



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 A

IT2010 – Mobile Application Development

Duration: 2 Hours

October 2019

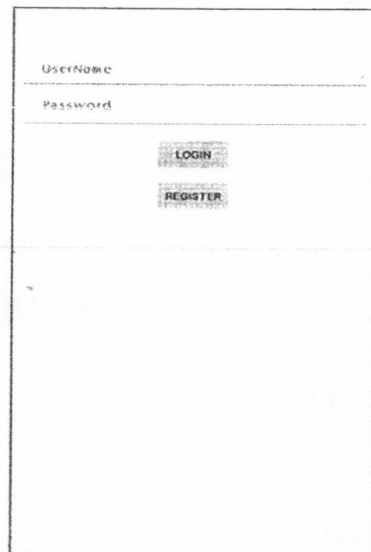
Instructions to Candidates:

- ◆ 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.

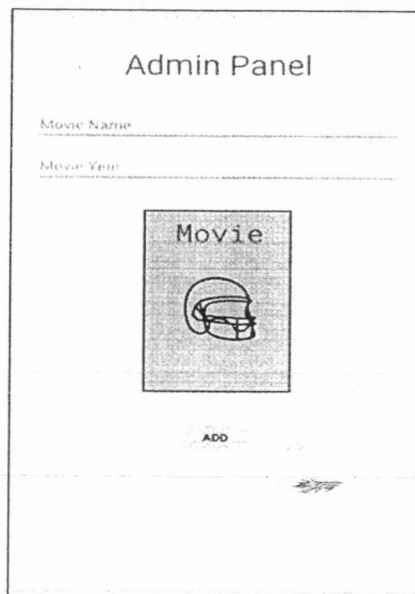
(3 marks)



A vertical rectangular layout for a login/register screen. It contains two text input fields at the top, labeled 'UserName' and 'Password'. Below these fields are two buttons: 'LOGIN' and 'REGISTER'.

b) Create an Activity called **AddMovie** and design the given layout. Insert the provided image in the desktop location as a common image for all movies.

(5 marks)



A vertical rectangular layout for an 'Admin Panel'. At the top is the title 'Admin Panel'. Below it are two text input fields labeled 'Movie Name' and 'Movie Year'. In the center is a square image placeholder with the word 'Movie' at the top and a drawing of a movie camera below it. At the bottom is an 'ADD' button.

c) Create an Activity called **MovieList** and design the given layout.

(2 marks)

The screenshot shows an Android activity titled "Movies". It contains a vertical list of 10 items. Each item consists of a main title and a subtitle. The items are:

- 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 **MovieOverview** and design the given layout.

(7 marks)

The screenshot shows an Android activity titled "TextView". It contains the following elements:

- A "Rate" label above a horizontal rating bar with 5 dots.
- A "Comments" label above a text input area.
- A "SUBMIT" button.
- A "Current Rating" label above a text input field showing the value "0".
- A "Comments" label above a text input field.
- A list of 3 items, each with a main title and a subtitle:
  - 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)

**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 **Movie** to represent *movies* table and define following columns. (2 marks)

Table name – String  
 Movie name – String  
 Movie Year – Integer

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

Table name – String  
 Movie name – String  
 Movie rating – Integer  
 Movie 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 **AddMovie** 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 **MovieList** screen.
- (iv) If the entered user name and password are not matching or not existing in the users table, it should be displayed as “Login failed” message including the particular reason.

- d) Create three lists for movies, years and comments, and generate get methods for all of them. (3 marks)
- e) Implement a method called `addMovie()` to store movie details. This method must return a Boolean value based on the insert success or failure. (5 marks)
- f) Implement a method called `viewMovies()` to retrieve all movies' names stored in the movies 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)

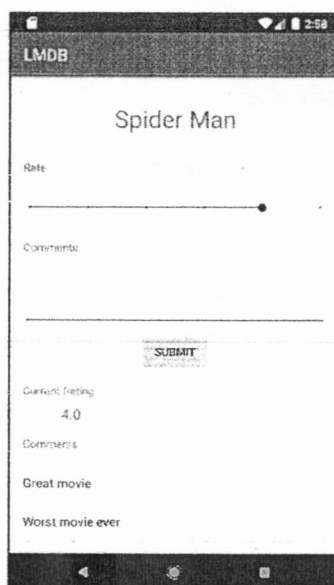
Implement the **AddMovie Activity** as follows.

- c) Call to `addMovie()` 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 movie details. (1 mark)

Implement the **MovieList Activity** as follows.

- e) Override the `onCreate()` and load movie names into the movie list. (2 marks)
- f) Implement list item click event for a selected item and pass the movie name to `MovieOverview` class while displaying the particular screen. (3 marks)

Implement the **MovieOverview 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 movie name. (2 marks)
- i) Display a message indicating success or failure of adding review (comment) details. (1 mark)

End of the Question Paper