## Assignment: ATM Simulation Program

### Objective:

Write a Java program that simulates a basic ATM machine. The program should allow a user to perform banking operations such as checking their balance, depositing money, withdrawing money, and exiting the system. The program should make use of methods, method overloading, primitive data types, conditional logic, loops, and scanners for taking inputs.

### Requirements:

1. **Initial Setup:**
    - o The program should initialize with a balance of 1000 units (e.g., dollars). o Use the `Scanner` class to take user input for actions and ensure that input validation is performed using the `hasNextInt()` method to confirm that valid numbers are entered.
2. **Menu:**
    - o The program should display a menu with the following options:
        1. Check Balance
        2. Deposit Money
        3. Withdraw Money
        4. Exit
    - o Use a `while` or `do-while` loop to repeatedly display the menu until the user chooses to exit.
3. **Methods:**
    - o Implement a method `checkBalance()` that displays the current balance. o Implement a method `depositMoney(double amount)` that allows the user to deposit an amount into their account. Use method overloading to create two versions of this method: one that accepts integer amounts and another that accepts double amounts.
    - o Implement a method `withdrawMoney(double amount)` that allows the user to withdraw an amount, but only if the withdrawal does not exceed the available balance. The program should display an error if the user tries to withdraw more than they have.
4. **Input Validation:**
    - o The program should ensure valid inputs for both the deposit and withdrawal amounts (use `hasNextInt()` or `hasNextDouble()` for validation).
5. **Additional Conditions:**
    - o If the user tries to withdraw more money than their balance, show an appropriate message.
    - o After each transaction, return to the main menu until the user selects "Exit."

**CS 104** – Object Oriented Programming

Department of Computer Science

**Assignment No. 01**

UET Peshawar

## Example Output:

```
Welcome to the ATM System!
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 1
Your current balance is: 1000.0

1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 2
Enter the amount to deposit: 500
Your new balance is: 1500.0

1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 3
Enter the amount to withdraw: 2000
Insufficient balance!

1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 4
Thank you for using the ATM!
```

## Concepts Covered:

- **Methods & Method Overloading:** To handle different types of inputs for deposit and transactions.
- **Primitive Data Types:** Using integers and doubles for balance and transactions. •
**Conditional Logic:** Checking for insufficient balance, validating inputs. • **Loops:**
For repeatedly displaying the menu until the user chooses to exit. • **Scanner:** To
handle user input for selecting menu options and entering amounts