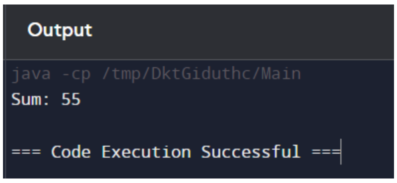
09-08-2024

1] Add a series of numbers using recursion.

```
public class Main {
    public static void main(String[] args) {
        int sum = addNumbers(1, 10);
        System.out.println("Sum: " + sum);
    }

    public static int addNumbers(int start, int end) {
        if (start > end) {
            return 0;
        }
        return start + addNumbers(start + 1, end);
    }
}
```



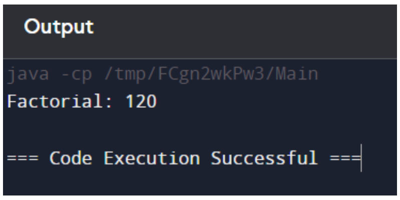
```
java -cp /tmp/DktGiduthc/Main
Sum: 55

=== Code Execution Successful ===
```

2] Factorial using recursion.

```
public class Main {
    public static void main(String[] args) {
        int factorial = calculateFactorial(5);
        System.out.println("Factorial: " + factorial);
    }

    public static int calculateFactorial(int n) {
        if (n == 0) {
            return 1;
        }
        return n * calculateFactorial(n - 1);
    }
}
```



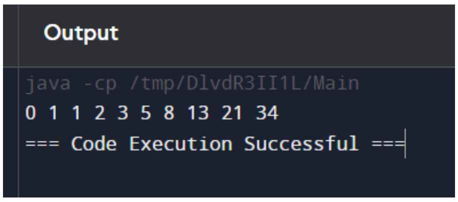
```
Output
java -cp /tmp/FCgn2wkPw3/Main
Factorial: 120

=== Code Execution Successful ===
```

3] Fibonacci series using recursion.

```
public class Main {
    public static void main(String[] args) {
        for (int i = 0; i < 10; i++) {
            System.out.print(fibonacci(i) + " ");
        }
    }

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

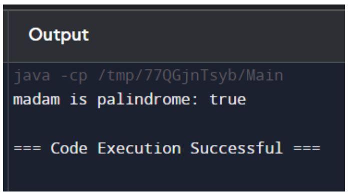


```
Output
java -cp /tmp/DlvdR3II1L/Main
0 1 1 2 3 5 8 13 21 34
=== Code Execution Successful ===
```

4] Check palindrome or not using recursion.

```
public class Main {
    public static void main(String[] args) {
        String str = "madam";
        boolean isPalindrome = isPalindrome(str, 0, str.length() - 1);
        System.out.println(str + " is palindrome: " + isPalindrome);
    }

    public static boolean isPalindrome(String str, int start, int end) {
        if (start >= end) {
            return true;
        }
        if (str.charAt(start) != str.charAt(end)) {
            return false;
        }
        return isPalindrome(str, start + 1, end - 1);
    }
}
```



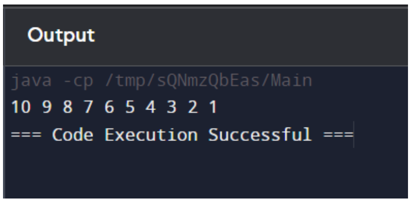
```
Output
java -cp /tmp/77QGjnTsyb/Main
madam is palindrome: true

=== Code Execution Successful ===
```

5] Print a series of numbers in reverse using recursion.

```
public class Main {
    public static void main(String[] args) {
        printReverse(1, 10);
    }

    public static void printReverse(int start, int end) {
        if (start > end) {
            return;
        }
        printReverse(start + 1, end);
        System.out.print(start + " ");
}
}
```



```
Output
java -cp /tmp/sQNmzQbEas/Main
10 9 8 7 6 5 4 3 2 1
=== Code Execution Successful ===
```