

```

package Assignment2;

public class Question1 {
// Print 1 to n without using loops
    public static void print(int n, int a)
    {
        if(n>a)
        {
            return;
        }
        System.out.print(n);
        print(n + 1, a);
    }

    public static void main(String[] args) {
        print(1, 10);
    }
}

package Assignment2;

import java.util.Scanner;

public class Question2 {
//sum of natural numbers
    public static int question2(int n)
    {
        if (n == 1) {
            return 1;
        }
        else {
            return n + question2(n-1);
        }
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int n = sc.nextInt();
        System.out.println("Sum of first " + n + " natural number is : " +
question2(n));
        sc.close();
    }
}

package Assignment2;

public class Question3 {
//Mean of array using recursion

```

```

    public static double findMean(int arr[], int n)
    {
        if (n == 0)
        {
            return 0;
        }
        else
        {
            return (arr[n - 1] + findMean(arr, n - 1))/n;
        }
    }

    public static void main(String[] args) {
        int arr[] = {1, 2, 3, 4, 5};
        double mean = findMean(arr, arr.length);
        System.out.println("Mean of the array is : " + mean);
    }
}

package Assignment2;

import java.util.Arrays;

public class Question4 {
    // sum of array elements using recursion
    public static int sum(int arr[])
    {
        if (arr.length == 0)
        {
            return 0;
        }
        return arr[0] + sum(Arrays.copyOfRange(arr, 1, arr.length));
    }

    public static void main(String[] args) {
        int arr[] = {10, 20, 50, 30, 40};
        int sum = sum(arr);
        System.out.println("sum of array elements is : " + sum);
    }
}

package Assignment2;

import java.util.Scanner;

public class Question5 {
    //Decimal to binary number using recursion
    public static String decimalToBinary(int decimalNumber)
    {
        if(decimalNumber == 0)

```

```

        {
            return "0";
        }
        else
        {
            return decimalToBinary(decimalNumber / 2) + decimalNumber % 2;
        }
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter decimal number : ");
        int decimalNumber = sc.nextInt();
        String binaryNumber = decimalToBinary(decimalNumber);
        System.out.println("Binary equivalent of " + decimalNumber + " is " +
binaryNumber);
        sc.close();
    }
}
package Assignment2;

import java.util.Scanner;

public class Question6 {
    //sum of digit of a number using recursion
    public static int sumOfDigits(int n)
    {
        if(n == 0)
        {
            return 0;
        }
        else
        {
            return n % 10 + sumOfDigits(n/10);
        }
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int num = sc.nextInt();
        System.out.println("sum of digits of " + num + " is " +
sumOfDigits(num));
        sc.close();
    }
}

package Assignment2;

public class Question7 {

```

```
//reverse of string using recursion
public String reverse(String str)
{
    if ((str == null)|| (str.length() <= 1))
        return str;
    return reverse(str.substring(1)) + str.charAt(0);
}
public static void main(String[] args) {
    String str = "Hello World!";
    String reversedStr = new Question7().reverse(str);
    System.out.println(reversedStr);
}
}

package Assignment2;

public class Question8 {
    // Length of string using recursion
    public static int stringLength(String str)
    {
        if (str.isEmpty()) {
            return 0;
        } else {
            return 1 + stringLength(str.substring(1));
        }
    }
    public static void main(String[] args) {
        String str = "Hello, World!";
        int length = stringLength(str);
        System.out.println("Length of string is: " + length);
    }
}
}
```

```
package Assignment2;

public class Question9 {
    // Tail recursion to calculate sum of array elements
    static int arrSum(int []array, int size, int sum)
    {
        if (size == 0)
            return sum;
        return arrSum(array, size - 1, sum + array[size - 1]);
    }

    public static void main(String[] args)
    {
        int array[] = { 2, 55, 1, 7 };
    }
}
```

```

        int size = array.length;
        System.out.print(arrSum(array, size, 0));
    }
}

```

```

package Assignment2;

public class Question10 {
    // Recursive function to check if a string is palindrome
    public static boolean isPalindrome(String str) {
        if (str.length() == 0 || str.length() == 1) {
            return true;
        }

        if (str.charAt(0) != str.charAt(str.length() - 1)) {
            return false;
        }

        return isPalindrome(str.substring(1, str.length() - 1));
    }

    public static void main(String[] args) {
        String str = "nayan";
        boolean isPalindrome = isPalindrome(str);

        if (isPalindrome) {
            System.out.println(str + " is a palindrome.");
        } else {
            System.out.println(str + " is not a palindrome.");
        }
    }
}

```

```

package Assignment2;

public class Question11 {
    // Print Fibonacci Series in reverse order using Recursion
    public static void main(String[] args) {
        int n = 10;
        printReverseFibonacci(n);
    }

    public static void printReverseFibonacci(int n) {
        if (n <= 1) {
            System.out.println(n);
        } else {

```

```
        printReverseFibonacci(n - 1);
        System.out.println(fibonacci(n));
    }
}

public static int fibonacci(int n) {
    if (n <= 1) {
        return n;
    } else {
        return fibonacci(n - 1) + fibonacci(n - 2);
    }
}
}
```