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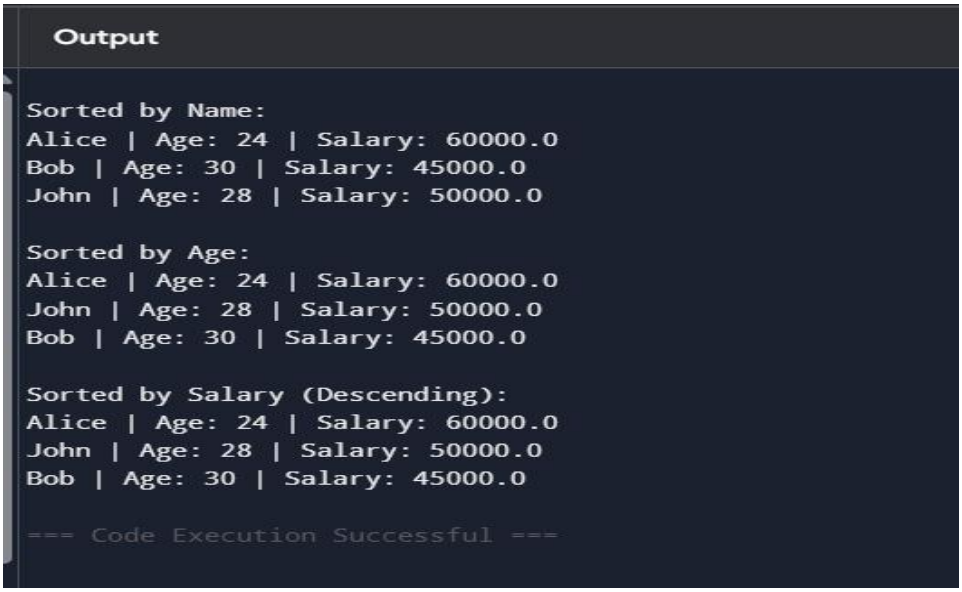
Experiment 2.2 – PartA

–

```
import java.util.*;


class Employee {
String name;
   int age;
double salary;


   Employee(String name, int
age, double salary) {
      this.name = name; this.age
= age; this.salary = salary;
   }


   @Override
```

```
    public String toString() {
return name + " | Age: " + age +
" | Salary: " + salary;

    }

}


// Main class must be named
Main in Programiz public
class Main {

    public static void main(String[]
args) {

        List<Employee> employees
= Arrays.asList(

            new Employee("John",
28, 50000),

            new Employee("Alice",
24, 60000),

            new Employee("Bob", 30,
45000)

        );



System.out.println("\nSorted by
Name:");

        employees.stream()

                .sorted((e1, e2) ->
```

```
e1.name.compareTo(e2.name))
.forEach(System.out::println);



System.out.println("\nSorted by
Age:");        employees.stream()
                .sorted((e1, e2) ->
Integer.compare(e1.age,
e2.age))

.forEach(System.out::println);



System.out.println("\nSorted by
Salary (Descending):");
employees.stream()
                .sorted((e1, e2) ->
Double.compare(e2.salary,
e1.salary))

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

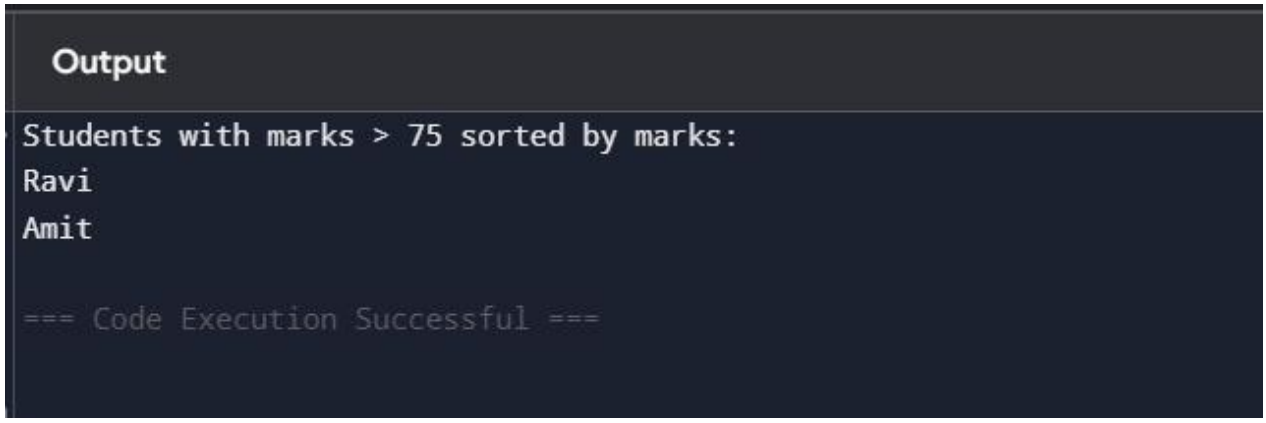


PART B –

```
import java.util.*;


class Student {

String name;

double marks;


   Student(String name, double
marks) {

      this.name = name;
this.marks = marks;

   }


   @Override

   public String toString() {
```

```
        return name + " | Marks: "
+ marks;
    }
}

// Must be Main in Programiz
public class Main {
    public static void main(String[]
args) {
        List<Student> students =
Arrays.asList(            new
Student("Ravi", 85),
            new Student("Sneha",
72),            new Student("Amit",
90),            new Student("Priya",
65)
        );


System.out.println("Students
with marks > 75 sorted by
marks:");
students.stream()
                .filter(s -> s.marks > 75)
.sorted((s1, s2) ->
```

```
Double.compare(s1.marks,
s2.marks))
            .map(s -> s.name)

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



PART C –

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

class Product {
String name;
double price;
  String category;
```

```
   Product(String name, double price, String category) {
this.name = name; this.price = price; this.category = category;
   }

   @Override     public
String toString() {
      return name + " | " + category + " | $" + price;
   }
}

// Must be Main for Programiz
public class Main {
   public static void main(String[] args) {
List<Product> products = Arrays.asList(           new
Product("Laptop", 75000, "Electronics"),           new
Product("Phone", 50000, "Electronics"),           new
Product("Shirt", 1500, "Clothing"),           new
Product("Jeans", 2500, "Clothing"),           new
Product("Fridge", 30000, "Electronics")
      );

      // Group by category
      System.out.println("Products grouped by category:");
      Map<String, List<Product>> grouped = products.stream()
.collect(Collectors.groupingBy(p -> p.category));       grouped.forEach((cat, list)
```

```
-> System.out.println(cat + " -> " + list));        // Most expensive product in
each category

        System.out.println("\nMost expensive product in each category:");
        Map<String, Optional<Product>> expensive = products.stream()
                .collect(Collectors.groupingBy(
p -> p.category,
                    Collectors.maxBy(Comparator.comparingDouble(p -> p.price))
                ));
        expensive.forEach((cat, prod) -> System.out.println(cat + " -> " + prod.get()));


        // Average price of all products
double avgPrice = products.stream()
                .collect(Collectors.averagingDouble(p -> p.price));
        System.out.println("\nAverage Price of All Products: " + avgPrice);
    }
}
```