neural Network library was used to implement neural network so as to avoid creating a neural network from scratch

Chapter 3 : Problem Statement

We intend to create a gaming application for android platform. We will be using android studio to create the application. Our application will be having two parts, one is login page and other is the game itself. The application that we are creating will be compatible with most of the android devices.

Chapter 4: Objectives

- Secure Login - There is a need to avoid access of information to the fraudulent Users.

- Simple user interface - More the simplicity, more it is easy for the user to navigate through the application as most of the user of the application may not be a technical person.

- Real time score Display - The objective is to update the score of the user in real time, and after the game ends, keep the highest score recorded.

- Secure database - Information of user login credentials should be kept secure.

- Sound effects – To create an immersive experience, sound effects are added and they play an important role to serve the basic purpose of the application, that is entertainment.

- Geo-Location – Users should be able to know about his/her current location.

Chapter 5 : Project Flow

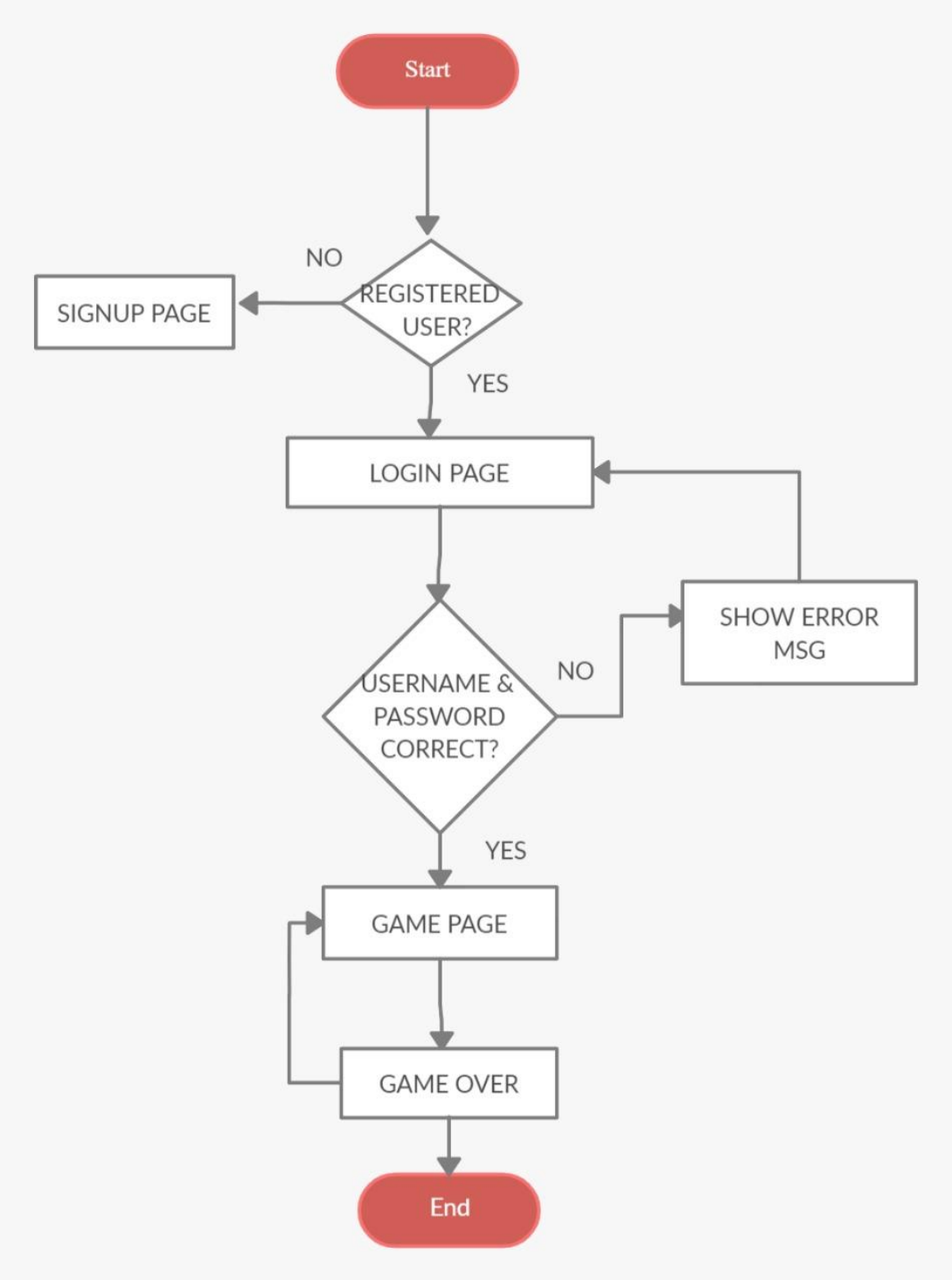

Fig 5.1 Project Flow Diagram

Chapter 6 : Software Requirements

1. **Android Studio:** It is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020.

2. **Firebase:** It is a platform developed by Google for creating mobile and web applications. It was originally an independent company founded in 2011. In 2014, Google acquired the platform and it is now their flagship offering for app development.

Chapter 7 : Implementation

1. **Login Page:** The Login page helps the user to login in and also has an additional option to Sign-up, for first time users. However, for pre-registered or authorized users, they have to provide the corresponding details to be logged in.

Fig:7.1 Login Page

Fig 7.1 Login Page

2. **Signup Page:** If the user has not been registered, the registration is required. Details like email and password are entered by the user and is stored in Firebase Storage. After successful signup, the user is redirected to Login Page.

Fig 7.2 Signup Page

3. **Home Page:** After successful Login, the user is redirected to the home page, where the user can get to know the geo-location and can start playing the game.

Fig 7.3 Home Page

4. **Game Page** - The game page section provides an immersive experience and allows the user to play the game.

Fig 7.4 Game Page

5. **Firebase Realtime Database:** Firebase is secure and easy to use cloud database. It contains the details of the user that is, the email id and password. The firebase is updated by the administration.

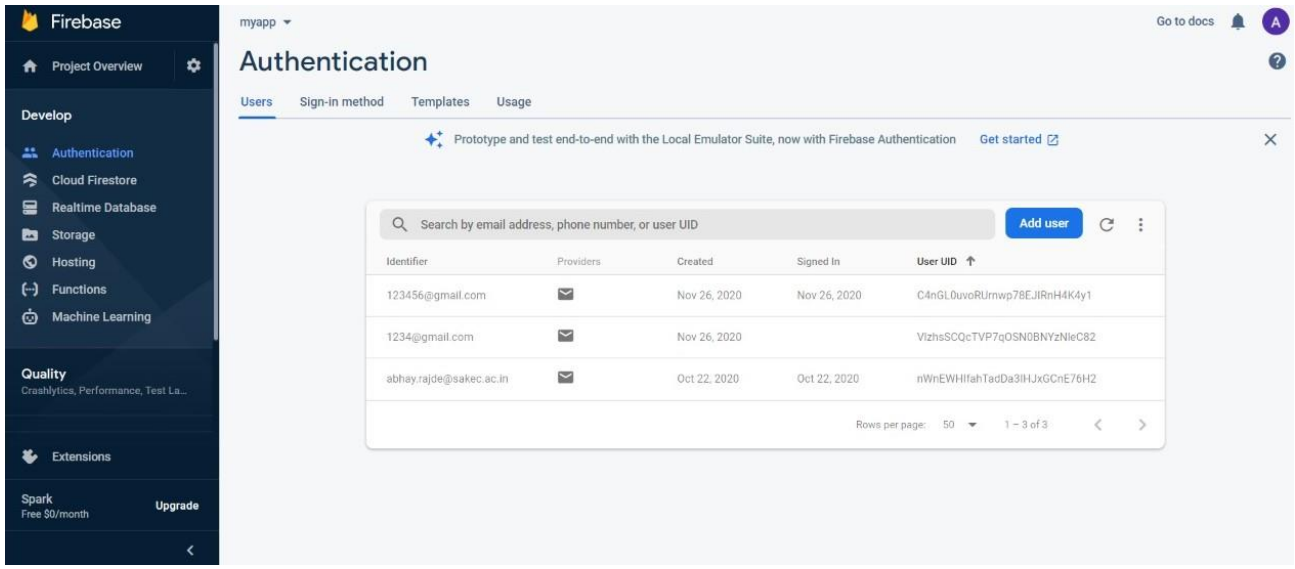

Fig 7.5 Information of User in Firebase Database

Chapter 8 : Conclusion

The Android game was developed successfully, It provides the user an immersive stress free experience. The sound effects are also imbibed to provide the desired and realistic arcade game feel. The scores are updated in real time and the highest score is always recorded, even after the application is closed. Additionally, the home page provides the user their geo-location successfully.

References

[1] The Research and Discussion on Android Game Development Curriculum by Xiufeng Shao, Lingling Zhao, Xuemei Liu in DEStech Transactions on Engineering and Technology Research.

[2] A Minimal Training Strategy to Play Flappy Bird Indefinitely with NEAT by Matheus G. Cordeiro; Paulo Bruno S. Serafim; Yuri Lenon B. Nogueira; Creto A. Vidal; Joaquim B. Cavalcante Neto in 18th Brazilian Symposium on Computer Games and Digital Entertainment in the year 2019.

[3] Performance Analysis of Flappy Bird Playing Agent Using Neural Network and Genetic Algorithm by Yash Mishra and Vijay Kumawat in the book Information, Communication and Computing Technology in the year 2019.