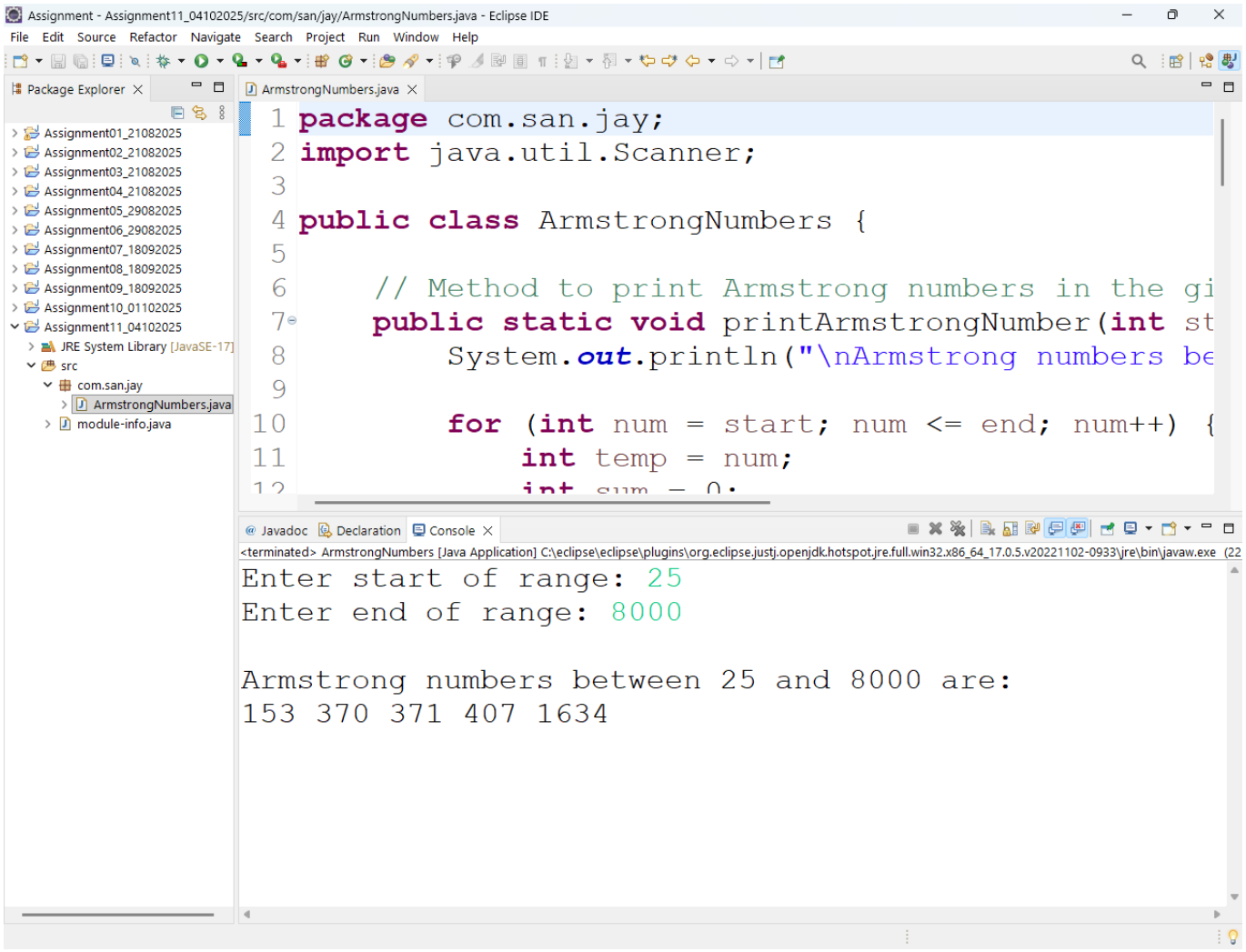
Session-6 Lab

ASSIGNMENT 13

```
package com.san.jay;

import java.util.Scanner;

public class ArmstrongNumbers {

	// Method to print Armstrong numbers in the given range

		public static void printArmstrongNumber(int start, int end) {

		System.out.println("\nArmstrong numbers between " + start + " and " + end + " are:");

		for (int num = start; num <= end; num++) {

		int temp = num;

		int sum = 0;

		// Count number of digits

		int digits = 0;

		int n = temp;

		while (n > 0) {

		digits++;

		n = n / 10;

		}

		// Calculate sum of digits raised to power 'digits' (using loop instead of Math.pow)

		n = temp;

		while (n > 0) {

		int digit = n % 10;

		// find digit^digits manually using loop

		int power = 1;

		for (int i = 1; i <= digits; i++) {

		power *= digit;

		}

		sum += power;

		n = n / 10;

		}
```

```
            // Check if number is Armstrong
            if (sum == num) {
            System.out.print(num + " ");
            }
            }
            }
            // Main method
            public static void main(String[] args) {
            Scanner sc = new Scanner(System.in);
            // Input range from user
            System.out.print("Enter start of range: ");
            int start = sc.nextInt();
            System.out.print("Enter end of range: ");
            int end = sc.nextInt();
            // Call the method
            printArmstrongNumber(start, end);
            sc.close();
        }
}
```

ASSIGNMENT 13 – OUTPUT

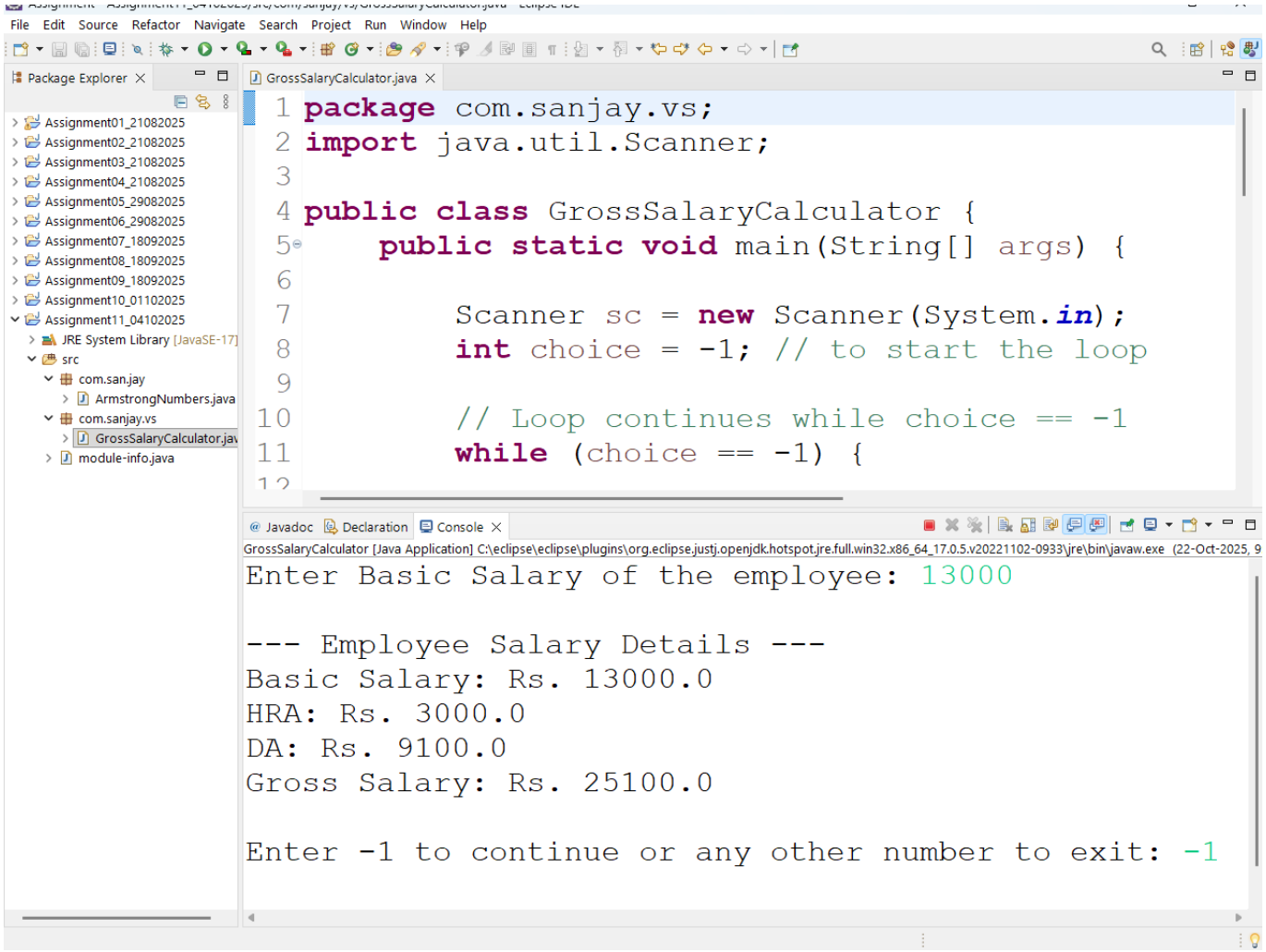


ASSIGNMENT 14

```
package com.sanjay.vs;

import java.util.Scanner;

	public class GrossSalaryCalculator {

		public static void main(String[] args) {

		Scanner sc = new Scanner(System.in);

		int choice = -1; // to start the loop

		// Loop continues while choice == -1

		while (choice == -1) {

		// Take input for basic salary

		System.out.print("Enter Basic Salary of the employee: ");

		double basic = sc.nextDouble();

		double hra, da, gross;

		// Condition to calculate HRA and DA

		if (basic > 15000) {

		hra = 0.20 * basic; // 20%

		da = 0.60 * basic; // 60%

		} else {

		hra = 3000;

		da = 0.70 * basic; // 70%

		}

		// Calculate gross salary

		gross = basic + hra + da;

		// Display result

		System.out.println("\n--- Employee Salary Details ---");

		System.out.println("Basic Salary: Rs. " + basic);

		System.out.println("HRA: Rs. " + hra);

		System.out.println("DA: Rs. " + da);

		System.out.println("Gross Salary: Rs. " + gross);

		// Ask user if they want to continue
```

```
            System.out.print("\nEnter -1 to continue or any other number to exit: ");
            choice = sc.nextInt();
            System.out.println();
            }
            System.out.println("Program terminated. Thank you!");
            sc.close();
        }
}
```

ASSIGNMENT 14 – OUTPUT



ASSIGNMENT 15

```
package com.san.jayvs;

import java.util.Scanner;

public class CountOddEven {
```

```
    public static void main(String[] args) {
                        Scanner sc = new Scanner(System.in);
        int evenCount = 0;
        int oddCount = 0;
        int num;
        System.out.println("Enter numbers one by one (Enter -1 to stop):");
        // Loop until user enters -1
        while (true) {
        System.out.print("Enter a number: ");
        num = sc.nextInt();
        if (num == -1) { // exit condition
        break;
        }
        if (num % 2 == 0) {
        evenCount++;
        } else {
        oddCount++;
        }
        }
        // Display results
        System.out.println("\n--- Result ---");
        System.out.println("Total Even Numbers: " + evenCount);
        System.out.println("Total Odd Numbers: " + oddCount);
        sc.close();
    }
}
```

ASSIGNMENT 15 – OUTPUT