WEEK 4

Question 1: Write a Java program to check whether the given number is odd or even

Code:

```
import java.util.Scanner;
public class One {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a number: ");
      double number = scan.nextDouble();
      scan.close();
      if (number % 1 != 0) {
         System.out.println("The number is not an integer, so it cannot be even or odd.");
      } else {
         int num = (int) number;
         if (num % 2 == 0) {
            System.out.println(num + " is even.");
         } else {
            System.out.println(num + " is odd.");
         }
      }
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac One.java
PS D:\Uni Material\LAB\sem 3\Week 4> java One
Enter a number: 46
46 is even.
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 2: Write a Java program to find the largest number among the three numbers.

Code:

```
import java.util.Scanner;
public class Two {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter first number: ");
      double num1 = scan.nextDouble();
      System.out.print("Enter second number: ");
      double num2 = scan.nextDouble();
      System.out.print("Enter third number: ");
      double num3 = scan.nextDouble();
      double largest = Math.max(Math.max(num1, num2), num3);
      System.out.println("The largest number is: " + largest);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Two.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Two
Enter first number: 45
Enter second number: -0.456
Enter third number: 1.78
The largest number is: 45.0
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 3: Write a Java program that takes a number as input and prints its multiplication table up to 10

Code:

```
import java.util.Scanner;
public class Three {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a number: ");
      int number = scan.nextInt();
      System.out.println("Multiplication Table of " + number + ":");
      for (int i = 1; i <= 10; i++)
         System.out.println(number + " x " + i + " = " + (number * i));
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Three.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Three
Enter a number: 17
Multiplication Table of 17:
17 x 1 = 17
17 x 2 = 34
17 x 3 = 51
17 x 4 = 68
17 x 5 = 85
17 x 6 = 102
17 x 7 = 119
17 x 8 = 136
17 x 9 = 153
17 x 10 = 170
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 4: Write a Java program to calculate the sum of following series: 1 + 2 + 3 + 4 + ... + N

Code:

```
import java.util.Scanner;
public class Four {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter the value of N: ");
      int N = scan.nextInt();
      int sum = 0;
      for (int i = 1; i <= N; i++)
         sum += i;
      System.out.println("Sum of the series 1 + 2 + ... + " + N + " is: " + sum);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Four.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Four
Enter the value of N: 96
Sum of the series 1 + 2 + ... + 96 is: 4656
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 5: Write a Java program to take a number, divide it by 2 and print the result until the number becomes less than 10

Code:

```
import java.util.Scanner;
public class Five {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a number: ");
      int number = scan.nextInt();
      if (number < 10)
         System.out.println("Number is less than 10, please enter more than 10");
      while (number >= 10) {
         System.out.println(number + " / 2 = " + (number / 2));
         number = number / 2;
      }
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Five.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Five
Enter a number: 89
89 / 2 = 44
44 / 2 = 22
22 / 2 = 11
11 / 2 = 5
PS D:\Uni Material\LAB\sem 3\Week 4>
```

OPTIONAL

Question 6: Write a Java program to check whether a given character is a vowel or consonant.

Code:

```
import java.util.Scanner;
public class Six {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a character: ");
      char ch = scan.next().charAt(0);
      if (!Character.isLetter(ch))
         System.out.println("Invalid input. Please enter an alphabet character.");
      else if ("aeiouAEIOU".indexOf(ch) != -1)
         System.out.println(ch + " is Vowel");
      else
         System.out.println(ch + " is Consonant");
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Six.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Six
Enter a character: O
O is Vowel
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 7: Write a Java program to find the smallest number among four given numbers.

Code:

```
import java.util.Scanner;
public class Seven {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter first number: ");
      double num1 = scan.nextDouble();
      System.out.print("Enter second number: ");
      double num2 = scan.nextDouble();
      System.out.print("Enter third number: ");
      double num3 = scan.nextDouble();
      System.out.print("Enter fourth number: ");
      double num4 = scan.nextDouble();
      double smallest = Math.min(Math.min(num1, num2), Math.min(num3, num4));
      System.out.printf("The smallest number is: %.2f", smallest);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Seven.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Seven
Enter first number: -67
Enter second number: 0.289
Enter third number: 56.89
Enter fourth number: 00123
The smallest number is: -67.00
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 8: Write a Java program to calculate the sum of all even numbers from 1 up to a given number N.

Code:

```
import java.util.Scanner;
public class Eight {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter the value of N: ");
      int N = scan.nextInt();
      int sum = 0;
      for (int i = 2; i <= N; i += 2)
         sum += i;
      System.out.println("Sum of all even numbers from 1 to " + N + " is: " + sum);
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Eight.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Eight
Enter the value of N: 89
Sum of all even numbers from 1 to 89 is: 1980
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 9: Write a Java program to check whether a given year is a leap year or not

Code:

```
import java.util.Scanner;
public class Nine {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a year: ");
      int year = scan.nextInt();
      if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))
         System.out.println(year + " is a Leap Year.");
      else
         System.out.println(year + " is not a Leap Year.");
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Nine.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Nine
Enter a year: 2076
2076 is a Leap Year.
PS D:\Uni Material\LAB\sem 3\Week 4>
```

Question 10: Write a Java program that takes a number as input and prints all its factors

Code:

```
import java.util.Scanner;
public class Ten {
   public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter a number: ");
      int number = scan.nextInt();
      System.out.println("Factors of " + number + " are:");
      for (int i = 1; i <= number; i++) {
         if (number % i == 0)
            System.out.print(i + " ");
      }
      scan.close();
   }
}
```

Output:

```
PS D:\Uni Material\LAB\sem 3\Week 4> javac Ten.java
PS D:\Uni Material\LAB\sem 3\Week 4> java Ten
Enter a number: 17
Factors of 17 are: 1 17
PS D:\Uni Material\LAB\sem 3\Week 4>
```