# Java, September 9, Lab Activity 3

Sharadindu Adhikari
19BCE2105

Naveen Kumar N Yesterday 10:57 pm
Java Programming Lab - CSE1007_L3+L4_PLB117A_FALL2021-22 Lab Activity-3

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## Lab Activity-3 [CO2 2+3 Marks]

Deadline 10/09/2021 at 11.59am for 100%, for 70% at 11/09/2021 at 11.59am

3(a) Create "Ascending" class with following member functions[2 Marks]

i. Sort()→ to accept an array of integer elements as parameter to perform ascending order based on integer numbers.
ii. Sort()→to accept an array of string elements as parameter to perform ascending order based on string.

(iii) Sort()→to accept an array of double(data type) elements as parameter to perform ascending order based on double numbers.

Create "Descending" class with following member functions

i. Sort()→ to accept an array of integer elements as parameter to perform descending order based on integer numbers.
ii. Sort()→to accept an array of string elements as parameter to perform descending order based on string.
iii. Sort()→to accept an array of double(data type) elements as parameter to perform descending order based on double numbers.

3(b) Inherit "Ascending" class to the "Test_Ascending_Sort" class, to test the functionalities of sort methods with user inputs and inherit "Descending" class to the "Test_Descending_Sort" class, to test the functionalities of sort methods with user inputs [3 Marks]

See less

**Solutions:**

3(a):

ascending.java

```
import java.util.Arrays;
public class ascending {

    public static void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
```

```
            {
                t= arr[i];    //swapping
               arr[i] = arr[j];
               arr[j] = t;
            }
        }
    }
    System.out.println();
    System.out.println("After performing ascending sort:");
    for(int i=0;i<arr.length;i++)
    {
        System.out.print(arr[i]+" ");
    }
}
public static void sort(double arr[])
{
    double t=0.0;
    for(int i=0;i<arr.length;i++)//performing sorting
    {
        for(int j=i+1;j<arr.length;j++)
        {
            if(arr[i]>arr[j])
            {
                t= arr[i];    //swapping
               arr[i] = arr[j];
               arr[j] = t;
            }
        }
    }
    System.out.println();
    System.out.println("After performing ascending sort:");
    for(int i=0;i<arr.length;i++)
    {
        System.out.print(arr[i]+" ");
    }
}
public static void sort(String arr[]) {
    for(int i=0;i<arr.length;i++)//performing sorting
    {
        for(int j=i+1;j<arr.length;j++)
        {
            if(arr[i].compareTo(arr[j])>0)
            {
                String t= arr[i];    //swapping
               arr[i] = arr[j];
               arr[j] = t;
            }
        }
    }
    System.out.println();
    System.out.println("After performing ascending sort:");
```

```
        System.out.println(Arrays.toString(arr));
    }
    public static void main(String[] args) {

        //Initialize array
        int [] a = new int [] {10,20,2,8,16};
        double []b =new double []{24.90,69.96,12.58,65.21,11.80};
        String []s = new String[]{"Andhra Pradesh","Telangana","Mizoram","Uttarakhand","
Rajasthan"};
        System.out.println("Original Array is (String):");
        System.out.print(Arrays.toString(s));
        sort(s);
        System.out.println("Original Array is (Double):");
        for(int i=0;i<b.length;i++)
        {
            System.out.print(b[i]+" ");
        }
        sort(b);
        System.out.println();
        System.out.println("Original Array is (Int):");
        for(int i=0;i<a.length;i++)
        {
            System.out.print(a[i]+" ");
        }
        sort(a);



    }
}
```

ascending - Notepad

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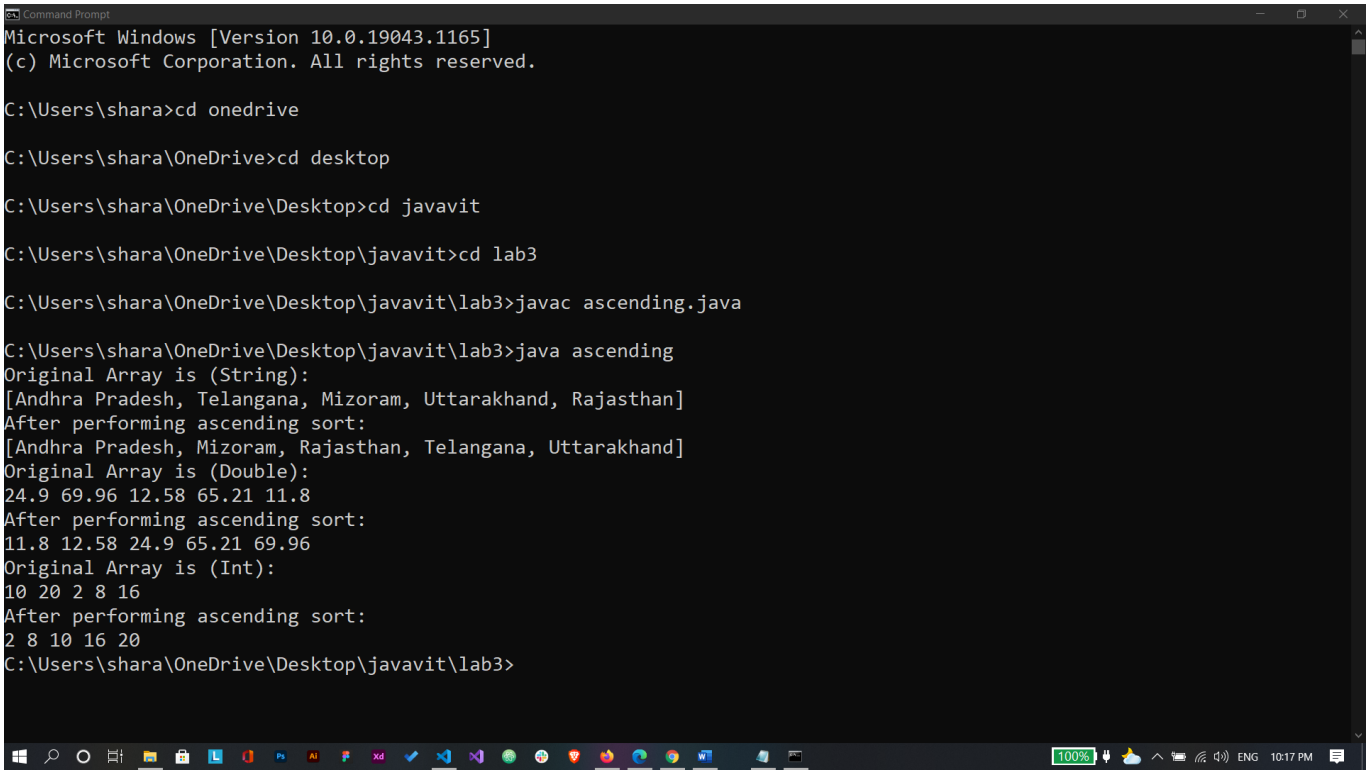
```
import java.util.Arrays;
public class ascending {

    public static void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }
    public static void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
```




## descending.java

```
import java.util.Arrays;
public class descending {

    public static void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }


        System.out.println();
        System.out.println("After performing descending sort:");
```

```
    for(int i=0;i<arr.length;i++)
    {
        System.out.print(arr[i]+" ");
    }
}


public static void sort(double arr[])
{
    double t=0.0;
    for(int i=0;i<arr.length;i++)//performing sorting
    {
        for(int j=i+1;j<arr.length;j++)
        {
            if(arr[i]<arr[j])
            {
                t= arr[i];    //swapping
               arr[i] = arr[j];
               arr[j] = t;
            }
        }
    }
    System.out.println();
    System.out.println("After performing descending sort:");
    for(int i=0;i<arr.length;i++)
    {
        System.out.print(arr[i]+" ");
    }
}


public static void sort(String arr[]) {
    for(int i=0;i<arr.length;i++)//performing sorting
    {
        for(int j=i+1;j<arr.length;j++)
        {
            if(arr[i].compareTo(arr[j])<0)
            {
                String t= arr[i];    //swapping
               arr[i] = arr[j];
               arr[j] = t;
            }
        }
    }
    System.out.println();
    System.out.println("After performing descending sort:");
    System.out.println(Arrays.toString(arr));
}


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

```
        //Initialize array
        int [] a = new int [] {10,20,2,8,16};
        double []b =new double []{24.90,69.96,12.58,65.21,11.80};
        String []s = new String[]{"Andhra Pradesh","Telangana","Mizoram","Uttarakhand","
Rajasthan"};
        System.out.println("Original Array is (String):");
        System.out.print(Arrays.toString(s));
        sort(s);
        System.out.println("Original Array is (Double):");
        for(int i=0;i<b.length;i++)
        {
            System.out.print(b[i]+" ");
        }
        sort(b);
        System.out.println();
        System.out.println("Original Array is (Int):");
        for(int i=0;i<a.length;i++)
        {
            System.out.print(a[i]+" ");
        }
        sort(a);



    }
}
```

descending - Notepad

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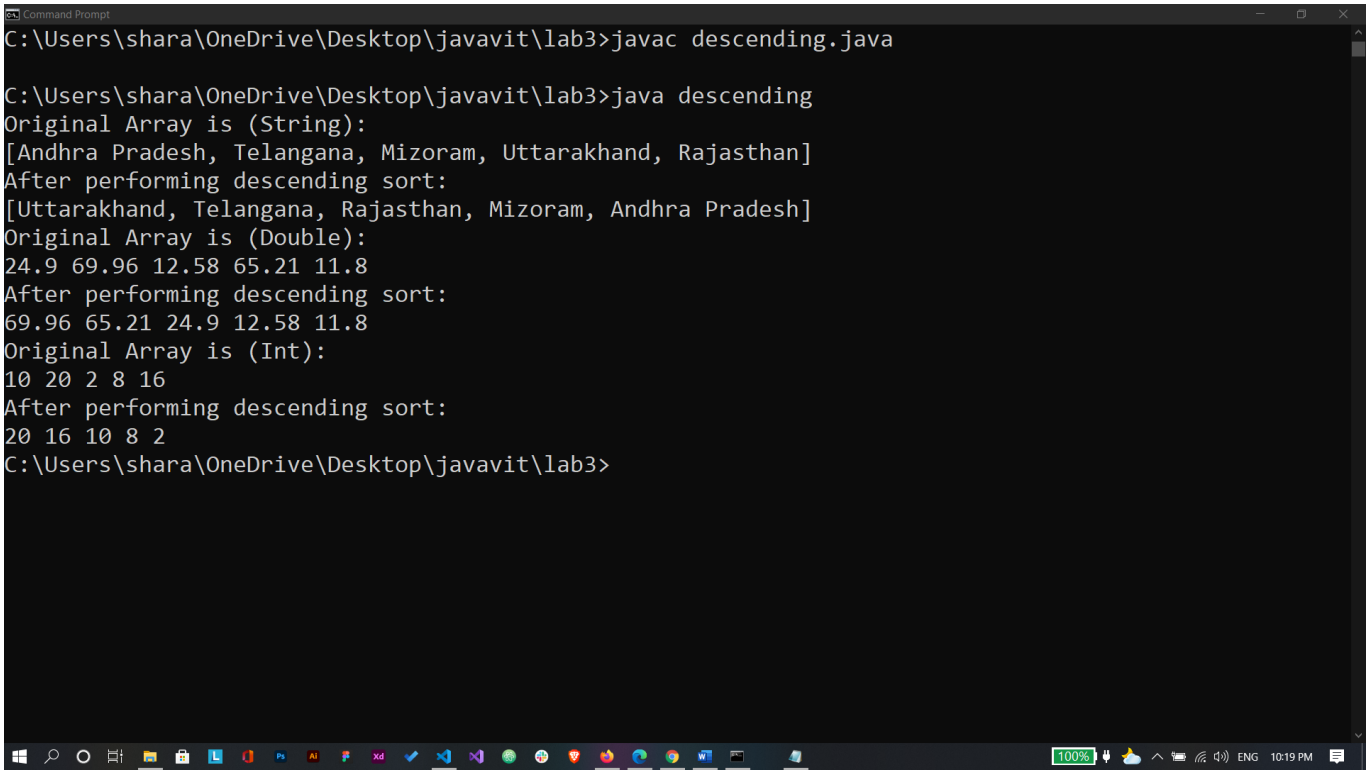
```
import java.util.Arrays;
public class descending {

    public static void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing descending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }
    public static void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing descending sort:");
```




---

## 3(b):

**testinga.java**

```java
import java.util.Arrays;
class ascending {

    public  void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
```

```
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }

    public  void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }

        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }

    public  void sort(String arr[]) {
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i].compareTo(arr[j])>0)
                {
                    String t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
        System.out.println(Arrays.toString(arr));
    }

}

class Test_Ascending_Sort extends ascending{
```

```
    @Override
    public void sort(String[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }
    @Override
    public void sort(int[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }
    @Override
    public void sort(double[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }

}

public class testinga{
public  static void main(String[] args) {

    Test_Ascending_Sort test= new Test_Ascending_Sort();
    int [] a = new int [] {10,20,2,8,16};
    double []b =new double []{24.90,69.96,12.58,65.21,11.80};
    String []s = new String[]{"Andhra Pradesh","Telangana","Mizoram","Uttarakhand","Raja
sthan"};
    System.out.println("Original Array is (String):");
        System.out.print(Arrays.toString(s));
        test.sort(s);
        System.out.println("Original Array is (Double):");
        for(int i=0;i<b.length;i++)
        {
            System.out.print(b[i]+" ");
        }
        test.sort(b);
        System.out.println();
        System.out.println("Original Array is (Int):");
        for(int i=0;i<a.length;i++)
        {
            System.out.print(a[i]+" ");
        }
        test.sort(a);

    }
}
```

testinga - Notepad

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```
import java.util.Arrays;
class ascending {

    public  void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }
    public  void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
```

Command Prompt

```
C:\Users\shara\OneDrive\Desktop\javavit\lab3>javac testinga.java

C:\Users\shara\OneDrive\Desktop\javavit\lab3>java testinga
Original Array is (String):
[Andhra Pradesh, Telangana, Mizoram, Uttarakhand, Rajasthan]
After performing ascending sort:
[Andhra Pradesh, Mizoram, Rajasthan, Telangana, Uttarakhand]
Original Array is (Double):
24.9 69.96 12.58 65.21 11.8
After performing ascending sort:
11.8 12.58 24.9 65.21 69.96
Original Array is (Int):
10 20 2 8 16
After performing ascending sort:
2 8 10 16 20
C:\Users\shara\OneDrive\Desktop\javavit\lab3>
```

**testingd.java**

```
import java.util.Arrays;
class descending {

    public  void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }

    public  void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }

        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
```

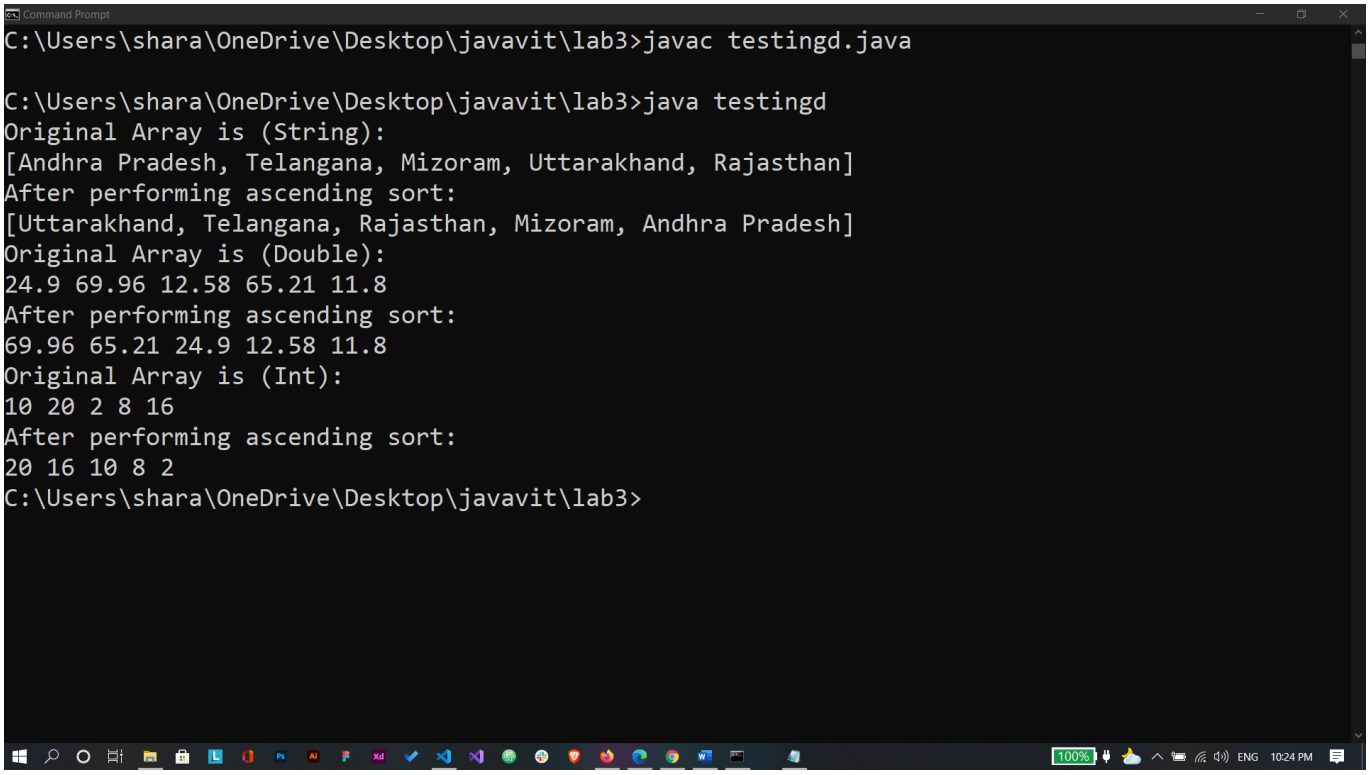
```
    }

    public  void sort(String arr[]) {
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i].compareTo(arr[j])<0)
                {
                    String t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }

        System.out.println();
        System.out.println("After performing ascending sort:");
        System.out.println(Arrays.toString(arr));
    }

}

class Test_Descending_Sort extends descending{


    @Override
    public void sort(String[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }

    @Override
    public void sort(int[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }

    @Override
    public void sort(double[] arr) {
        // TODO Auto-generated method stub
        super.sort(arr);
    }

}

public class testingd{
public  static void main(String[] args) {

    Test_Descending_Sort test= new Test_Descending_Sort();
    int [] a = new int [] {10,20,2,8,16};
```

```
    double []b =new double []{24.90,69.96,12.58,65.21,11.80};
    String []s = new String[]{"Andhra Pradesh","Telangana","Mizoram","Uttarakhand","Raja
sthan"};

    System.out.println("Original Array is (String):");
        System.out.print(Arrays.toString(s));
        test.sort(s);
        System.out.println("Original Array is (Double):");
        for(int i=0;i<b.length;i++)
        {
            System.out.print(b[i]+" ");
        }

        test.sort(b);
        System.out.println();
        System.out.println("Original Array is (Int):");
        for(int i=0;i<a.length;i++)
        {
            System.out.print(a[i]+" ");
        }
        test.sort(a);

    }
}
```

testingd - Notepad

File Edit Format View Help

```
import java.util.Arrays;
class descending {

    public  void sort(int arr[])
    {
        int t=0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
        for(int i=0;i<arr.length;i++)
        {
            System.out.print(arr[i]+" ");
        }
    }
    public  void sort(double arr[])
    {
        double t=0.0;
        for(int i=0;i<arr.length;i++)//performing sorting
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]<arr[j])
                {
                    t= arr[i];    //swapping
                   arr[i] = arr[j];
                   arr[j] = t;
                }
            }
        }
        System.out.println();
        System.out.println("After performing ascending sort:");
```


Command Prompt
C:\Users\shara\OneDrive\Desktop\javavit\lab3>javac testingd.java
C:\Users\shara\OneDrive\Desktop\javavit\lab3>java testingd
Original Array is (String):
[Andhra Pradesh, Telangana, Mizoram, Uttarakhand, Rajasthan]
After performing ascending sort:
[Uttarakhand, Telangana, Rajasthan, Mizoram, Andhra Pradesh]
Original Array is (Double):
24.9 69.96 12.58 65.21 11.8
After performing ascending sort:
69.96 65.21 24.9 12.58 11.8
Original Array is (Int):
10 20 2 8 16
After performing ascending sort:
20 16 10 8 2
C:\Users\shara\OneDrive\Desktop\javavit\lab3>
100%
ENG
10:24 PM