THE UNIVERSITY OF LAHORE
Faculty of Engineering and Technology
Department of Technology
Spring Semester 2024

Instructor's Name:	Asim Anwar	**Subject:**	Artificial Intelligence and Optimization
Subject Code:	CS13315	**Assignment #:**	01
Total Marks:	10	**Assigning Date:**	26-2-2024
Due Date& Time:	3-2-2024		

Instructions for Candidates

i. Provide your original work reflecting your own "understanding".
ii. Copying or reproducing others work may lead to zero credits in that particular question(s).

Topics: Functions, loops and data structures

Question # 01   **(10 marks)(CLO1)**

In this assignment, you will be presented with a menu ordering system which will allow users to input three choices for a select menu. You are tasked with completing the menu system so that it returns and calculates the final bill for the user.

There are three main objectives of this activity:

1. Create new functions to solve specific problems.
2. Gain experience of using for loops to iterate over different data collections.
3. Create and use data structures to store, retrieve and loop over data.

Assignment Instructions

1. Open the script ordering_system.py present (uploaded on Slate).
2. Run the script and, when requested, enter in the three products of your choice based on the menu - 1 = espresso, 2 = coffee etc.
3. To run the script, open terminal and execute the following command.
```
python3 ordering_system.py
```

4. Extend the script to have a new function called `calculate_subtotal`. It should accept one argument which is the order list and return the sum of the prices of the items in the order list.
5. Implement `calculate_tax()` which calculates the tax of the subtotal. The tax percentage is 15% of overall bill.
6. Implement `summarize_order()` which returns a list of the names of the items that the customer ordered and the total amount (including tax) that they have to pay. The orders should show the name and price.