



Sri Lanka Institute of Information Technology

B.Sc. Honours Degree in Information Technology

Specialized in Software Engineering

Final Examination
Year 2, Semester 2 (2022)

IT2010 – Mobile Application Development

Duration: 2 Hours

November 2022

Instructions to Candidates:

- ◆ This paper has 4 questions.
- ◆ The total mark for the paper is 100%.
- ◆ This paper contains 8 pages, including the cover page.
- ◆ Refer to the Netexam images if the images given in the paper is not clear.

Question 01**(15 marks)**

- a) List 3 reasons why companies have mobile applications instead of depending on web or desktop applications. (3 Marks)
- b) Describe what is mobile application development. (3 Marks)
- c) List 3 features of mobile applications. (3 Marks)
- d) List 3 reasons for mobile application failures. (3 Marks)
- e) List 3 factors that you should consider before you start developing a mobile application. (3 Marks)

Question 02**(15 marks)**

- a) Identify the difference between the terms UI and UX (2 Marks)
- b) Criticize the useability aspects of the given user interface (3 Marks)

LOG IN

E-mail adress

Password

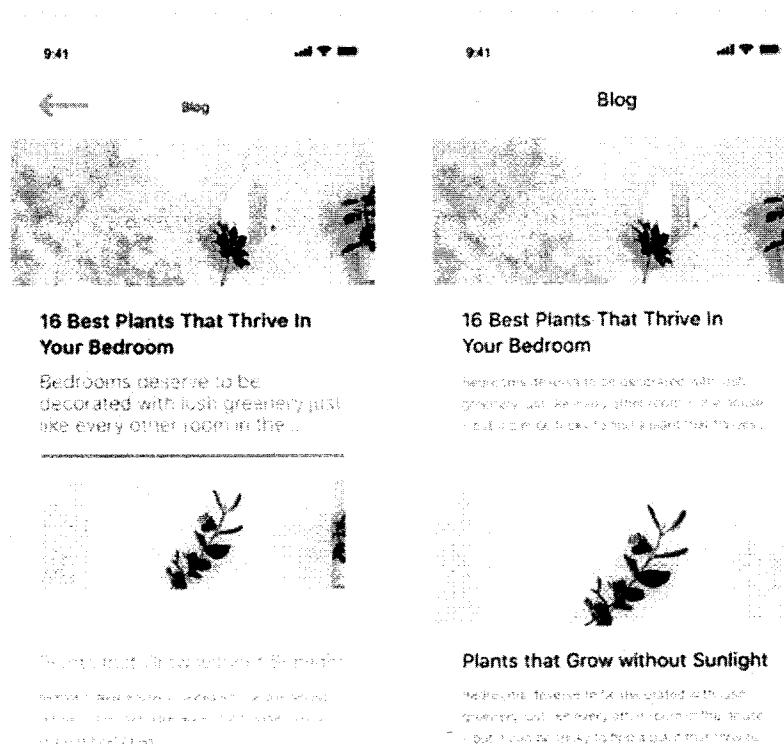
LOGIN ME

SIGN UP

FORGOT PASSWORD?

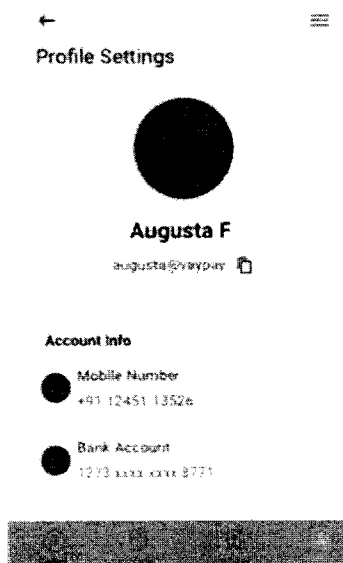
- c) Look at the mobile user interfaces given below. Justify why the right-hand side user interface is a better UI than the left side user interface.

(3 Marks)



- d) Recommend 3 improvements that can be done to increase the usability of the below user interface.

(3 Marks)

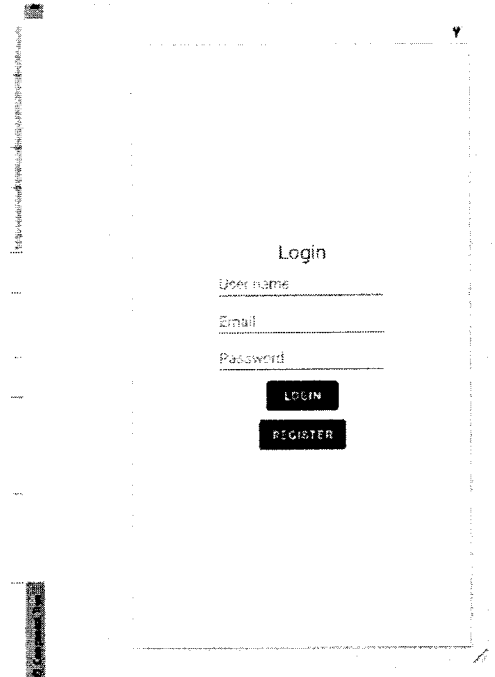


- e) Identify 2 issues in the following user interface and recommend the changes that can improve the usability.

(4 Marks)

```
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Login"
    android:textSize="24sp"
    app:layout_constraintBottom_toTopOf="@+id/editTextTextPersonName"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.5"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_chainStyle="packed" />

<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="User name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toTopOf="@+id/editTextTextPersonName2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.5"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
```



Question 03

(30 marks)

The “Fresh Juices” Juice bar is expanding their business. Owner plans to introduce an Android Application to use as a menu. Customers can download the app from the Google play store and create an account. This allows customers to order fruit juice, rate the juices, do the payment, and see the purchase history.

Following are the application features belonging to the user type

- Admin
 - Can add/edit/delete fruit Juices
 - See Customer feedback
 - Reply to customer feedbacks
 - View all the purchases
- User
 - Create an account
 - Purchase fruit juice
 - Rate and add feedback to purchased Juices
 - View Purchase history
 - Add fruit juices to favorites

- a) Construct below entity diagrams with the relevant properties and methods for the above scenario (10 Marks)

User

FruitJuice

Payment

- b) Design all the activities using the listed views below. (Note that you can write down the activity name and list the views. List them according to how they appear on the screen top to bottom) (10 Marks)

Views
TextView EditText Button RadioGroup RadioButton ToggleButton CheckBox RatingBar Spinner ScrollView RecyclerView Layout (This can be used to determine any layout)

Example:

1. Login Activity

- a. TextView – Login
- b. EditText – username
- c. EditText – password
- d. Button – Login
- e. Button – Register

- c) Formulate the navigation from activity to another activity. You may list the navigation as shown in the example.

(10 Marks)

Example:

1. Click Register Button to navigate from Login Activity to Register Activity

Question 04

(40 marks)

Write the code snippets to the following Questions. Consider the scenario in Question 03.

- a) MainActivity will be developed as the login Activity. RegisterActivity will be loaded after clicking the register button. User will be navigated to the correct profile after successful login
 1. Construct the code snippet for the Register Button Click (2 Marks)
 2. Construct the code snippet for the Login Button click event. Note that you need to only consider the admin login. (Username: "Admin", Password: "admin@123"). (4 Marks)
 3. Write the code snippet that will display a Toast Message to the admin when the password is wrong. (Implement the relevant logic as well) (4 Marks)

- b) Refer to the given code in the Netexam and the UI below and write the answers for the following questions to implement the database operations.

Register

User Name

Email

Password

Re-type Password

REGISTER

CANCEL

1. Construct a class to hold the properties of the user. (4 Marks)
2. Construct the relevant class to create the structure of the user data table by implementing BaseColumns interface. (5 Marks)
3. Construct the database operations to add user details into the database using the SQLiteOpenHelper class. (6 Marks)

- c) Refer to the given code in the Netexam and the UI below and write the answers for the following questions.

Final Exam Sample Project 2022S2

Juices

Apple Juice
Mango Juice
Papaya Juice
Orange Juice
Pomegranate Juice

VIEW JUICE

ADD JUICE

1. Once the Admin login to the app, above user interface will appear. Construct the code snippet that will load the different fragments according to the relevant button click event.
(4 Marks)
2. To display the Juices in the View Juices Fragment, RecyclerView is used. Construct the code snippet related to the Adapter Class.
(6 Marks)
3. Construct the code snippet that will initiate the RecyclerView in the relevant fragment.
(5 Marks)