Experiment 5

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Subject Name: PBLJ **Subject Code: 22CST-368**

1. **Aim** : Write a Java program to calculate the sum of a list of integers using autoboxing and unboxing. Include methods to parse strings into their respective wrapper classes (e.g., Integer.parseInt()).

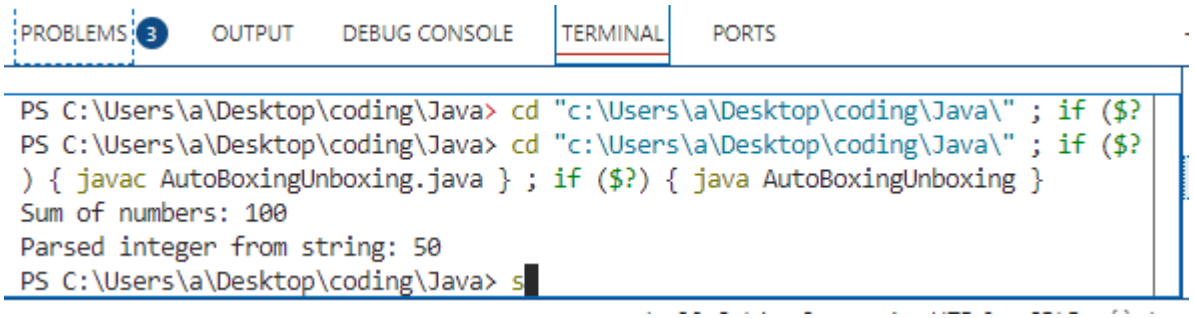
2. **Objective:**
   - To develop a Java program that demonstrates **autoboxing and unboxing** by calculating the sum of a list of integers.
   - The program will also include methods to **convert string values into wrapper class objects** using functions like Integer.parseInt().

3. **Algorithm:**

```
import java.util.ArrayList;

public class AutoBoxingUnboxing {

  // Method to parse a string into an Integer using Integer.parseInt()
  public static Integer parseStringToInteger(String number) {
    return Integer.parseInt(number); // Autoboxing
  }

  // Method to calculate the sum of a list of integers (Autoboxing & Unboxing)
  public static int calculateSum(ArrayList<Integer> numbers) {
    int sum = 0;
    for (Integer num : numbers) {
      sum += num; // Unboxing happens here
    }
    return sum;
  }

  public static void main(String[] args) {
    ArrayList<Integer> numbers = new ArrayList<>();
```

```
        // Autoboxing: Adding primitive int values as Integer objects
        numbers.add(10);
        numbers.add(20);
        numbers.add(30);
        numbers.add(40);

        // Calculate and display the sum
        int totalSum = calculateSum(numbers);
        System.out.println("Sum of numbers: " + totalSum);

        // Parsing a string into an Integer
        String strNumber = "50";
        Integer parsedValue = parseStringToInteger(strNumber);
        System.out.println("Parsed integer from string: " + parsedValue);
    }
}
```

4. OUTPUT:



5. Learning Outcome:

- **Autoboxing & Unboxing** – Understand how Java automatically converts between primitive types (int) and wrapper classes (Integer).
- **String Parsing into Wrapper Classes** – Learn how to convert string values into numerical types using Integer.parseInt().
- **Working with Collections** – Gain experience in using ArrayList<Integer> to store and manipulate numbers dynamically.
- **Efficient Data Processing** – Develop the ability to iterate through lists and perform operations like summation efficiently.
- **Exception-Free Type Handling** – Learn how Java handles data type conversions smoothly without explicit casting.