Student ID	
Machine Number	

Sri Lanka Institute of Information Technology

B.Sc. Honours Degree in Information Technology

Specialized in Information Technology
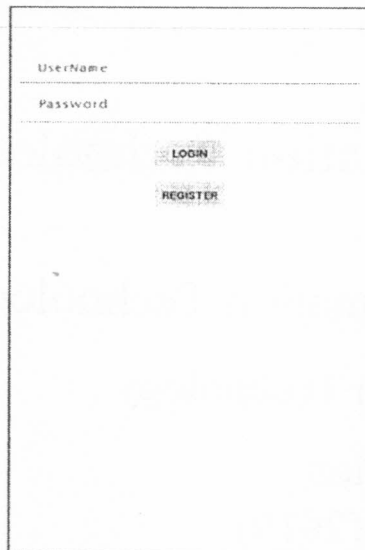
Final Examination
Year 2, Semester 2 (2019)
Paper B

IT2010 – Mobile Application Development
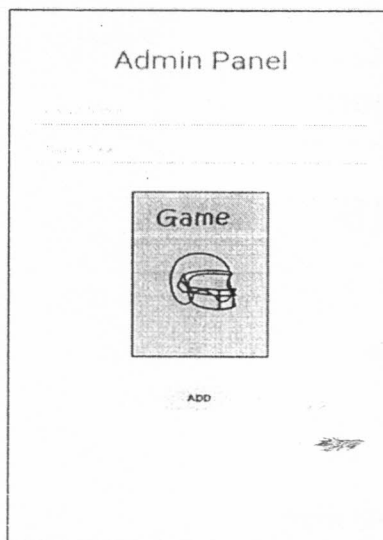
Duration: 2 Hours

October 2019

Instructions to Candidates:

- ◆ This paper has 7 questions.
- ◆ Answer all questions.
- ◆ The total marks for the paper is 100.
- ◆ This paper contains 6 pages, including the cover page.
- ◆ Electronic devices capable of storing and retrieving text, including calculators and mobile phones are not allowed.
- ◆ Students must **return the paper** at the end of the exam.
- ◆ **Project name** must be **student ID** number.
- ◆ **Only the submitted answer will be graded.**
- ◆ **Accessing social media, email and sharing files over the internet is prohibited.**

Question 01 – Activity Design   (22 marks)

a) Create an Activity called **Main** and design the given layout.   (3 marks)

```
UserName
Password

          LOGIN
         REGISTER
```

b) Create an Activity called **AddGame** and design the given layout. Insert the provided image in the desktop location as a common image for all games.   (5 marks)

```
        Admin Panel


        Game


        ADD
```

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c) Create an Activity called **GameList** and design the given layout. (2 marks)

```
                  Games
      Item 1
      Sub Item 1

      Item 2
      Sub Item 2

      Item 3
      Sub Item 3

      Item 4
      Sub Item 4

      Item 5
      Sub Item 5

      Item 6
      Sub Item 6

      Item 7
      Sub Item 7

      Item 8
      Sub Item 8

      Item 9
      Sub Item 9

      Item 10
```

d) Create an Activity called **GameOverview** and design the given layout. (7 marks)

```
                TextView

      Rate

      ●———•———•———•———•———•

      Comments

      ------------------------------------------

                   SUBMIT

      Current Rating
            0
      Comments

      Item 1
      Sub Item 1

      Item 2
      Sub Item 2

      Item 3
      Sub Item 3
```

e) Use string.xml file to include all string values / messages / labels. (5 marks)

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Question 02 – Create the Database (10 marks)

a) Create a class named **DatabaseMaster** to represent the tables and define column names as constant attributes of the class. Implement the class default constructor. (2 marks)

b) Define an inner class called **Users** to represent *users* table and define following columns.
(3 marks)

> Table name – String
> Username – String
> Password – String
> UserType – String

c) Define an inner class called **Game** to represent *games* table and define following columns.
(2 marks)

> Table name – String
> Game name – String
> Game Year – Integer

d) Define an inner class called **Comments** to represent *comments* table and define following columns. (3 marks)

> Table name – String
> Game name – String
> Game rating – Integer
> Game comments – String

Question 03 – DBHandler Class (48 marks)

a) Create a java class called **DBHandler** and override the onCreate() to create the above SQLite tables. (8 marks)

b) Implement a method called registerUser() to add a new user to the users table. Assume that the user name and the password to be used as parameters. (4 marks)

c) Implement a method called loginUser() to login to the system and do the following.
(12 marks)

    (i)   If the user gives user name as "admin", it will be an admin login.
    (ii)   Then this user will able to navigate to the **AddGame** screen.
    (iii)   If the user gives another user name and password which have already registered to the system, the user will able to navigate to the **GameList** screen.
    (iv)   If the entered user name and password are not matching or not existing in the users table, it should be displayed a "Login failed" message including the particular reason.

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d) Create three lists for games, years and comments, and generate get methods for all of them.

(3 marks)

e) Implement a method called `addGame()` to store game details. This method must return a Boolean value based on the insert success or failure.   (5 marks)

f) Implement a method called `viewGames()` to retrieve all games' names stored in the games table.   (5 marks)

g) Implement a method called `insertComments()` to add comments' details to the comments table.   (5 marks)

h) Implement a method called `viewComments()` to retrieve all comments stored in the comments table.   (6 marks)

Question 04 – Implementation of Activities   (20 marks)

Implement the **Main Activity** as follows.

a) Call to `registerUser()` method implemented in `DBHandler` class from the `onClick` event of the Register button.   (2 marks)

b) Call to `loginUser()` method implemented in `DBHandler` class from the `onClick` event of the Login button.   (2 marks)
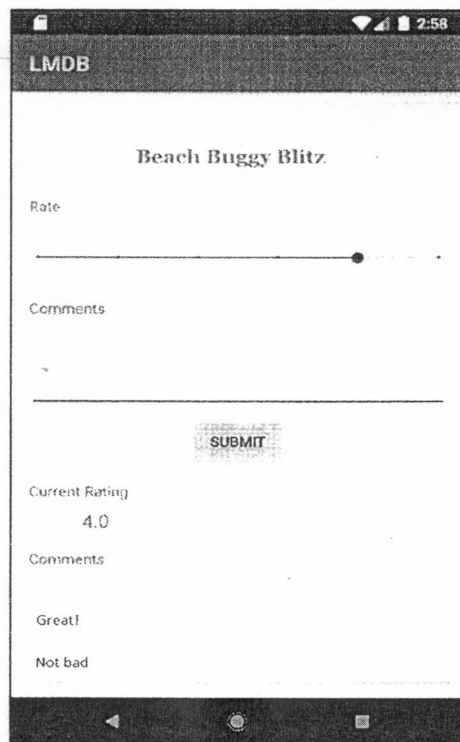
Implement the **AddGame Activity** as follows.

c) Call to `addGame()` method implemented in `DBHandler` class from the `onClick` event of the Add button.   (2 marks)

d) Display a message indicating success or failure of adding game details.   (1 mark)

Implement the **GameList Activity** as follows.

e) Override the `onCreate()` and load game names into the games list.   (2 marks)

f) Implement list item click event for a selected item and pass the game name to GameOverview class while displaying the particular screen.   (3 marks)

Implement the **GameOverview Activity** as follows to have an output likes below.

g) Override `onCreate()` and implement the code to load available comments to the list view in the bottom of the screen and display the average rate as given in the above sample screen.

(5 marks)

h) Call to `insertComment()` method implemented in `DBHandler` class from the `onClick` event of the Submit button and send the rating and comment input by the user with the game name. (2 marks)

i) Display a message indicating success or failure of adding review (comment) details.

(1 mark)

End of the Question Paper