University of Management and Technology
School of Systems and Technology, Department of Computer Science

Assignment 01– Spring 2024

Course Title:	Object Oriented Programming				Course Code:	CC1022	Credit Hours: 4(3,1)
Course Instructor:	**Mr. Muhammad Owais Khan**				Program Name:	BSCS	
Semester:	2nd	Batch:	FA22-BCS	Section:		Date:	15-04-2023
Due Date:	**15-04-2023, Monday @ 11.59pm sharp**				Maximum Marks:	**20**	
Student's Name:					Reg. No.		

Important Instructions (To be followed very strictly)

- This is an individual assignment
- Attempt all questions
- Assignment must be handwritten you have to upload pdf on email before deadline with .cpp code file.
- The assignment must include all steps involved to solve given questions.
- No submission is allowed after the aforementioned deadline.
- Email address: Owais.khan@umt.edu.pk

Question No 1. [CLO-1] <Bloom Taxonomy – C2: Understand> Marks [5 x 4 = 20]

Understand the object oriented programming concepts of real-world scenarios on the Topic: Classes, Object, Getter Setter Functions solve the following problems.

Problem 1:

Suppose we want to design a banking application that tracks customer accounts. We need to create a class called "UserAccount" to represent each customer's account. Each account should have the following data members:

- Account number
- Account holder's name
- Account balance
- Account holder's bankname

To ensure data encapsulation, make these all data members private. Implement or provide public getter and setter functions to allow other parts of the application to access and modify these data members. Print the user information using DetailUser function. Store the bank account information of at least five students.

Problem 2:

Create a class called "Stock" to represent a stock. Each stock should have a ticker symbol, a company name, a current price, and a list of historical prices. Implement getter and setter functions for each data member. Add member functions to calculate the average price over a given time period, as well as to determine whether the stock is currently overvalued or undervalued.

Problem 3:

Create a class called "Date" to represent a date. Each date should have a month, day, and year. Implement getter and setter functions for each component. Add member functions to calculate the number of days between two dates, as well as to check whether a given year is a leap year.

Problem 4:

Create a class called "Employee" to represent an employee. Each employee should have a name, an ID, a salary, and a department. Implement getter and setter functions for each data member. Add member functions to give an employee a raise, as well as to print out a list of all employees in a given department.