Experiment – 6

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Subject Name: PBLJ
Subject Code: 23CSH-304

1. Aim:

Develop a Java program using lambda expressions and Stream operations to filter students scoring above 75%, sort them by marks, and display their names.

2. Objective:

To apply filtering, sorting, and transformation operations using the Stream API in Java for concise and efficient data processing.

3. Apparatus / Input Used:

- Programming Language: Java (JDK 8 or above)
- IDE: IntelliJ / VS Code
- Classes & Methods Used: Stream, filter(), sorted(), map(), collect()

4. Procedure:

1. Define a Student class with fields: name, id, and marks.
2. Create a list of student objects.
3. Use Stream API to:
   - Filter students with marks greater than 75.
   - Sort them by marks in descending order.
   - Extract and display their names.
4. Display the final list of students who scored above 75%.

Program Code:

```
import java.util.*;
import java.util.stream.*;

class Student {
   String name; int id;
   double marks;
```

```
    Student(String name, int id, double marks) {
        this.name = name;
        this.id = id; this.marks = marks;
    }
    public String toString() { return name + " - " + marks; }
}

public class EXPERIMENT6 {
    public static void main(String[] args) {
    List<Student> students = Arrays.asList(
    new Student("Himanshu", 201, 89.3),
    new Student("Neha", 202, 95.7),
    new Student("Arjun", 203, 76.8),
    new Student("Priya", 204, 82.1),
    new Student("Vikram", 205, 67.5)
    );

        System.out.println("Students scoring above 75%:"); List<String> topStudents =
students.stream()
        .filter(s -> s.marks > 75)
        .sorted((s1, s2) -> Double.compare(s2.marks, s1.marks))
        .map(s -> s.name)
        .collect(Collectors.toList());

        topStudents.forEach(System.out::println);
    }
}
```

Sample Output:

```
PS C:\Users\ASUS\Desktop\Sem 5\PBLJ_23BCS10889_KRG-2B>  & 'C:\Program
  '-cp' 'C:\Users\ASUS\AppData\Roaming\Code\User\workspaceStorage\b6d4a
f85b6\bin' 'EXPERIMENT6'
Students scoring above 75%:
Neha
Himanshu
Priya
Arjun
PS C:\Users\ASUS\Desktop\Sem 5\PBLJ_23BCS10889_KRG-2B>
```