Final Project

Mobile Apps Development

Revision 02

Objectives

The objectives of this project are to:

- Create a random sequence based game.
- Use the accelerometer to play the game
- Use a database to save and show the top five highest names/scores

Deliverables

There are two deliverables for this project:

1. A **pdf report** containing screen shots of the four main screens/activities, the link to the git repository for the code for the project and a three part conclusion (State how far you got, state the issues overcome *and the solutions found*, and finally a statement of what is next for you with mobile apps.
2. A 3**0-60 second video** showing the APP running on your emulator or phone. This should clearly show :
   - The first activity showing the random sequence
   - The second activity playing the game on the accelerometer
   - The third activity showing the HI Scores in the database.

Upload these deliverables in the place for the final project in moodle by the deadline: **23:59 on 23rd Dec 2020**. There is no extension to this deadline, unless by prior agreement with lecturer.

The Requirements

The app **must** implement the following requirements:

A. There must be four main screens in the app:
   1. *Sequence Screen:* A primary display screen which displays the random sequence and has a Play button.
   2. *Play Screen:* A second play mode screen where the user plays the game by tilting the phone (accelerometer)
   3. *Game over screen:* A third 'Game Over' screen with a button to display highest scores so far
   4. *Hi Score Screen*: A fourth high score screen, displaying the top five scores / names.

B. All four screens should be in landscape mode. It is intended to play this app in landscape mode only. There is no need for portrait mode.

C. The look and feel / theme colours of the app is completely up to the designer.

D. On running the app, the user is shown the Sequence Screen (see example below) and presses Play button when ready.

E. The Sequence screen must display sequence of four random colours initially. *Each time the game is successfully played, the sequence should increase by two more colours. Second round should display 6 colours in a random sequence, third round should display 8, etc.*

F. After the sequence has displayed, the user is automatically brought to the Play screen. The user attempts to tilt the phone North, South, East or West to match the sequence of colours.

- If the sequence is matched correctly, the score is set to 4 and the user is brought back to the sequence screen. User is shown a sequence of 6 colours and goes to step F again.
- If the sequence is not matched, a GAME OVER screen is shown

G. The user will have a final score. If this is one of the top five scores in the database, the user should be prompted for their name. Their name and score is entered into the database.

H. A high score button, once pressed will show the top 5 highest scores in the database on the Hi Score Screen. The High Score button can be placed on the GameOver screen or wherever is deemed appropriate.

I. The GameOver and HiScore screens will have a button to play again. This should display screen 1 again.

Important Notes

1. You can implement the sequence screen with any images or widgets you like as long as there are four clear options/colours. For example, you can use four buttons with difference colours. Remember, the buttons/images will have to light up somehow to show the sequence,

2. The play screen must implement an accelerometer. You can use a touch button mode if you wish as an option. *If you decide to not implement an accelerometer motion play mode and only use touch buttons, the project will be marked out of an maximum of 60%, not 100%,*

3. A database is required to store the high scores.

4. It is highly recommended that you prototype the individual parts of this project before building the final version.

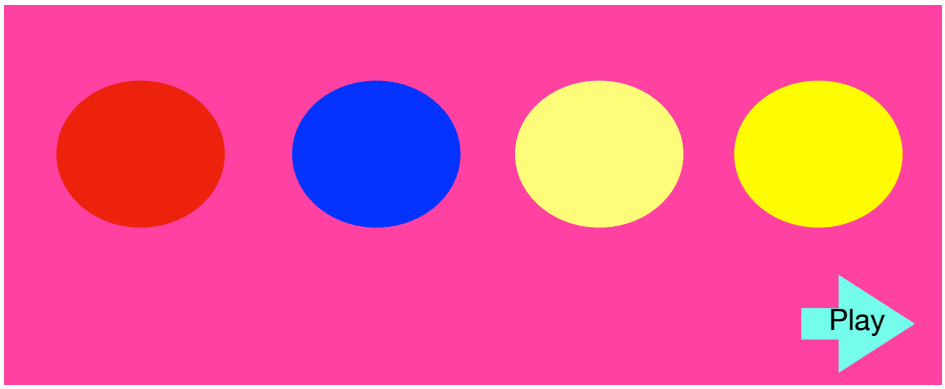
Marking Scheme

There are 100 marks for this project, which is worth 30% of the overall module. They are awarded as followsL

- Implementation of sequence screen - 20 marks
  - Showing the colours sequences correctly each round
- Implementation of the play screen (accelerometer) - 40 marks
- Implementation of the gameover and hi score screens - 10 marks
- Implementation of the database/hi score queries/insert - 30 marks.

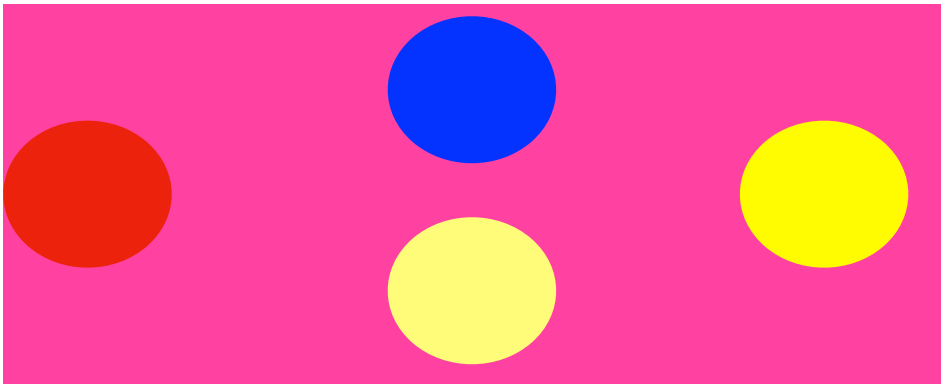
Mockups/Wireframes

Idea for first screen



When Play is pressed, the random sequence is shown and the second screen automatically displays.

Idea for second screen



Tilt the phone in the sequence that was shown on the first screen.

If you match the sequence - you win that round.

If you do not get the match, the game is over and the you can view the hi scores.

Idea for third screen

If the score was in the top five scores, the user should be prompted for their name.

Idea for final screen

The final screen should show the top five highest scores and should have a button to return to the first screen.