



Experiment 5.1

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Subject Name: PBLJ Lab

Subject Code: 22CSH-359

1. Aim: To develop a Java program that demonstrates autoboxing, unboxing, and parsing of strings into integers using `Integer.parseInt()` to calculate the sum of a list of integers.

2. Objective:

- Implement autoboxing to add integers to a list.
- Use unboxing to retrieve integer values from the list for sum calculation.
- Handle string parsing using `Integer.parseInt()` with exception handling.
- Ensure robustness by skipping invalid numbers during parsing.

3. Implementation/Code:

```
import java.util.*;

public class IntegerSumCalculator {

    public static Integer parseStringToInteger(String str) {

        try {

            return Integer.parseInt(str);

        } catch (NumberFormatException e) {

            System.out.println("Invalid number format: " + str);

            return null;

        }

    }

}
```



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```
public static int calculateSum(List<Integer> numbers) {  
    return numbers.stream().mapToInt(Integer::intValue).sum();  
}  
  
public static void main(String[] args) {  
    List<String> inputs = Arrays.asList("10", "20", "30", "40", "50");  
    List<Integer> numbers = new ArrayList<>();  
    for (String input : inputs) {  
        Integer num = parseInt(input);  
        if (num != null) numbers.add(num);  
    }  
    System.out.println("The sum of the list is: " + calculateSum(numbers));  
    inputs = Arrays.asList("100", "200", "300");  
    numbers.clear();  
    for (String input : inputs) {  
        Integer num = parseInt(input);  
        if (num != null) numbers.add(num);  
    }  
    System.out.println("The sum of the list is: " + calculateSum(numbers));  
    inputs = Arrays.asList("50", "invalid", "70");  
    numbers.clear();  
    for (String input : inputs) {  
        Integer num = parseInt(input);  
        if (num != null) numbers.add(num);  
    }
```



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```
    }  
    System.out.println("The sum of the list is: " + calculateSum(numbers));  
}  
}
```

4. Output

```
PS D:\java lab> cd "d:\java lab\" ;  
Akshat Srivastava  
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The sum of the list is: 150  
The sum of the list is: 600  
Invalid number format: invalid  
The sum of the list is: 120
```

5. Learning Outcome:

- Understand and apply autoboxing and unboxing in Java.
- Effectively use wrapper classes and exception handling.
- Parse strings into primitive data types using wrapper class methods.
- Use loops and Java Streams to process collections and calculate sums.