



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Experiment - 6

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**Subject Name:** Project Based Learning in Java

**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: Eclipse / 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 StreamStudentFilter {
    public static void main(String[] args) {
        List<Student> students = Arrays.asList(
            new Student("Ravi", 101, 85.5), new
            Student("Aditi", 102, 92.0), new
            Student("Kiran", 103, 78.0), new
            Student("Manoj", 104, 68.0),
            new Student("Tina", 105, 72.5)
        );
        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:**

Students scoring above 75%:

Aditi

Ravi

Kiran