

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**

**Department of Computer Science and Engineering (CSE)**

**FINAL SEMESTER EXAMINATION**

**SUMMER SEMESTER, 2019-2020**

**DURATION: 1.5 Hours**

**FULL MARKS: 75**

**CSE 4643: Mobile Application Development**

**Programmable calculators are not allowed. Do not write anything on the question paper.**

There are **3 (three)** questions. Answer all **3 (three)** of them.

Figures in the right margin indicate marks.

1. a) “User must grant Dangerous permissions at install time” – this statement is applicable for which Android API/Version and explain the changes to permissions that were brought about post this Android API period. 6
- b) An app named **“koala”** is a personalized workout application. It contains various workout related features such as Cardio, Yoga, Running, Endurance and Core strengthening exercises. Besides this, there is provision for taking body transformation pictures and uploading them in the app’s home page or external storage. This app keeps records of the users’ daily workout routines and lays out a plan for achieving goals within a specific time frame. It also notifies you if you missed a workout session and gives you special awards based on your workout intensity. 15

Write a Java Code requesting various Permissions (by yourself method) for this app.

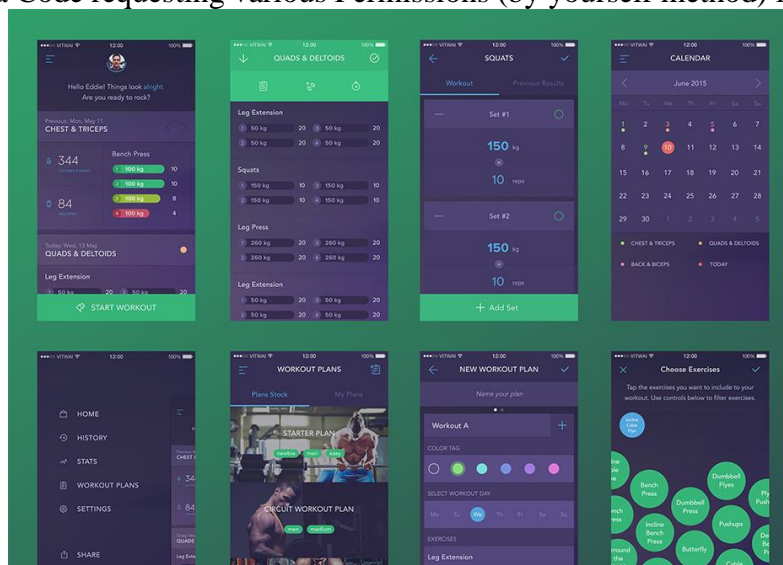


Fig1: Koala App user interface

- c) Briefly mention what are the advantages of Mobile Cloud Computing for Mobile Users. 4
2. a) Is it suitable to use App Specific storage for storing pictures? Give your opinion. 4
  - b) You have an app named **“Hazard”** which you developed by yourself. This app has a special button which generates a file **“Dumdum”**. You want to store a cryptic message in this file whenever you click the button. Write the Java codes for the following: 15
    - i) Store the string **“Your\_ID\_Number has clicked the button at the\_current\_time”** in your file **“Dumdum”**. For instance, **“154419 has clicked the button at 9:37 PM”**. Assume, you have a string **‘time’** which has the current time.
    - ii) Access the file **“Dumdum”** and check if the file contains the string you stored. If the match is found then print the matched string in the **console** or else print **“Match not found”**.

- c) What are the different MediaStore types? Briefly explain the directories used by them for storing media files. **6**

3. a) Answer the following questions.

i) “The data delay or sampling rate of Sensor Events should be set at maximum capability” – Justify this statement. **3**

ii) Why should you unregister Sensor Event Listener? **2**

b) Two entities named “**User**” and “**Playlist**” of the **Room Database** is provided. These entities represent the following tables in the database as shown in Fig 2.1 and 2.2. A Data Access Object (DAO) as **MyUserPlaylist** is defined for this database. Using the Room Components write the following Java codes.

User
<ul style="list-style-type: none"><li>• userId (primary key)</li><li>• f_name (first name)</li><li>• l_name (last name)</li><li>• age</li></ul>

Fig 2.1: User Entity

Playlist
<ul style="list-style-type: none"><li>• playlistId (primary key)</li><li>• userCreatorId (same as userId)</li><li>• playlistName</li></ul>

Fig 2.2: Playlist Entity

i) Create the Entity Class for User and Playlist separately. **3**

ii) Write a DAO query for displaying the users who are **older than 20**. **3**

iii) Write a query in the DAO for displaying the users whose **playlistName = “Nirvana”**. **4**

iv) Write a DAO query for displaying userId, f\_name, age, playlistId and playlistName whose **age is greater than the average age**. **6**

c) What are the methods in Sensor Class for accessing different Sensor Capabilities? Briefly explain them. **4**