FULL STACK DEVELOPMENT – WORKSHEET 2

Q1.Java method overloading implements the OOPS concept
C. Polymorphism

Q2.Data members and member functions of a class are private by default.
A. True

Q3.Which of the following functions can be inherited from the base class?
D. None

Q4. Identify the feature, which is used to reduce the use of nested classes.
B. Abstraction

Q5. Which concept of Java is achieved by combining methods and attributes into a class?
A. Encapsulation

Q6.Which of the following declarations does not compile?
A.double num1, int num2 = 0;

Q7.Which of these interface must contain a unique element?

A. Set

Q8.Predict the output?

A. 20

Q9. What is the output of the below Java program?

A. BINGO

Q10.What will be the output of the following Java program?

C. 5 6 5 6

Q11.What will be the output of the following Java code?

A. abc

Q12. What will be the output of the following Java program?
D. Compilation Error

Q13.What is output of following program

D. Compilation Error

Q14. What is the output of the following program?

C. [5 2]

Q15.What is the output of the following program?
B. true false

Q16. Given that Student is a class, how many reference variables and objects are created by the following code?

B. Two reference variables and two objects are created.

Q17. Write a java program to check even or odd number

```
import java.util.Scanner;
public class EvenOddChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = scanner.nextInt();
        if (number % 2 == 0) {
            System.out.println(number + " is an even number.");
        } else {
            System.out.println(number + " is an odd number.");
        }
          scanner.close();
    }
}
```

Q18. Write a java program to find average of two numbers

```
import java.util.Scanner;


public class AverageCalculator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);


        System.out.print("Enter the first number: ");

        double num1 = scanner.nextDouble();


        System.out.print("Enter the second number: ");

        double num2 = scanner.nextDouble();


        // Calculate the average

        double average = (num1 + num2) / 2.0;


        System.out.println("The average of " + num1 + " and " + num2 + " is: " +
average);


        scanner.close();

    }

}
```

Q19. Write a java program to swap two numbers

```
import java.util.Scanner;


public class NumberSwapper {

   public static void main(String[] args) {

      Scanner scanner = new Scanner(System.in);

       System.out.print("Enter the first number: ");

      int num1 = scanner.nextInt();

            System.out.print("Enter the second number: ");

      int num2 = scanner.nextInt();

            System.out.println("Before swapping: num1 = " + num1 + ", num2 = " +
num2);



      // Swap the numbers using a temporary variable

      int temp = num1;

      num1 = num2;

      num2 = temp;

      System.out.println("After swapping: num1 = " + num1 + ", num2 = " + num2);

      scanner.close();

   }

}
```

Q20. Write a java program to check whether a number is prime or not

```
import java.util.Scanner;
public class PrimeNumberChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = scanner.nextInt();
            if (isPrime(number)) {
            System.out.println(number + " is a prime number.");
        } else {
            System.out.println(number + " is not a prime number.");
        }
        scanner.close();
    }
    // Function to check if a number is prime
    public static boolean isPrime(int num) {
        if (num <= 1) {
            return false;
        }
        for (int i = 2; i * i <= num; i++) {
            if (num % i == 0) {
                return false;
            }
```

```
        }
        return true;
    }
}
```

Q21. Write a java program to find table of n

```
import java.util.Scanner;


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


        System.out.print("Enter a number: ");
        int n = scanner.nextInt();


        System.out.println("Table of " + n + ":");


        for (int i = 1; i <= 10; i++) {
            int result = n * i;
            System.out.println(n + " x " + i + " = " + result);
        }


        scanner.close();
    }
}
```

Q22. Write a java program to find the largest of three numbers.

```
import java.util.Scanner;


public class LargestOfThree {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);


        System.out.print("Enter the first number: ");

        int num1 = scanner.nextInt();


        System.out.print("Enter the second number: ");

        int num2 = scanner.nextInt();


        System.out.print("Enter the third number: ");

        int num3 = scanner.nextInt();


        int largest = findLargest(num1, num2, num3);


        System.out.println("The largest number is: " + largest);


        scanner.close();

    }


    // Function to find the largest of three numbers
```

```
    public static int findLargest(int a, int b, int c) {
        int largest = a;

        if (b > largest) {
            largest = b;
        }

        if (c > largest) {
            largest = c;
        }

        return largest;
    }
}
```

Q23. Write a java program to calculate Simple Interest

```
import java.util.Scanner;


public class SimpleInterestCalculator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);


        System.out.print("Enter the principal amount: ");

        double principal = scanner.nextDouble();


        System.out.print("Enter the rate of interest (in percentage): ");

        double rate = scanner.nextDouble();


        System.out.print("Enter the time period (in years): ");

        double time = scanner.nextDouble();


        double simpleInterest = (principal * rate * time) / 100.0;


        System.out.println("Simple Interest: " + simpleInterest);


        scanner.close();

    }

}
```

Q24. Write a java program to calculate Area and perimeter of Rectangle

```
import java.util.Scanner;

public class RectangleCalculator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

                System.out.print("Enter the length of the rectangle: ");

        double length = scanner.nextDouble();

                System.out.print("Enter the width of the rectangle: ");

        double width = scanner.nextDouble();

                double area = calculateArea(length, width);

        double perimeter = calculatePerimeter(length, width);

                System.out.println("Area of the rectangle: " + area);

        System.out.println("Perimeter of the rectangle: " + perimeter);

                scanner.close();

    }

        // Function to calculate the area of a rectangle

    public static double calculateArea(double length, double width) {

        return length * width;

    }

        // Function to calculate the perimeter of a rectangle

    public static double calculatePerimeter(double length, double width) {

        return 2 * (length + width);

    }

}
```

Q25. Write a java program to check whether character is vowel or consonant

```
import java.util.Scanner;
public class VowelConsonantChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
                System.out.print("Enter a character: ");
        char ch = scanner.next().charAt(0);
        if (isVowel(ch)) {
            System.out.println(ch + " is a vowel.");
        } else {
            System.out.println(ch + " is a consonant.");
        }
        scanner.close();
    }
    // Function to check if a character is a vowel
    public static boolean isVowel(char ch) {
        // Convert the character to lowercase for case-insensitive checking
        ch = Character.toLowerCase(ch);

        // Check if the character is one of the vowels (a, e, i, o, u)
        return ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u';
    }
}
```