Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science and Engineering

Mid Semester Examination, Spring-2025

Course Code: CSE413 Course Title: Mobile Application Design

Level: 4 Term: 1 Batch: 61

Time: 01:30 Hrs **Marks: 25**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.		You are developing a mobile app called **QuickNote** for taking notes on the go. The app will be available on platforms that require specific development tools and must be distributed through platforms with strict submission guidelines. Additionally, the app will rely on external services to reach its target audience effectively. Your team is also focusing on creating an intuitive and visually appealing design to ensure a great user experience.		CO1
	a)	Identify two core components of the mobile ecosystem indirectly mentioned in the scenario. Explain how these components will impact the development and launch of **QuickNote**.	[3]	
	b)	Discuss the role of design in the success of **QuickNote**. How does a well thought-out design contribute to user engagement and satisfaction?	[2]	
2.		You are developing a real-time application for the DIU Chess Club using Flutter. The app allows club members to create, update, and delete chess match records. Each match record includes details such as player names, date, result, and notes. The app needs to ensure that all members see the latest updates in real-time, even when they are using the app on different devices.		CO3
	a)	Which data handling technique would be most appropriate for this scenario, considering the need for real-time updates and multi-user collaboration? Justify your choice.	[2]	
	b)	Implement CRUD (Create, Read, Update, Delete) operations for managing chess match records using the chosen data handling technique. Ensure your implementation includes: • Adding a new match record. • Reading and displaying match records in real-time. • Updating an existing match record. • Deleting a match record.	[6]	

		Provide code snippets for each operation and explain how real-time updates are achieved.		
	c)	Flutter supports both Material Design and Human Interface Guidelines (HIG). What are the key differences between these two design systems in the context of Flutter? Discuss how these differences might influence the design of the DIU Chess Club app.	[4]	
3.		You are developing a task management app called **Taskly** using Flutter. The app allows users to create, organize, and track tasks. The app has three main screens: 1. **Home Screen:** Displays a list of tasks. 2. **Add Task Screen:** Allows users to create a new task. 3. **Profile Screen:** Lets users view and edit their profile information. Before starting development, your team decides to create a prototype to visualize the app's navigation and user flow.		CO2
	a)	*Why is prototyping important before implementing the navigation system in Taskly? Discuss how prototyping helps in identifying potential issues and improving the user experience. Additionally, explain the difference between low-fidelity and high-fidelity prototypes and when each type might be used during the development process.*	[4]	
	b)	Implement a bottom navigation bar in Flutter to allow users to switch between the **Home Screen, Add Task Screen,** and **Profile Screen.** Provide a code example and explain how the navigation between screens works.	[4]	