Assignments on Generics

1) Use a HashSet to hold Employee Objects. Upon running the application, the details of the employees added to the HashSet should be displayed.

Employee <<class>>

|-- id

|-- name

|-- salary

|-- department

|-- displayDetails()

Feel free to add properties and methods to Employee Class

Note: if we try to store any object other than Employee Object in HashSet, we should not be allowed to.

```
1  package Generics;
2  import java.util.HashSet;
3      class Employee{
4          private int id;
5          private String name;
6          private int salary;
7          private String department;
8          public Employee(int id, String name, int salary, String department) {
9          super();
10         this.id=id;
11         this.name=name;
12         this.salary=salary;
13         this.department=department;
14         }
15         public void displayDetails() {
16             System.out.println("Id:"+id+"\n"+"Name"+name+"\n"+"Salary:"+salary+"\n"+"Department:"+department);
17         }
18     }
19     public class Generics1 {
20          public static void main(String[] args) {
21                 Employee employee1=new Employee(546, "Prem", 50000, "IT");
22                 Employee employee2=new Employee(567, "Das", 25000, "NIT");
23                 Employee employee3=new Employee(597, "Lee", 50000, "MARKETING");
24                 HashSet<Employee> hashSet=new HashSet<>();
25                 hashSet.add(employee1);
26                 hashSet.add(employee2);
27                 hashSet.add(employee3);
28                 hashSet.forEach(n -> n.displayDetails());
29             }
30     }
```

```
<terminated> Generics1 [Java Application] C:\Users\valaanus\.p2\poo
Id:546
NamePrem
Salary:50000
Department:IT
Id:597
NameLee
Salary:50000
Department:MARKETING
Id:567
NameDas
Salary:25000
Department:NIT
```

2) Write an application to hold 10 random int values as keys and 10 random double values as values for a HashMap. Print the data store in the HashMap. **Note**: Keys can only be int and values double

```java
package Generics;
import java.util.HashMap;
public class Generics2 {
        public static void main(String[] args) {
            HashMap<Integer, Double> hm=new HashMap<>();
            hm.put(647, 4.28);
            hm.put(463, 6.28);
            hm.put(646, 98.28);
            hm.put(378, 47.28);
            hm.put(347, 48.28);
            hm.put(753, 7.28);
            hm.put(257, 49.28);
            hm.put(578, 95.28);
            hm.put(477, 89.28);
            hm.put(358, 46.28);
            hm.forEach((K,V) -> System.out.println(K+" "+V));
            }
}

```

```
<terminated> Generics2 [Java Application] C:\Users\
753 7.28
257 49.28
578 95.28
646 98.28
358 46.28
647 4.28
378 47.28
347 48.28
477 89.28
463 6.28
```

3) Write a generic method to exchange the positions of two different elements in an array.

```java
package Generics;
import java.util.ArrayList;
    class Exchange<E>{
        ArrayList<E> arr = new ArrayList<>();
        public void swap(E a, E b) {
            arr.add(b);
            arr.add(a);
        }
    }
    public class Generics3 {
        public static void main(String[] args) {
            ArrayList<Integer> arr = new ArrayList<>();
            arr.add(1);
            arr.add(2);
            arr.add(3);
            arr.add(4);
            arr.add(5);
            arr.add(6);
            Exchange<Integer> e=new Exchange<>();
            for(int i=1;i<arr.size();i+=2) {
                e.swap(arr.get(i-1), arr.get(i));
            }
            for(Integer a:e.arr) {
                System.out.println(a);
            }
        }
}
```

```
<terminated> Generics3 [Java Application] C:\Use
2
1
4
3
6
5
```