

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);

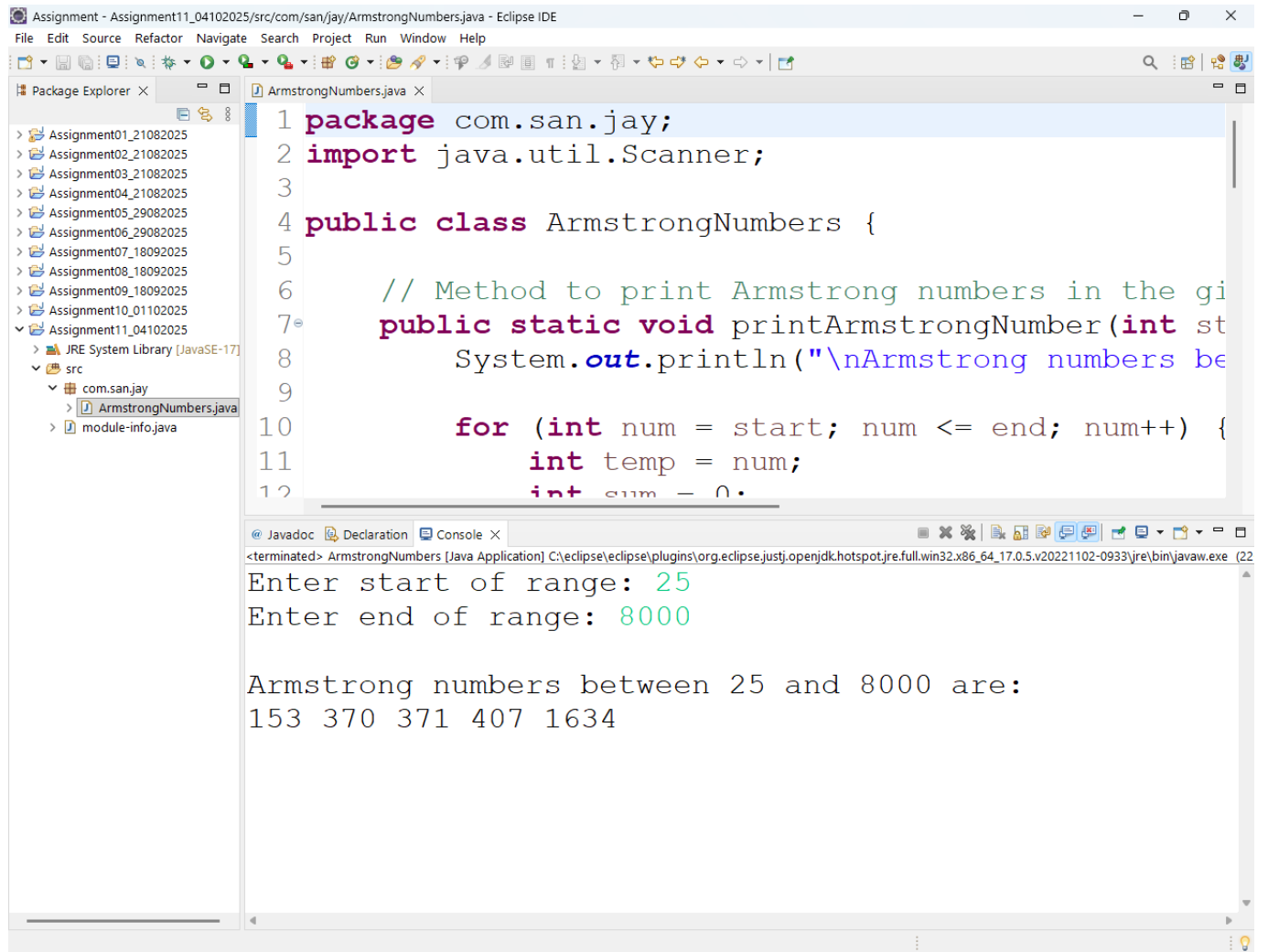
    // Input range from user
    System.out.print("Enter start of range: ");
    int start = sc.nextInt();

    System.out.print("Enter end of range: ");
    int end = sc.nextInt();

    // Call the method
    printArmstrongNumber(start, end);
    sc.close();
}
}

```

ASSIGNMENT 13 – OUTPUT



The screenshot displays the Eclipse IDE interface. The Package Explorer on the left shows a project structure with multiple assignments, with 'Assignment11_04102025' selected. Inside this project, the 'src' folder contains 'com.san.jay', which in turn contains 'ArmstrongNumbers.java'. The main editor window shows the code for 'ArmstrongNumbers.java'. The code defines a package, imports the Scanner class, and creates a public class 'ArmstrongNumbers' with a static method 'printArmstrongNumber' that takes start and end values and prints the Armstrong numbers in the range. The console window at the bottom shows the execution of the program, where the user entered '25' for the start and '8000' for the end, resulting in the output of Armstrong numbers between 25 and 8000.

```
1 package com.san.jay;
2 import java.util.Scanner;
3
4 public class ArmstrongNumbers {
5
6     // Method to print Armstrong numbers in the gi
7     public static void printArmstrongNumber(int st
8         System.out.println("\nArmstrong numbers be
9
10        for (int num = start; num <= end; num++) {
11            int temp = num;
12            int sum = 0;
```

<terminated> ArmstrongNumbers [Java Application] C:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v20221102-0933\jre\bin\javaw.exe (22

Enter start of range: 25
Enter end of range: 8000

Armstrong numbers between 25 and 8000 are:
153 370 371 407 1634

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

The screenshot shows the Eclipse IDE with the following components:

- Package Explorer:** Shows a project structure with assignments and a package named `com.sanjay` containing `GrossSalaryCalculator.java`.
- Source Editor:** Displays the code for `GrossSalaryCalculator.java`:


```

1 package com.sanjay.vs;
2 import java.util.Scanner;
3
4 public class GrossSalaryCalculator {
5     public static void main(String[] args) {
6
7         Scanner sc = new Scanner(System.in);
8         int choice = -1; // to start the loop
9
10        // Loop continues while choice == -1
11        while (choice == -1) {
12

```
- Console:** Shows the program's output:


```

GrossSalaryCalculator [Java Application] C:\eclipse\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v20221102-0933\jre\bin\javaw.exe (22-Oct-2025, 9
Enter Basic Salary of the employee: 13000

--- Employee Salary Details ---
Basic Salary: Rs. 13000.0
HRA: Rs. 3000.0
DA: Rs. 9100.0
Gross Salary: Rs. 25100.0

Enter -1 to continue or any other number to exit: -1

```

ASSIGNMENT 15

```

package com.sanjayvs;

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);

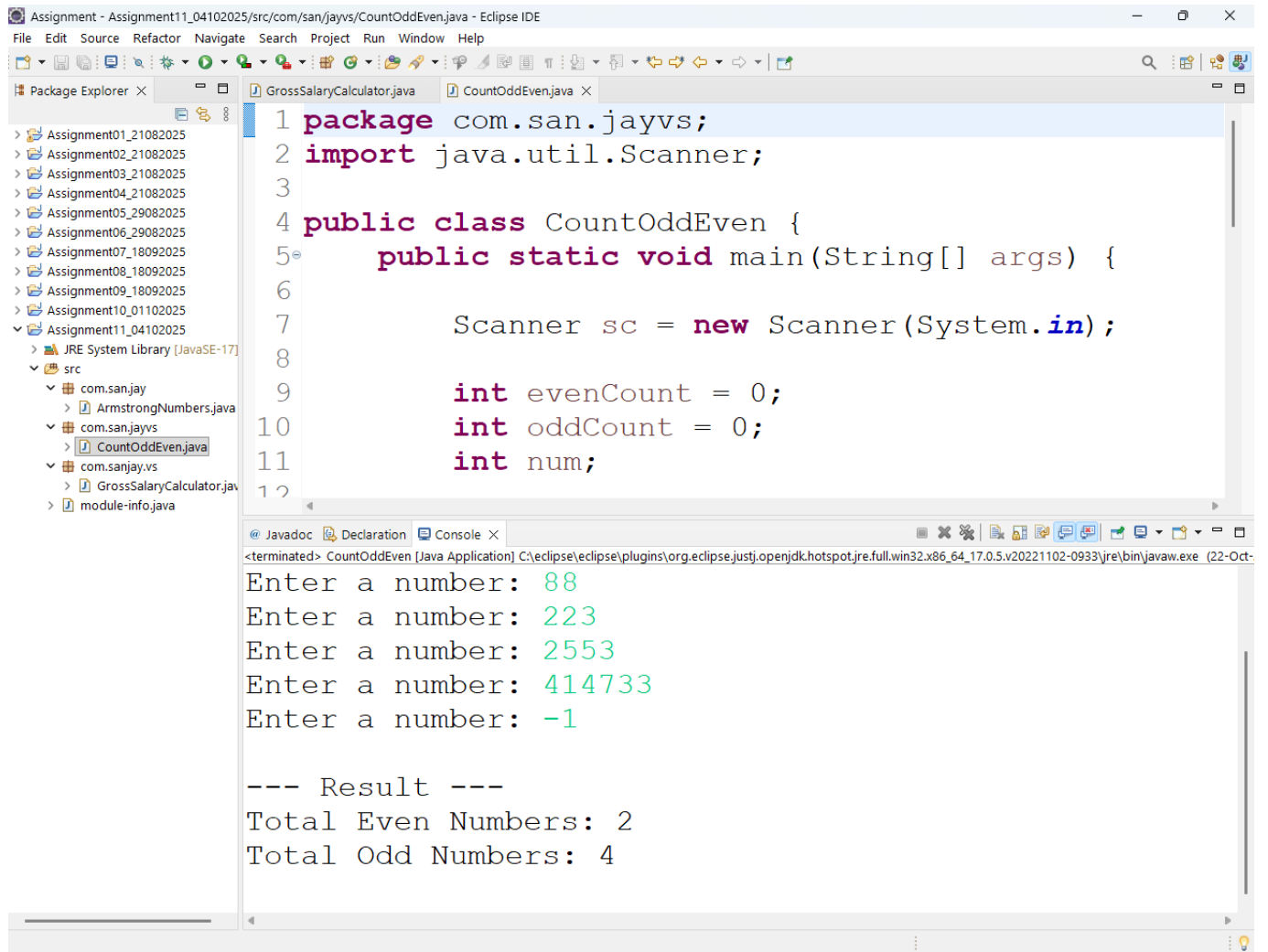
    sc.close();

}

}

```

ASSIGNMENT 15 – OUTPUT



The screenshot displays the Eclipse IDE interface. The Package Explorer on the left shows a project structure with a package named `com.san.jayvs` containing the file `CountOddEven.java`. The main editor window shows the source code of `CountOddEven.java`, which is a Java class with a `main` method that uses a `Scanner` to read input numbers and counts even and odd numbers. The console window at the bottom shows the execution output, including the input numbers and the final result.

```
1 package com.san.jayvs;
2 import java.util.Scanner;
3
4 public class CountOddEven {
5     public static void main(String[] args) {
6
7         Scanner sc = new Scanner(System.in);
8
9         int evenCount = 0;
10        int oddCount = 0;
11        int num;
12
```

Console Output:

```
<terminated> CountOddEven [Java Application] C:\eclipse\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v20221102-0933\jre\bin\javaw.exe (22-Oct-2022 10:10:10)
Enter a number: 88
Enter a number: 223
Enter a number: 2553
Enter a number: 414733
Enter a number: -1

--- Result ---
Total Even Numbers: 2
Total Odd Numbers: 4
```