FULL STACK DEVELOPMENT – WORKSHEET - A
Ng Haridhwaj Singh
Batch: FSG0123

Ques 1. Write a java program Add two Numbers.

Ans:

```
public class AddTwoNumb {
   // This line declares a public class named AddTwoNumb

   public static void main(String[] args) {
      // This line defines the use of the main method from which we start the Java program

      int x = 10;
      // This line declares an integer variable x and assigns the value 10

      int y = 20;
      // This line declares an integer variable y and assigns the value 20

      int sum = x + y;
      // This line calculates the sum of the variables x and y

      System.out.println(sum);
      // This line prints the value of the variable sum, which in this case will print 30 (the sum of x=10 and y=20)
   }
}
```

Ques 2. Write a java program Check Whether a Number is Even or Odd
Ans:

```
public class CheckOddEven {
// This line declares a public class named CheckOddEven

    public static void main(String[] args) {
    // This line defines the use of the main method from which we start the Java program

        Scanner reader = new Scanner(System.in);
        // scanner object is created to take input from the user

        System.out.print("Enter a number: ");
        // accepts the number from the user to store in the variable.

        int num = reader.nextInt();
        // checks the input number is even or odd using the modulo operator

        if (num % 2 == 0) {
            // if the remainder is 0 then the number is even
            System.out.println(num + " is even.");
        } else {
            // else, the number is odd
            System.out.println(num + " is odd.");
        }
        reader.close();
        // closes the scanner object to release the system resources
    }
}
```

Ques 3. Write a java program Check if a given number is palindrome or not.
Ans:

```
public class PalindromeExample {
// This line declares a public class named PalindromeExample

      public static void main(String[] args) {
      // This line defines the use of the main method from which we start the Java program

       int r, sum = 0, temp;
       // declared variables

       int n = 454;
       // Initialized the number

       temp = n;
       // Stored the original number in a temporary variable

       while (n > 0) {
       // Reversed the number using a while loop

         r = n % 10;
        // Get the last digit of the number by finding the remainder when divided by 10


       sum = (sum * 10) + r;
       // Add the extracted digit to the reversed number by multiplying the current reversed
number by 10 and then adding the digit

        n = n / 10;
       // Remove the last digit from the number by dividing it by 10
}


if (temp == sum){
// Use an if...else statement to check if the reversed number is equal to the original number

   System.out.println(temp + " is a palindrome number.");

}else

   System.out.println(temp + " is not a palindrome number.");
}
}
```

Ques 4. Write a java program to find the sum of n natural numbers.
Ans:

```
public class SumOfNaturalNumbers {
// This line declares a public class named SumOfNaturalNumbers

    public static void main(String[] args) {
    // This line defines the use of the main method from which we start the Java program

     Scanner scanner = new Scanner(System.in);
     // Scanner object is created to take input from the user

     System.out.print("Enter the value of 'n': ");
     // Prompts the user to enter the value of 'n'

     int n = scanner.nextInt();
     // Read the value of 'n' entered by the user and store it in a variable

     int sum = findSumOfNaturalNumbers(n);
     // Calculate the sum of the first 'n' natural numbers using the function
findSumOfNaturalNumbers

    System.out.println("The sum of the first " + n + " natural numbers is: " + sum);
    // Display the result, the sum of the first 'n' natural numbers, to the user

    scanner.close();
    // Release the system resources by closing the scanner

   }

   public static int findSumOfNaturalNumbers(int n) {
    // This is the function to find the sum of the first 'n' natural numbers

    return n * (n + 1) / 2;
    // Uses the correct formula for the sum of the first 'n' natural numbers: sum=n*(n + 1)/2
   }
}
```

Ques 5. Write a java program to Check Prime Number or not.
Ans:

```
public class CheckIfNumberIsPrime {
// This line declares a public class named CheckIfNumberIsPrime

public static void main(String[] args) {
// This line defines the use of the main method from which we start the Java program

Scanner scanner = new Scanner(System.in);
// Creates a scanner object to take input from the user

System.out.print("Enter a number: ");
// Requests the user to enter a number

int num = scanner.nextInt();
// Reads the number from the user and stores it in a variable

if (isPrime(num)) {

// Checks if the number is prime

System.out.println(num + " is a prime number.");
// Prints the message if the number is prime
} else {

System.out.println(num + " is not a prime number.");
// Prints the message if the number is not prime
}

scanner.close();
// Closes the scanner object to release system resources
}

public static boolean isPrime(int num) {
// It is a function to check if the number is prime

if (num <= 1) {
// Prime numbers are greater than 1

return false;
}

for (int i = 2; i <= Math.sqrt(num); i++) {
if (num % i == 0) {
```

```
// Checks for divisibility from 2 to the square root of the number

return false;
}
}

return true;
// It is a prime number if the number is not divisible by any number in the range
}
}
```