Institute of Business & Information Technology
University of the Punjab
Quaid-e-Azam Campus, Lahore

Spring Term 2022

Title:	OOP Assignment 2	**Subject:**	Object Oriented Programming
Instructor:	Muhammad Yasin Nasir	**Deadline:**	11:30 AM , 16th January, 2024
Syllabus:	Arrays, Functions, Pointers		
Book:		**Weightage:**	2.5 % (approx.)
Name:		**Roll No:**	

Assignment Title: Social Media Simulation using Command-Line Interface and Object-Oriented Programming

Objective: The aim of this assignment is to develop a simplified social media platform simulation with a command-line interface using object-oriented programming (OOP) principles. This exercise is designed to enhance your understanding of classes, constructors, and interactions within a realistic social media context.

Requirements:

1. User Class:

- Implement a `User` class to represent individuals on the social media platform.
- Include attributes such as `username`, `full name`, `date of birth`, and `email address`.
- Create a constructor to initialize these attributes.
- Overload the `==` operator to facilitate username-based comparisons.

2. Post Class:

- Design a `Post` class to represent user posts on the social media platform.
- Include attributes such as `post ID`, `content`, `timestamp`, `likes`, and `comments`.
- Develop a constructor to initialize these attributes.
- Overload the `+` operator to allow users to like a post.

3. Comment Class:

- Develop a `Comment` class to represent comments on a post.
- Include attributes such as `comment ID`, `commenter`, `content`, and `timestamp`.
- Create a constructor to initialize these attributes.

4. SocialNetwork Class:

- Create a `SocialNetwork` class to manage the overall social media platform.
- Implement methods to add new users, establish friendships, create posts, and add comments to posts.

- Develop a method to display a user's timeline, showcasing their posts and those of their friends, in chronological order.

5. Command-Line Interface:

- Design a user-friendly command-line interface to interact with your social media simulation.
- Include commands for creating a new user, making friends, creating posts, commenting on posts, sending private messages, and viewing the timeline.

6. Additional Functionality:

- Enable users to send private messages to their friends. Implement a method to handle private messages.
- Implement privacy settings for users and posts (e.g., public, private, friends-only).

7. Demonstration:

- Instantiate users with diverse profiles and interests for a realistic simulation.
- Simulate user interactions through the command-line interface.
- Showcase the timeline functionality, private messaging, and the impact of privacy settings.

Submission Guidelines:

1. Submit a well-documented codebase with clear comments explaining the implementation of each class and method.
2. Include a README file providing an overview of your code structure, instructions on running the simulation through the command-line interface, and details on any additional features or improvements you implemented.
3. Submit only the code files to the Google Classroom.
4. Submit the hard copy on the tuesday class.

Grading Criteria:

- Correct implementation of classes, constructors, and operator overloading.
- Realism and relevance of the social media simulation.
- Proper use of object-oriented principles.
- Clarity and organization of code and documentation.
- Effectiveness and user-friendliness of the command-line interface.
- Implementation of additional features, such as private messaging and privacy settings.