

FACULTY OF COMPUTER SCIENCE AND ENGINEERING
Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi

Open Ended Lab

Lab Duration: 1.5 hrs.

CS112 Object Oriented Programming

Marks: 10

Section: H

Instructor: Comp Engr. Hifza Umer

Dated: 09/05/2024.

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Reg#: _____

Question 01:

Create an innovative order management system for food delivery company. The system will handle orders from various cuisines, ensure secure payment processing, and track delivery status.

Inheritance: Create a base class "**FoodItem**" with common attributes like name, price, and ingredients, from which specific food item classes such as "Pizza", "Sushi", "Tacos", will inherit. Additionally, constructors for order and payment objects will handle initialization based on user input, also create functions placing orders, making payments for smooth processing.

Polymorphism: The system will utilize polymorphism to process orders for different cuisines, enabling seamless handling regardless of cuisine type.

Question 02:

Design a Tourism Management System in which following operation must be done:

Create a base class **named 'Tour'** to represent different types of tours. Derive specific tour classes like 'GuidedTour' and 'SelfGuidedTour' from the 'Tour' base class. Implement polymorphism by defining virtual functions in the base class and overriding them in the derived classes to accommodate different tour types.

1. Implement Linked List for Bookings:

Create a class named '**BookingNode**' to represent each booking in the linked list. Include member variables to store information such as tourist details, tour package, and booking status. Implement a linked list data structure to manage bookings, where each node contains a '**BookingNode**' object and a pointer to the next node. Implement functions to insert new bookings, delete bookings, and traverse the linked list to display booking information.

Implement classes for 'Tourist', 'Guide', and 'Attraction' with appropriate member variables and functions to represent these entities. Implement Function searching for attractions, assigning guides to tours, and generating booking confirmations.

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Lab Instructor Signature: _____