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Program 6 Develop programs for implementation of a) Vector (insert two integers, two float, three double numbers. Also find out whether 10 is present in vector or not.) b) HashMap c) Wrapper (Implement atleast 5 different methods of each)

a) Vector (insert two integers, two float, three double numbers. Also find out whether 10 is present in vector or not.)

CODE:

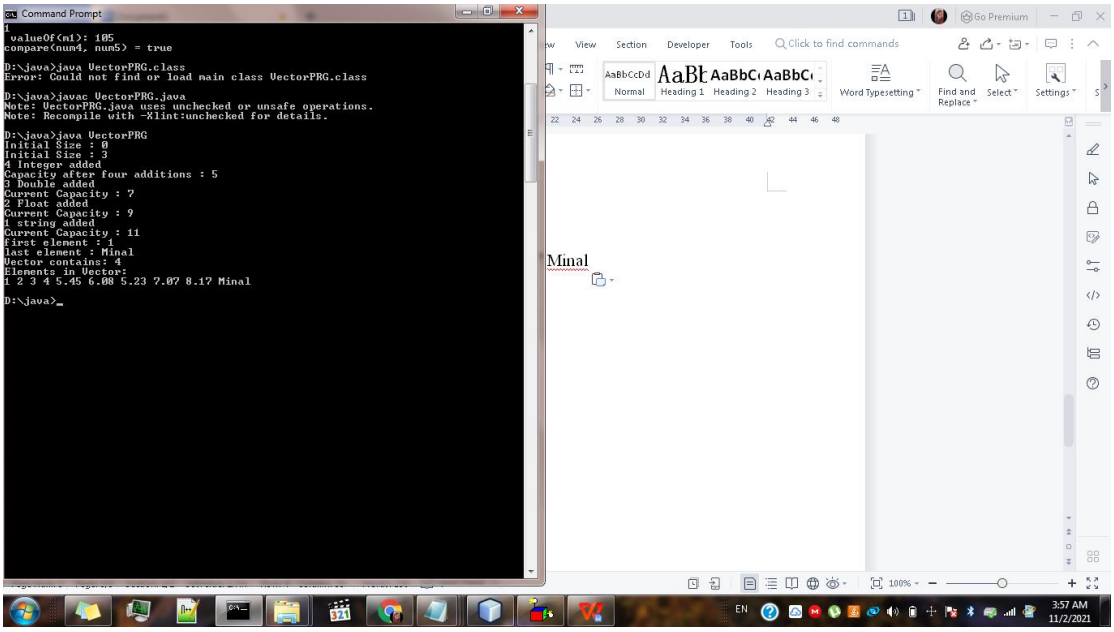
```
import java.util.*;

public class VectorPRG {


    public static void main(String[] args) {
        Vector v = new Vector(3,2);
        System.out.println("Initial Size : "+v.size());
        System.out.println("Initial Size : "+v.capacity());
        System.out.println("4 Integer added");
        v.addElement(new Integer(1));
        v.addElement(new Integer(2));
        v.addElement(new Integer(3));
        v.addElement(new Integer(4));
        System.out.println("Capacity after four additions :
"+v.capacity());
        System.out.println("3 Double added");
        v.addElement(new Double(5.45));
        v.addElement(new Double(6.08));
        v.addElement(new Double(5.23));
        System.out.println("Current Capacity : "+v.capacity());
        System.out.println("2 Float added");
```

```
        v.addElement(new Float(7.07));
        v.addElement(new Float(8.17));
        System.out.println("Current Capacity : "+v.capacity());
        System.out.println("1 string added");
        v.addElement(new String("Minal"));
        System.out.println("Current Capacity : "+v.capacity());
        System.out.println("first element : "+v.firstElement());
        System.out.println("last element : "+v.lastElement());
        if(v.contains(4)){
           System.out.println("Vector contains: 4");
        }
        Enumeration vEnum = v.elements();
        System.out.println("Elements in Vector: ");
        while(vEnum.hasMoreElements()){
           System.out.print(vEnum.nextElement()+ " ");

        }
        System.out.println();


    }

}
```

OUTPUT:

```
D:\java>java VectorPRG
Initial Size : 0
Initial Size : 3
4 Integer added
Capacity after four additions : 5
3 Double added
Current Capacity : 7
2 Float added
Current Capacity : 9
1 string added
Current Capacity : 11
```

first element : 1
last element : Minal
Vector contains: 4
Elements in Vector:
1 2 3 4 5.45 6.08 5.23 7.07 8.17 Minal



b) HashMap:

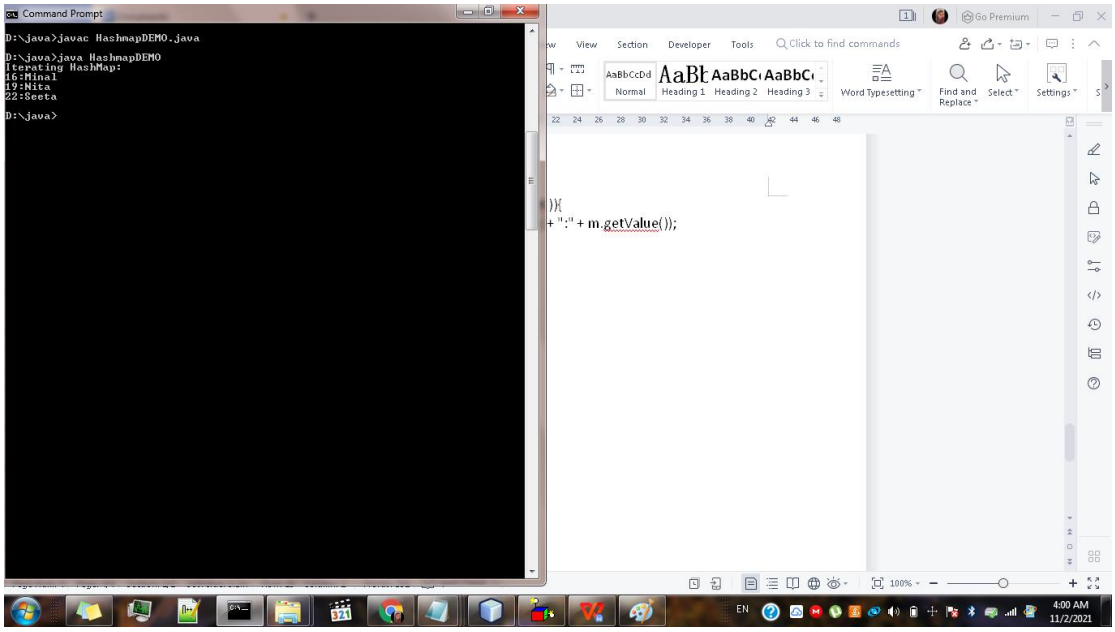
CODE:

```
import java.util.*;

public class HashmapDEMO {


   public static void main(String[] args) {
      //creating HashMap
      HashMap<Integer,String>map = new HashMap<Integer,String>();
      //put elements in Map
      map.put(22,"Seeta");
      map.put(19,"Nita");
      map.put(16,"Minal");

      System.out.println("Iterating HashMap: ");
```

```
        for(Map.Entry m : map.entrySet()){
            System.out.println(m.getKey()+ ":" + m.getValue());
        }
    }

}
```

OUTPUT:

```
D:\java>javac HashmapDEMO.java

D:\java>java HashmapDEMO
Iterating HashMap:
16:Minal
19:Nita
22:Seeta

D:\java>
```



B) Wrapper (Implement atleast 5 different methods of each)

CODE:

```
public class WrapperDEMO {

    public static void main(String[] args) {
      Integer myInt = 5;
      Double myDouble = 3.66;
      Character myChar = 'M';
      System.out.println(myInt);
      System.out.println(myDouble);
      System.out.println(myChar);

      //get value by corresponding wrapper object
      System.out.println(myInt.intValue());
      System.out.println(myDouble.doubleValue());
      System.out.println(myChar.charValue());

      //covert wrapper objects to string
      String myString = myInt.toString();
      System.out.println(myString.length());

      //convert object to primitive (unboxing)
      Float f1 = new Float(2.3);
      int i = f1.intValue();
      double d = f1.doubleValue();
      short s = f1.shortValue();
      long l = f1.longValue();
      byte b = f1.byteValue();
      float f = f1.floatValue();

      //convert primitive to object (boxing)
      int m1 = 105;
      Integer m2 = Integer.valueOf(m1);
      System.out.println(" valueOf(m1): " +m2);
```

```
        //convert string in respective primitive
        String s1 = "1234567890";
        int st = Integer.parseInt(s1);

        //compare method

          byte num4 = 11;
          byte num5 = 20;

          int a = Byte.compare(num4, num5);
          System.out.print("compare(num4, num5) = ");
          if (a == 0) {
             System.out.println("equals");
          } else if (a < 0) {
             System.out.println("true");

          } else {
             System.out.println("false");

          }


    }

}
```

OUTPUT:

```
C:\Users\KIRAN\Desktop>d:

D:\>cd java

D:\java>javac WrapperDEMO.java

D:\java>java WrapperDEMO
5
3.66
M
5
3.66
M
1
 valueOf(m1): 105
compare(num4, num5) = true
```