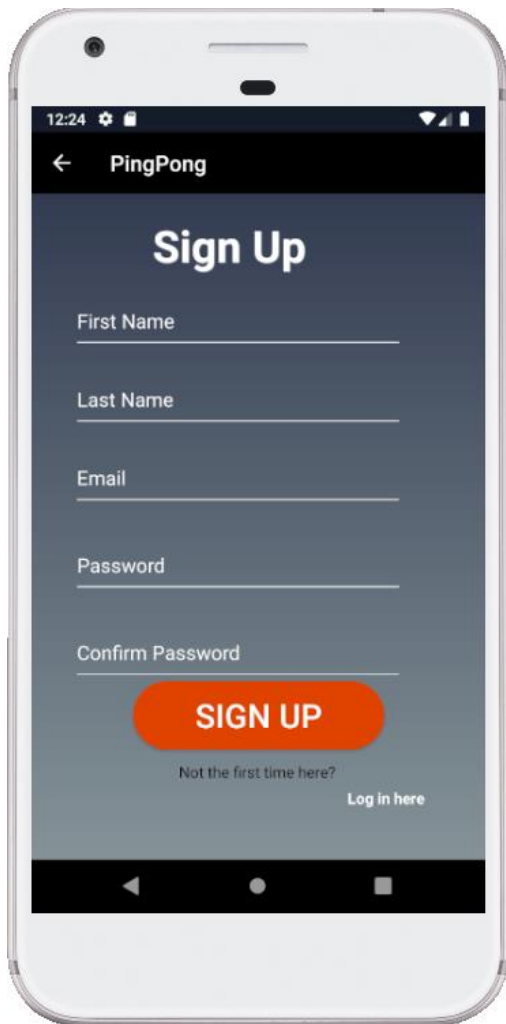


Mobile Application



Login Activity

Upon opening the application, the player is required to input their individual data into a signup page. These fields include:

- First Name
- Last Name
- Email
- Password
- Password Confirmation

There are several parameters that need to be achieved for the user to be able to sign up. Most significantly, none of the fields can be empty. The first name and last name must not have any numbers or special characters (ie ?,!\$). The email and password must not have any spaces in between characters. The password must be eight to sixteen characters, and have at least one lowercase letter, one uppercase letter, one special character and one number. The password confirmation must match up perfectly with the password. After all the above conditions are met, it uses a Firebase Authentication SDK to create a user using the given email and password. After the user signs up, they can login for all subsequent sessions using Firebase method of signing in using the same email and password.

Figure 1: Sign Up Page

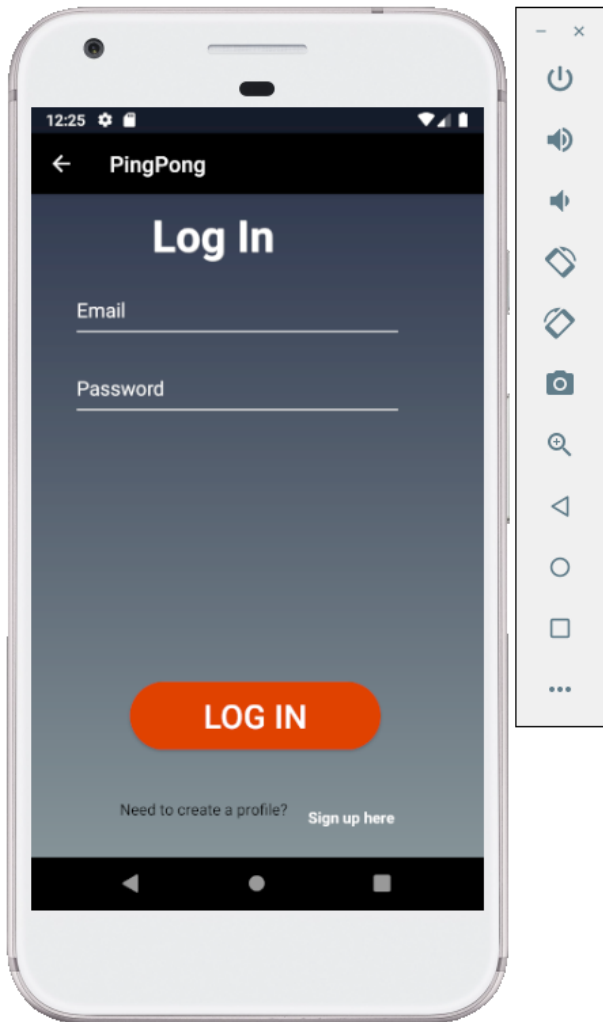


Figure 2: Login Page

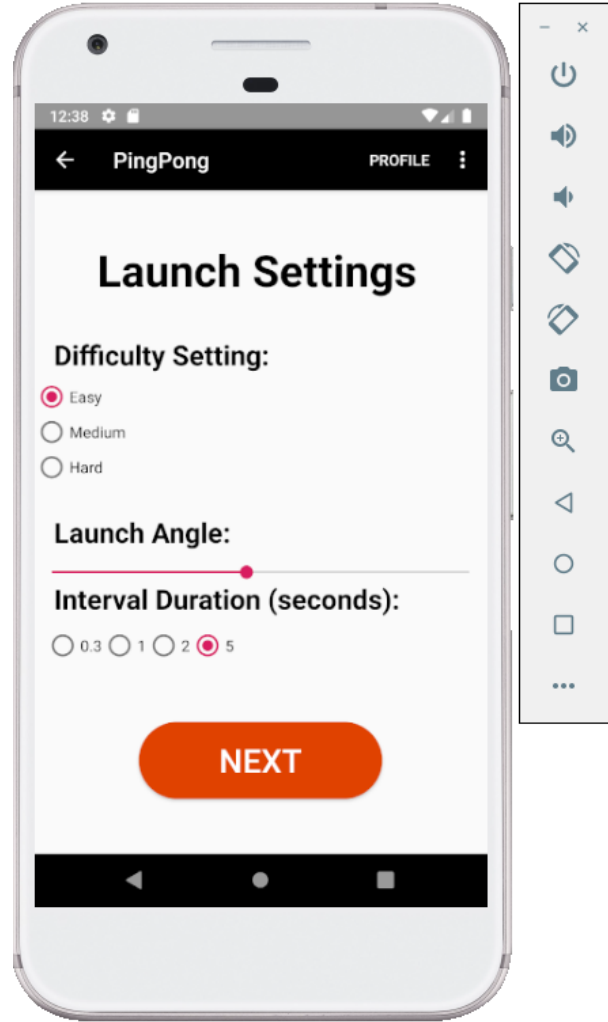


Figure 3: Launch Settings Page

Data Visualization Activity

Once the user logs into the application, they can access a profile page, which displays their full name, email address and a serial number that represents user id generated by Firebase when user is created that denotes what machine the given account is linked to. The profile screen will also let the users access their play settings from the last 30 play sessions which will be stored in the Firebase Cloud Firestore .

Action Control Activity

Before the user enters their play session, they can select from a range of play settings. These settings include:

- Difficulty: easy, medium and hard difficulties are selectable, which impact both the launch speed, the range of elevations and type or variation of shots the ping pong balls launch at the user
- Angle: the user can control the horizontal launch angle of the ball from a neutral center position to a 25 degree range, both left and right of the center.
- Launch Interval: the user can control the time interval the balls launch between one another. They can choose between 0.3, 1, 2 and 5 seconds.

If the user does not choose any of their individual settings, they are set to default, which consists of an easy difficulty, a 10-degree launch angle, and 5 second launch interval. Once the user chooses their settings, they can launch their play session in another screen. When launched, the application will use a Firebase Real Time Database to send the values to the machine of the play session. If the user wants to change their settings, they need to press the stop button so they can re-access the settings page. They are then able to restart the play session once everything is adjusted to their liking.

Link to our Updated Mobile Application :

<https://github.com/Warris-Sohi/SmartTennisBallMachine/tree/master/Mobile%20App/PiPo>

This is the link to our **Updated Report containing the present code in appendix 7.2:**

<https://github.com/Warris-Sohi/SmartTennisBallMachine/blob/master/Documentation/ReportTemplate2019-12-19.docx>

Grading for this milestone:

/1 Completed: Survey regarding substantial completion of this term
 /1 Participated: Online session
 /2 Login activity
 /2 Data visualization activity
 /2 Action control activity
 /1 Modified Code Files in Appendix
 /1 Link to Complete Code in Repository