Dt : 10/11/2022

Ex-program : DemoSet1.java

```
package maccess;
import java.util.*;
public class DemoSet1 {
	@SuppressWarnings({ "rawtypes", "unchecked", "removal" })
	public static void main(String[] args) {
		//Set object created to hold Unlimited any type of
Objects
		HashSet ob1 = new HashSet();
		ob1.add(new Integer(123));//Adding Integer Object to Set
		ob1.add(new String("NIT"));//Adding String Object to Set
		ob1.add(new StringBuffer("Java"));//Adding Buffer object
Set
		System.out.println("****display from Set<E>*****");
		System.out.println(ob1.toString());

	//Set object created to hold Unlimited Integer Objects
		HashSet<Integer> ob2 = new HashSet<Integer>();
		ob2.add(new Integer(11));
		ob2.add(new Integer(10));
		ob2.add(new Integer(16));
		System.out.println(ob2.toString());

	//Set object created to hold Unlimited String Objects
		HashSet<String> ob3 = new HashSet<String>();
		ob3.add(new String("Task"));
		ob3.add(new String("Thread"));
		ob3.add(new String("Test"));
		System.out.println(ob3.toString());

	}
}
```

o/p:

*****display from Set<E>*****

[NIT, 123, Java]

[16, 10, 11]

[Task, Test, Thread]

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Ex-Program : DemoSet2.java

```
package maccess;
import java.util.*;
public class DemoSet2 {
     @SuppressWarnings("removal")
     public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        String name=null;
        Set<Integer> ob = null;
        try(s;){
          try {
               while(true) {
                    System.out.println("****Choice*****");


System.out.println("1.HashSet\n2.LinkedHashSet\n3.TreeSet\n4.exi
t");
                    System.out.println("Enter the Choice:");
                    switch(s.nextInt()) {
                    case 1:
                         ob = new HashSet<Integer>();
                         name="HashSet";
                         break;
                    case 2:
                         ob = new LinkedHashSet<Integer>();
                         name="LinkedHashSet";
                         break;
                    case 3:
                         ob = new TreeSet<Integer>();
                         name="TreeSet";
                         break;
                    case 4:
                         System.out.println("Operations stopped
of Set");
                         System.exit(0);
                         break;
                    default:
                         System.out.println("Invalid
Choice...");
                    }//end of switch
                    System.out.println("****Operations on
"+name+"****");
                    xyz:
                    while(true) {
```

```
                        System.out.println("****Choice****");

     System.out.println("1.add\n2.remove\n3.exit");
                        System.out.println("Enter the
Choice:");
                        switch(s.nextInt()) {
                        case 1:
                             System.out.println("Enter the
ele:");
                             ob.add(new Integer(s.nextInt()));
                             System.out.println(ob.toString());
                             break;
                        case 2:
                             if(ob.isEmpty()) {
                                  System.out.println("Set is
empty...");
                             }else {
                                  System.out.println("Enter the
ele to be removed:");
                                 if(ob.remove(new
Integer(s.nextInt()))) {
                                  System.out.println("Ele
removed Successfully..");

     System.out.println(ob.toString());
                                  }else {
                                  System.out.println("Element
not founded...");
                                  }
                             }
                             break;
                        case 3:
                             System.out.println("Operations
Stopped on "+name);
                             break xyz;
                        default:
                             System.out.println("Invalid
Choice...");
                        }//end of switch
                   }//end of while

              }//end of loop
         }catch(Exception e) {e.printStackTrace();}
        }//end of try
     }
}
```

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Set<E> holding Usser defined class Objects:

BookDetails.java

```
package test;
public class BookDetails extends Object{
      //Instance Variables
    public String code,name,author;
    public float price;
    public int qty;

    //Constructor to initialize Instance variables
    public BookDetails(String code,String name,String
author,float price,int qty){
          this.code=code;
          this.name=name;
          this.author=author;
          this.price=price;
          this.qty=qty;
    }
    @Override
    public String toString()
    {
          return code+"\t"+name+"\t"+author+"\t"+price+"\t"+qty;
    }
}
```

DemoSet3.java(MainClass)

```
package maccess;

import java.util.*;

import test.*;

public class DemoSet3 {

        @SuppressWarnings("removal")

        public static void main(String[] args) {
```

```
Scanner s = new Scanner(System.in);
String name=null;
Set<BookDetails> ob = null;
try(s;){
    try {
            while(true) {
                    System.out.println("****Choice*****");
                    System.out.println("1.HashSet\n2.LinkedHashSet\n3.TreeSet\n4.exit");
                    System.out.println("Enter the Choice:");
                    switch(Integer.parseInt(s.nextLine())) {
                    case 1:
                            ob = new HashSet<BookDetails>();
                            name="HashSet";
                            break;
                    case 2:
                            ob = new LinkedHashSet<BookDetails>();
                            name="LinkedHashSet";
                            break;
                    case 3:
                            ob = new TreeSet<BookDetails>();
                            name="TreeSet";
                            break;
                    case 4:
                            System.out.println("Operations stopped of Set");
```

```
            System.exit(0);
            break;
        default:
            System.out.println("Invalid Choice...");
        }//end of switch
        System.out.println("****Operations on "+name+"****");
        xyz:
        while(true) {
            System.out.println("****Choice****");
        System.out.println("1.add\n2.remove\n3.display\n4.exit");
        System.out.println("Enter the Choice:");
        switch(Integer.parseInt(s.nextLine())) {
        case 1:
            System.out.println("Enter the code:");
            String bC=s.nextLine();
            System.out.println("Enter the name:");
            String bN=s.nextLine();
            System.out.println("Enter the author:");
            String bA=s.nextLine();
            System.out.println("Enter the price:");
            float bP = Float.parseFloat(s.nextLine());
            System.out.println("Enter the qty:");
            int bQ = Integer.parseInt(s.nextLine());
            ob.add(new BookDetails(bC,bN,bA,bP,bQ));
```

```
            System.out.println("BookDetails added Successfully..");
            break;
        case 2:
            if(ob.isEmpty()) {
                System.out.println("Set is empty...");
            }else {
                System.out.println("Enter the ele(code) to be removed:");
              String code2 = s.nextLine();
              boolean p=false;
              Iterator<BookDetails> it = ob.iterator();
              while(it.hasNext())
              {
                  BookDetails bd = (BookDetails)it.next();
                  if(bd.code.equals(code2)) {
                      p=true;
                      ob.remove(bd);
                      System.out.println("Ele removed Successfully..");
                      break;
                  }
              }//end of loop
              if(!p)
              {
                  System.out.println("Element Not found...");
              }
```

```
                    }
                    break;
                case 3:
                    System.out.println("****BookDetails****");
                    ob.forEach((k)->
                    {
                        System.out.println(k.toString());
                    });
                    break;
                case 4:
                    System.out.println("Operations Stopped on "+name);
                    break xyz;
                default:
                    System.out.println("Invalid Choice...");
                }//end of switch
                }//end of while

            }//end of loop
        }catch(Exception e) {e.printStackTrace();}
    }//end of try
        }
}
```

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