Object Oriented Programming Laboratory (CSE 1116)

Home Assignment: 01
Mark: 10

Using generative AI tools is strongly discouraged. If you face any difficulties in understanding the questions you can come to counselling.

Q1. a) Create an ArrayList "**NumberList**" that will add integers from 1 to 20. [3]

b) Define the following functions to perform operations on the ArrayList:

→ Write a function that iterates over the ArrayList and prints only the prime numbers.
→ Write a function that finds each element in the ArrayList that is a multiple of 5 and updates it by adding 10 to its value.
→ Write a function that prompts the user to enter an index (from 0 to 19) and then removes the element at that index from the ArrayList.

Q2. a). Create a class called Account with the following properties: [7]
- **accountNumber:** an integer representing the account number.
- **accountHolderName:** a string representing the name of the account holder.
- **branchName:** a string representing the branch name where the account is held.
- **balance:** a double representing the current balance in the account.
- **interestRate:** a float representing the interest rate for the account.

b). Define the following methods in the Account class:
- **addBalance():** This method will take an amount from the user and add it to the current balance.
- **displayAccount():** This method will display all the details of the account, including account number, holder's name, branch, balance, and interest rate.

c). Create a separate class called **TestClass** to manage the accounts using an ArrayList:
- In **TestClass**, create an ArrayList to store multiple Account objects.
- Add 5 Account objects to the ArrayList.
- Prompt the user to enter an account number and search the ArrayList for the account with the matching account number.
- Display the account information for the matched account.