

```
import java.util;
```

```
// Student class with Comparable for sorting
```

```
class Student implements Comparable<Student> {
```

```
    int id;
```

```
    String name;
```

```
    int marks;
```

```
    public Student(int id, String name, int marks) {
```

```
        this.id = id;
```

```
        this.name = name;
```

```
        this.marks = marks;
```

```
    }
```

```
    @Override
```

```
    public int compareTo(Student s) {
```

```
        return Integer.compare(this.marks, s.marks);
```

```
    }
```

```
    @Override
```

```
    public String toString() {
```

```
        return "ID: " + id + " | Name: " + name + " | Marks: " + marks;
```

```
    }
```

```
}
```

```
// Multithreading to calculate average marks
```

```
class AverageCalculator extends Thread {
```

```
    private List<Student> students;
```

```
public AverageCalculator(List<Student> students) {  
    this.students = students;  
}
```

```
@Override
```

```
public void run() {  
    int sum = students.stream().mapToInt(s -> s.marks).sum();  
    double avg = sum / (double) students.size();  
    System.out.println("Average Marks: " + avg);  
}  
}
```

```
public class StudentManagement {  
    public static void main(String[] args) {  
        List<Student> studentList = new ArrayList<>();  
        Map<Integer, Integer> studentMarks = new HashMap<>();  
  
        // Adding students  
        studentList.add(new Student(101, "Alice", 85));  
        studentList.add(new Student(102, "Bob", 78));  
        studentList.add(new Student(103, "Charlie", 92));  
        studentList.add(new Student(104, "David", 88));  
  
        // Populating HashMap  
        for (Student s : studentList) {  
            studentMarks.put(s.id, s.marks);  
        }  
    }  
}
```

```
// Sorting students by marks
Collections.sort(studentList);
System.out.println("Sorted Student List:");
studentList.forEach(System.out::println);

// Starting thread to calculate average marks
AverageCalculator avgThread = new AverageCalculator(studentList);
avgThread.start();
}
}
```

```
> javac StudentManagement.java
> java StudentManagement

Sorted Student List:
-----
ID: 102 | Name: Bob      | Marks: 78
ID: 101 | Name: Alice     | Marks: 85
ID: 104 | Name: David     | Marks: 88
ID: 103 | Name: Charlie    | Marks: 92
-----
Average Marks: 85.75
```