# Rajalakshmi Engineering College

Name: gladwin antony.A
Email: 241501057@rajalakshmi.edu.in
Roll no: 241501057
Phone: 8015799480
Branch: REC
Department: AI & ML - Section 4
Batch: 2028
Degree: B.E - AI & ML

## 2024_28_III_OOPS Using Java Lab

## 2028_REC_OOPS using Java_Week 5_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 15

## Section 1 : MCQ

1.  What will be the output of the following code?

```java
class Person {
    int age = 18;
}

public class Main {
    public static void main(String[] args) {
        Person p = new Person();
        p.age += 2;
        System.out.println("Age: " + p.age);
    }
}
```

*Answer*

Age: 20

2.   What will be the output of the following code?

```
class Ball {
   int size = 11;
}

class Game {
   public static void main(String[] args) {
      Ball b1 = new Ball();
      Ball b2 = new Ball();
      b2.size = 10;
      System.out.println(b1.size);
   }
}
```

*Answer*

11

*Status :* Correct                                    *Marks : 1/1*

3.   What will be the output of the following code?

```
class Sample {
   int x = 10;

   void display() {
      System.out.println("x = " + x);
   }

   public static void main(String[] args) {
      Sample s = new Sample();
      s.display();
   }
}
```

*Answer*

x = 10

*Status :* Correct                                                    *Marks : 1/1*

4.  What will be the output of the following code?

```
class Box {
    int volume(int l, int b, int h) {
        return l * b * h;
    }
}

public class Main {
    public static void main(String[] args) {
        Box b = new Box();
        System.out.println(b.volume(2, 3, 4));
    }
}
```

*Answer*

24

*Status :* Correct                                                    *Marks : 1/1*

5.  What will be the output of the following code?

```
class A {
    int p = 5;
    int q = 2;
}

class Main {
    public static void main(String[] args) {
        A obj = new A();
        System.out.println(obj.p + obj.q);
    }
}
```

*Answer*

7

6.   What will be the output of the following code?

```
class Demo {
    void printMessage() {
        System.out.println("Hello from Demo");
    }
}

public class Main {
    public static void main(String[] args) {
        Demo d = new Demo();
        d.printMessage();
    }
}
```

*Answer*

Hello from Demo

*Status :* Correct                                                                                      *Marks : 1/1*

7.   What is the output of the following code?

```
class Box {
    int height;
    Box(int height) {
        this.height = height;
    }
    void modifyHeight(Box b) {
        b.height += 10;
    }
}
public class Main {
    public static void main(String[] args) {
        Box b1 = new Box(20);
        b1.modifyHeight(b1);
```

```
    System.out.println(b1.height);
  }
}
```

*Answer*

30

*Status :* Correct                                    *Marks : 1/1*

8.  What will be the output of the following code?

```
class MathUtils {
  int add(int x) {
    return x + x;
  }
}

public class Main {
  public static void main(String[] args) {
    MathUtils m = new MathUtils();
    System.out.println(m.add(5));
  }
}
```

*Answer*

10

*Status :* Correct                                    *Marks : 1/1*

9.  What will be the output of the following code?

```
class Alpha {
  void greet(String name) {
    System.out.println("Hello " + name);
  }
}

public class Main {
  public static void main(String[] args) {
```

```
    Alpha obj = new Alpha();
    obj.greet("Anu");
  }
}
```

*Answer*

Hello Anu

*Status :* Correct                                                                                      *Marks : 1/1*


10.  What will be the output of the following code?

```
class Person {
  String name;
  void setName(String n) {
    name = n;
  }
  void printName() {
    System.out.println(name);
  }
}

class Test {
  public static void main(String[] args) {
    Person p = new Person();
    p.printName();
  }
}
```

*Answer*

null

*Status :* Correct                                                                                      *Marks : 1/1*


11.  What will be the output of the following code?

```
class Test {
  private int value;
  Test(int value) {
```

```java
        this.value = value;
    }
    public int getValue() {
        return value;
    }
}
public class Main {
    public static void main(String[] args) {
        Test obj = new Test(10);
        System.out.println(obj.value);
    }
}
```

*Answer*

Compile-time error

*Status :* Correct                                                    *Marks : 1/1*


12.  What will be the output of the following code?

```java
class A {
    int y = 30;
}

public class Main {
    public static void main(String[] args) {
        A a1 = new A();
        A a2 = new A();
        a1.y = 50;
        System.out.println(a2.y);
    }
}
```

*Answer*

30

*Status :* Correct                                                    *Marks : 1/1*


13.  What will be the output of the following code?

```java
class Box {
    int length = 5;
    int width = 4;

    int area() {
        return length * width;
    }

    public static void main(String[] args) {
        Box b = new Box();
        System.out.println("Area = " + b.area());
    }
}
```

**Answer**

Area = 20

**Status :** Correct                                                                                          **Marks : 1/1**


14. What will be the output of the following code?

```java
class A {
    int x = 50;
}

public class Main {
    public static void main(String[] args) {
        A obj1 = new A();
        A obj2 = obj1;
        obj2.x = 100;
        System.out.println(obj1.x);
    }
}
```

**Answer**

100

**Status :** Correct                                                                                          **Marks : 1/1**

15. What will be the output of the following code?

```
class A {
    int val = 20;
}

public class Main {
    public static void main(String[] args) {
        A obj1 = new A();
        A obj2 = obj1;
        obj2.val += 5;
        System.out.println(obj1.val);
    }
}
```

*Answer*

25

*Status :* Correct                                                                                     *Marks : 1/1*

# Rajalakshmi Engineering College

Name: gladwin antony.A
Email: 241501057@rajalakshmi.edu.in
Roll no: 241501057
Phone: 8015799480
Branch: REC
Department: AI & ML - Section 4
Batch: 2028
Degree: B.E - AI & ML

## 2024_28_III_OOPS Using Java Lab

## 2028_REC_OOPS using Java_Week 5_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

## Section 1 : Coding

1. Problem Statement

You are working as a developer for CityBank, which wants to build a basic account management system.

Each customer at the bank has:

An Account Number (integer)A Customer Name (string)An Initial Balance (double)

The bank allows two types of transactions:

Deposit – increases the balance.Withdrawal – decreases the balance only if enough funds are available.

If the withdrawal amount is greater than the balance, the withdrawal should not happen, and the balance should remain the same.

You are required to implement this system using:

A class with attributes for account details.A constructor to initialize account details.Setter methods to update details if needed.Getter methods to retrieve details.Objects of the class to represent customers.

Finally, display each customer's account details after all transactions.

### Input Format

The first line of input contains an integer N, representing the number of customers.

For each customer:

- The next line contains the account number (integer).
- The following line contains the customer name (string).
- The next line contains the initial balance (double).
- The next line contains the deposit amount (double).
- The next line contains the withdrawal amount (double).

### Output Format

For each customer, print the details in the following format:

1. Account Number: <account_number>
2. Customer Name: <customer_name>
3. Final Balance: <final_balance> (rounded to one decimal place)

Refer to the sample output for formatting specifications.

### Sample Test Case

Input: 1
1234
Rahul Sharma
5000
2000
3000
Output: Account Number: 1234
Customer Name: Rahul Sharma

Final Balance: 4000.0

*Answer*

```java
import java.util.Scanner;

class Account {
    private int accountNumber;
    private String customerName;
    private double balance;

    // Constructor
    public Account(int accountNumber, String customerName, double balance) {
        this.accountNumber = accountNumber;
        this.customerName = customerName;
        this.balance = balance;
    }

    // Setters
    public void setAccountNumber(int accountNumber) {
        this.accountNumber = accountNumber;
    }

    public void setCustomerName(String customerName) {
        this.customerName = customerName;
    }

    public void setBalance(double balance) {
        this.balance = balance;
    }

    // Getters
    public int getAccountNumber() {
        return accountNumber;
    }

    public String getCustomerName() {
        return customerName;
    }

    public double getBalance() {
        return balance;
    }
}
```

```java
    // Deposit method
    public void deposit(double amount) {
        if (amount >= 0) {
            balance += amount;
        }
    }

    // Withdrawal method
    public void withdraw(double amount) {
        if (amount >= 0 && amount <= balance) {
            balance -= amount;
        }
        // else withdrawal ignored
    }
}

public class Main{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int N = Integer.parseInt(sc.nextLine().trim());

        for (int i = 0; i < N; i++) {
            int accountNumber = Integer.parseInt(sc.nextLine().trim());
            String customerName = sc.nextLine().trim();
            double initialBalance = Double.parseDouble(sc.nextLine().trim());
            double depositAmount = Double.parseDouble(sc.nextLine().trim());
            double withdrawalAmount = Double.parseDouble(sc.nextLine().trim());

            Account account = new Account(accountNumber, customerName,
initialBalance);

            account.deposit(depositAmount);
            account.withdraw(withdrawalAmount);

            System.out.println("Account Number: " + account.getAccountNumber());
            System.out.println("Customer Name: " + account.getCustomerName());
            System.out.printf("Final Balance: %.1f\n", account.getBalance());
        }

        sc.close();
```

```
        }
    }
```

**Status :** <span style="color:green">Correct</span>                                    **Marks : 10/10**

# Rajalakshmi Engineering College

Name: gladwin antony.A
Email: 241501057@rajalakshmi.edu.in
Roll no: 241501057
Phone: 8015799480
Branch: REC
Department: AI & ML - Section 4
Batch: 2028
Degree: B.E - AI & ML

Scan to verify results

## 2024_28_III_OOPS Using Java Lab

## 2028_REC_OOPS using Java_Week 5_Q5

Attempt : 1
Total Mark : 10
Marks Obtained : 10

## Section 1 : Coding

1.   Problem Statement

Ram is working as a developer for BrightEdu Coaching Center, which wants to build a student fee management system.

Each student's enrollment has:

An Enrollment ID (integer)A Student Name (string)The Number of Subjects (integer)

The fee calculation rules are:

Registration Fee = 1000 units (flat for every student).Per Subject Fee = 800 units.If the student enrolls in more than 5 subjects, a 20% scholarship (discount) is applied on the total fee.

Ram has been asked to implement this system using:

A class with attributes for student details.A constructor to initialize student details.Setter methods to update details if needed.Getter methods to retrieve details.Objects of the class to represent student enrollments.

Finally, display each student's details and final fee.

*Input Format*

The first line of input contains an integer N, representing the number of students.

For each student:

- The next line contains the Enrollment ID (integer).
- The following line contains the student's name (string).
- The next line contains the Number of subjects (integer).

*Output Format*

For each student, print the details in the following format:

- Enrollment ID: <enrollment_id>
- Student Name: <student_name>
- Final Fee: <final_fee> (rounded to one decimal place)

Refer to the sample output for formatting specifications.

*Sample Test Case*

Input: 1
1234
Ravi Kumar
3
Output: Enrollment ID: 1234
Student Name: Ravi Kumar
Final Fee: 3400.0

*Answer*

```java
import java.util.Scanner;

class Student {
    private int enrollmentId;
```

```java
    private String studentName;
    private int numberOfSubjects;

    // Constructor
    public Student(int enrollmentId, String studentName, int numberOfSubjects) {
        this.enrollmentId = enrollmentId;
        this.studentName = studentName;
        this.numberOfSubjects = numberOfSubjects;
    }

    // Setters
    public void setEnrollmentId(int enrollmentId) {
        this.enrollmentId = enrollmentId;
    }

    public void setStudentName(String studentName) {
        this.studentName = studentName;
    }

    public void setNumberOfSubjects(int numberOfSubjects) {
        this.numberOfSubjects = numberOfSubjects;
    }

    // Getters
    public int getEnrollmentId() {
        return enrollmentId;
    }

    public String getStudentName() {
        return studentName;
    }

    public int getNumberOfSubjects() {
        return numberOfSubjects;
    }

    // Method to calculate final fee
    public double calculateFee() {
        double registrationFee = 1000;
        double perSubjectFee = 800;
        double totalFee = registrationFee + (perSubjectFee * numberOfSubjects);
```

```java
        if (numberOfSubjects > 5) {
            totalFee = totalFee * 0.80; // 20% scholarship
        }

        return totalFee;
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int N = Integer.parseInt(sc.nextLine().trim());

        for (int i = 0; i < N; i++) {
            int enrollmentId = Integer.parseInt(sc.nextLine().trim());
            String studentName = sc.nextLine().trim();
            int numberOfSubjects = Integer.parseInt(sc.nextLine().trim());

            Student student = new Student(enrollmentId, studentName,
numberOfSubjects);

            double finalFee = student.calculateFee();

            System.out.println("Enrollment ID: " + student.getEnrollmentId());
            System.out.println("Student Name: " + student.getStudentName());
            System.out.printf("Final Fee: %.1f\n", finalFee);
        }

        sc.close();
    }
}
```

*Status :* Correct                                                    *Marks : 10/10*

# Rajalakshmi Engineering College

Name: gladwin antony.A
Email: 241501057@rajalakshmi.edu.in
Roll no: 241501057
Phone: 8015799480
Branch: REC
Department: AI & ML - Section 4
Batch: 2028
Degree: B.E - AI & ML

Scan to verify results

## 2024_28_III_OOPS Using Java Lab

## 2028_REC_OOPS using Java_Week 5_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

## Section 1 : Coding

1. Problem Statement

You are working as a developer for CityBank, which wants to build a basic account management system.

Each customer at the bank has:

An Account Number (integer)A Customer Name (string)An Initial Balance (double)

The bank allows two types of transactions:

Deposit – increases the balance.Withdrawal – decreases the balance only if enough funds are available.

If the withdrawal amount is greater than the balance, the withdrawal should not happen, and the balance should remain the same.

You are required to implement this system using:

A class with attributes for account details.A constructor to initialize account details.Setter methods to update details if needed.Getter methods to retrieve details.Objects of the class to represent customers.

Finally, display each customer's account details after all transactions.

### Input Format

The first line of input contains an integer N, representing the number of customers.

For each customer:

- The next line contains the account number (integer).
- The following line contains the customer name (string).
- The next line contains the initial balance (double).
- The next line contains the deposit amount (double).
- The next line contains the withdrawal amount (double).

### Output Format

For each customer, print the details in the following format:

1. Account Number: <account_number>
2. Customer Name: <customer_name>
3. Final Balance: <final_balance> (rounded to one decimal place)

Refer to the sample output for formatting specifications.

### Sample Test Case

Input: 1
1234
Rahul Sharma
5000
2000
3000
Output: Account Number: 1234
Customer Name: Rahul Sharma

Final Balance: 4000.0

*Answer*

```java
import java.util.Scanner;

class Account {
    private int accountNumber;
    private String customerName;
    private double balance;

    // Constructor
    public Account(int accountNumber, String customerName, double balance) {
        this.accountNumber = accountNumber;
        this.customerName = customerName;
        this.balance = balance;
    }

    // Setters
    public void setAccountNumber(int accountNumber) {
        this.accountNumber = accountNumber;
    }

    public void setCustomerName(String customerName) {
        this.customerName = customerName;
    }

    public void setBalance(double balance) {
        this.balance = balance;
    }

    // Getters
    public int getAccountNumber() {
        return accountNumber;
    }

    public String getCustomerName() {
        return customerName;
    }

    public double getBalance() {
        return balance;
    }
}
```

```java
    // Deposit method
    public void deposit(double amount) {
        if (amount >= 0) {
            balance += amount;
        }
    }

    // Withdrawal method
    public void withdraw(double amount) {
        if (amount >= 0 && amount <= balance) {
            balance -= amount;
        }
        // else withdrawal ignored
    }
}

public class Main{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int N = Integer.parseInt(sc.nextLine().trim());

        for (int i = 0; i < N; i++) {
            int accountNumber = Integer.parseInt(sc.nextLine().trim());
            String customerName = sc.nextLine().trim();
            double initialBalance = Double.parseDouble(sc.nextLine().trim());
            double depositAmount = Double.parseDouble(sc.nextLine().trim());
            double withdrawalAmount = Double.parseDouble(sc.nextLine().trim());

            Account account = new Account(accountNumber, customerName,
initialBalance);

            account.deposit(depositAmount);
            account.withdraw(withdrawalAmount);

            System.out.println("Account Number: " + account.getAccountNumber());
            System.out.println("Customer Name: " + account.getCustomerName());
            System.out.printf("Final Balance: %.1f\n", account.getBalance());
        }

        sc.close();
```

```
        }
    }
```

**Status :** <span style="color:green">Correct</span>                    **Marks : 10/10**