



Daffodil International University
Department of Information Technology & Management
Faculty of Science & Information Technology

Final Examination, Fall 2024

Course Code: ITM 123 ; Course Title: Software Requirement Analysis

Sections & Teachers: A, NJ

Time: 2:00 Hrs

Marks: 40

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.]

Library Table Booking System Application

Jessica, a university student, wants to reserve a table in the library to study for her upcoming exams. She opens the university's library app on her smartphone.

1. **Logging In:** Jessica logs into the app using her university credentials.
2. **Checking Availability:** She navigates to the "Table Booking" section, which displays a floor plan of the library. Tables are marked with different colors to indicate availability: green for available, yellow for reserved, and red for occupied.
3. **Selecting a Table:** Jessica selects a green table near the window on the second floor, which has a power outlet.
4. **Setting the Time:** She chooses her booking time slot from 2 PM to 5 PM for the same day. The app shows her a confirmation message that no other reservations overlap this slot.
5. **Confirming the Reservation:** Jessica confirms the booking. The app sends her a confirmation with the table number, floor location, and time slot. She also receives a QR code to scan upon arrival at the library.
6. **Receiving Reminders:** One hour before her reserved time, Jessica gets a notification reminding her about the reservation.
7. **Using the Table:** Upon arriving at the library, Jessica scans the QR code at the designated table to check in. The system marks the table as occupied in the app for the duration of her booking.
8. **Finishing the Session:** When Jessica finishes earlier than planned, she clicks "End Session" in the app, which frees up the table for other users.
9. **Modify Reservation:** If Jessica wants to modify her reservation, she logs into the library app, navigates to "My Reservations," selects the booking, edits the details (e.g., time slot), and confirms the changes. The system validates availability, updates the reservation, and sends her a confirmation.

1	a)	Using the scenario provided for the library table booking system, draw a use case diagram	[Marks-6]	CLO-3 Level-5
	b)	Write a use case description for the 'Book a Table' functionality in the Library Table Booking System.	[Marks-4]	
2.	a)	Develop Software Requirements Specification (SRS) document for the Library Table Booking System based on the provided scenario	[Marks-5]	CLO-4 Level-4
3	a)	"Design a prototype for the 'Table Availability and Booking' screen in the library app. Your prototype should: ◆ Display a library floor plan with tables marked by availability (e.g., green for available, yellow for reserved, red for occupied). ◆ Allow students to select a specific table by tapping on it. ◆ Include a way to specify the desired time slot for the booking. ◆ Show a confirmation option after the time slot is selected. Provide annotations or notes explaining your design choices and how they make the interface intuitive and user-friendly."	[Marks-6]	

4	a)	List some prioritization parameters	[Marks-2]	CLO-4 Level-3
	b)	Apply a prioritization technique to categorize and prioritize the functional requirements of the Library Table Booking System	[Marks-5]	
5	a)	Write a detailed scenario for the 'Modify Reservation' requirement in the Library Table Booking System.	[Marks-5]	CLO-4 Level-3
6	b)	Create a Requirements Traceability Matrix (RTM) for the Library Table Booking System. Your traceability matrix should map the functional requirements to their corresponding use cases and test cases. Include the following columns in your RTM: 1. Requirement ID: A unique identifier for each functional requirement. 2. Requirement Description: A brief description of the requirement. 3. Use Case ID: Reference to the use case(s) addressing this requirement. 4. Test Case ID: Reference to the test case(s) ensuring the requirement is fulfilled.	[Marks-5]	
7	a)	List some requirement validation techniques	[Marks-2]	CLO-2 Level-1