



COMSATS UNIVERSITY ISLAMABAD (CUI)

DEPARTMENT OF COMPUTER SCIENCE
FINAL-TERM EXAMINATION SPRING -2025
BS (CS & SE)– VI & VII SEMESTER

Course: CSC 303 Mobile Application Development

Instructor: Qanetah Ahmed, Shujat Hussain

Maximum Marks: 50

Dated: 26 June, 2025

Time Allowed:-8:30AM – 11:30AM

- All questions are self-explanatory and require no further explanations during exam time.
- Make sure that you have signed the attendance sheet before leaving the examination room.
- Return the question paper along with the answer sheet.
- Attempt all questions.

(CLO – 1: Apply Flutter/DART concepts to develop mobile application user interfaces, BT-3)

Q.# 1.

[5+5=10 Marks]

No need to mention any libraries, assume all are present

- a) After a splash screen (no need to write splash screen code) the user is automatically taken to the **home screen** that shows pet rows with names and pictures. When a user taps on a pet row, they are **navigated** to a detailed profile page (with the name of the pet) that shows more pictures, a fun fact and an "Adopt Me" button.
- b) A campus navigation system that helps new students find buildings (e.g., library, cafeteria or admin block). As part of the onboarding experience, **the app should display the users last known location on a Google map** when they open the application. (Assume every instance is connected, just pen down the specific code.) (If hard coded values are used for LatLng, some marks will be deducted.)

(CLO –2: Construct attractive front-end for mobile applications using latest technologies, BT-6)

Q.#2.

[5+5+5+5 = 20 Marks]

No need to mention libraries, start your code from the respective class or Scaffold

- a) Design a registration screen using Flutter where users can enter their **full name**, **email address**, **favorite book genre** and **agree to terms and conditions (checkbox)**. You must use Flutter's **Form** widget to manage validation and input fields and ensure that the form only submits when fields are valid. (Agree to terms is a compulsory field as well as email address)
- b) Design a dashboard screen display a **Card widget** that includes a title ("Switch Theme") and a **button labeled "Toggle Theme"**. When the user taps/clicks this button the app's theme should switch between **light and dark mode**. (Assuming the theme is light by default)
- c) Design and develop a main screen in which a row of **emoji Icons** (happy, sad, angry, etc.) each representing a mood is displayed. Wrap each emoji in a **gesture widget** so that when a user **taps on** an emoji some relevant text should pop up on the screen w.r.t the color of mood of the emoji (the color of the text). For example yellow for happy, blue for sad, red for angry and so on.

- d) Design and develop a screen that displays a list of contacts using **ListView.builder** where each contact is shown inside a **Card widget**. Each card should include the contact's name in bold, their phone number below it, a circular avatar displaying an image and a "Call" button on the right side. When the user taps the "Call" button, the app should navigate to a new screen labeled "Calling Page"

(CLO -3: Develop backend for mobile applications using modern technologies, BT-6)

```

glossary
├─ title: "example glossary"
├─ GlossDiv
│   └─ title: "5"
│       └─ GlossList
│           └─ GlossEntry
│               └─ ID: "SGML"
│                   └─ SortAs: "SGML"
│                       └─ GlossTerm: "Standard Generalized Markup Language"
│                           └─ Acronym: "SGML"
│                               └─ Abbrev: "ISO 8879:1986"
│                                   └─ GlossDef
│                                       └─ para: "A meta-markup language, used to create markup languages such as DocBook."
│                                           └─ GlossSeeAlso
│                                               └─ 0: "GML"
│                                                   └─ 1: "XML"
│                                                       └─ GlossSee: "markup"

```

[4+4+4+4+4 = 20 Marks]

Q.#3.

No need to mention any libraries, assume all are present

The database hierarchy is structured under a root node named glossary, where each entity/attribute is stored with common text. Each record contains the fields as it is wrapped like a parent-child hierarchy. Some of the more obvious attributes are title, ID. The hierarchy is mentioned above. Define **firebase real-time DB instance** first and then proceed. Develop a screen in flutter having some **text input area (for data insertion)** and **text retrieval area (for viewing retrieved data)** along with **4 buttons** for the following **CRUD operations**.

- NoSQL add query using Firebase real-time method to create a new attribute called "ID" under GlossDiv.
- NoSQL retrieve query where you have to fetch the GlossSeeAlso (both attributes underneath it as well, as a whole object).
- NoSQL update query, update the GlossSee value from "markup" to "markdown" using Firebase.
- NoSQL functionality of Firebase, delete the para property of GlossDef

The code of the queries must be present behind their respective button/s.

*******BEST OF LUCK*******