



COMSATS UNIVERSITY ISLAMABAD (CUI)

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

Course: CSC 303 Mobile Application Development

Instructor: Qanetah Ahmed, Shujat Hussain

Maximum Marks: 30

Dated: 17th April, 2025

Time Allowed: 8:30AM-10:00AM

- 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)
[5+5=10 Marks]

Q.# 1.

- a) You are tasked with drafting a mobile application screen using Flutter that displays a user's profile information including their name, profile picture and a short bio.
- Use Flutter widget concepts make a UI (code) that fulfills the following requirements:
- The screen should have an AppBar with the title "User Profile".
 - Display a circular profile picture using a widget of your choice.
 - Below the picture show the user's name in bold and a short bio in normal text.
- b) By applying the concepts of widgets make a product detail screen in Flutter that includes an image of the product, a TextField to allow the user to enter the quantity they want to order and a Button labeled "Add to Cart". When the user taps/clicks the button, a popup should appear showing the quantity entered and confirming the item was added to the cart. Mention the Flutter widgets you would use and how you would organize them to build an effective and responsive user interface.

(CLO –2: Construct attractive front-end for mobile applications using latest technologies, BT-6)
[5+5 = 10 Marks]

You have to design a mobile application for a coffee shop. The application will allow customers to browse the menu, place orders and view their placed orders. Your goal is to construct a simple version of this app with technologies/approaches you've used.

Following are the requirements that you need to work on:

- Design a screen that displays a list of available coffee drinks. Each item should have a name & price.
 - Design a screen that shows the already placed orders made by the user, displaying the username/ID, drink name and the date of the order. (Pending/Placed Orders)
- This may considered to be on the Admin side.

*You can use ArrayList to store the menu items if needed. No usage of simple list widget.

(CLO -3: Develop backend for mobile applications using modern technologies, BT-4)

[5+5 = 10 Marks]

You have to design and develop a scenario involving two pages: a **Sign-Up page** and a **Login page**. A user must first sign up before they are eligible to log in. If any fields are left unfilled on the Sign-Up page, a popup error message should be displayed. The Sign-Up form will include fields for Name, Email, Password, Gender (using checkboxes or radio buttons), and Phone Number.

The Login page will require the user to enter their Username and Password. After submitting the Login form, a popup should appear to indicate whether authentication is successful or failed.

Once the user has successfully signed up, they should be navigated to the Login page using a navigation mechanism, with the Username passed along to the Login page. The Login page will then authenticate the user based on the provided Username and Password.

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



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

- 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.
- 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

- 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)
- 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)
- 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*****



COMSATS UNIVERSITY ISLAMABAD (CUI)

DEPARTMENT OF COMPUTER SCIENCE
MIDTERM EXAMINATION FALL 2025
BS (CS & SE) – VI & VII SEMESTER

Course: CSC 303 Mobile Application Development

Instructor: Qanetah Ahmed, Shujat Hussain

Maximum Marks: 30

Dated: 30th Oct, 2025

Time Allowed: 8:30AM-10:00AM

- 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.
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- Attempt all questions.

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

Q.# 1.

[5+5=10 Marks]

(For both parts assume inputs)

(Implement only the `onPressed()` functionality for both)

The UI already displays a list of tasks using checkboxes and a "Show Progress" button.

Use the Dart logic that **when the button is pressed**:

1. Counts how many tasks are **completed** (checked) and how many are **pending**.
2. Calculates the **percentage of tasks completed** and displays it (for example: "Progress: 60% done").

If all tasks are completed, show a congratulatory message ("All tasks completed!").

Apply Dart concepts and make the logic for a screen (already exists) that takes **total classes** and **classes attended** as input. When "Check Eligibility" is pressed, calculate the **attendance percentage** and display:

1. "Eligible for exam" if 75% or above
2. "Not eligible" if below 75%
3. Show "Very Low Attendance" if below 60%

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

Q.# 2.

[5+5 = 10 Marks]

- a) Design a **grocery shopping screen** showing a list of items (e.g., Apples, Bread, Milk, Eggs, Rice) with their prices. Use `ListView.builder` or `Column` and display each item in a styled `Container` with padding, margin and color. Add a centered title "Grocery List" at the top.

- b) Design a **delivery options form** using Radio buttons for Standard Delivery, Express Delivery and Pick-up. When the user presses "**Confirm**", display the selected option below using ScaffoldMessenger.

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

Q.# 3.

[5+5 = 10 Marks]

Construct a two-page application, a **Complaint Submission page** and a **Response Status page**. The Complaint form will include fields for Name, Email, Complaint Type, Description and Contact Number. If any field is left empty, a popup error message should appear (ScaffoldMessenger). After successful submission, the user should be redirected to the Response Status page.

The Complaint Type should be passed and displayed on the next page.

The Response page will show fields for Complaint ID, Response Message and Resolution Status (Pending/Resolved). When submitted a popup (ScaffoldMessenger) should confirm successful record saving.

If any field is incomplete, a popup should remind the user to fill in all details.

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