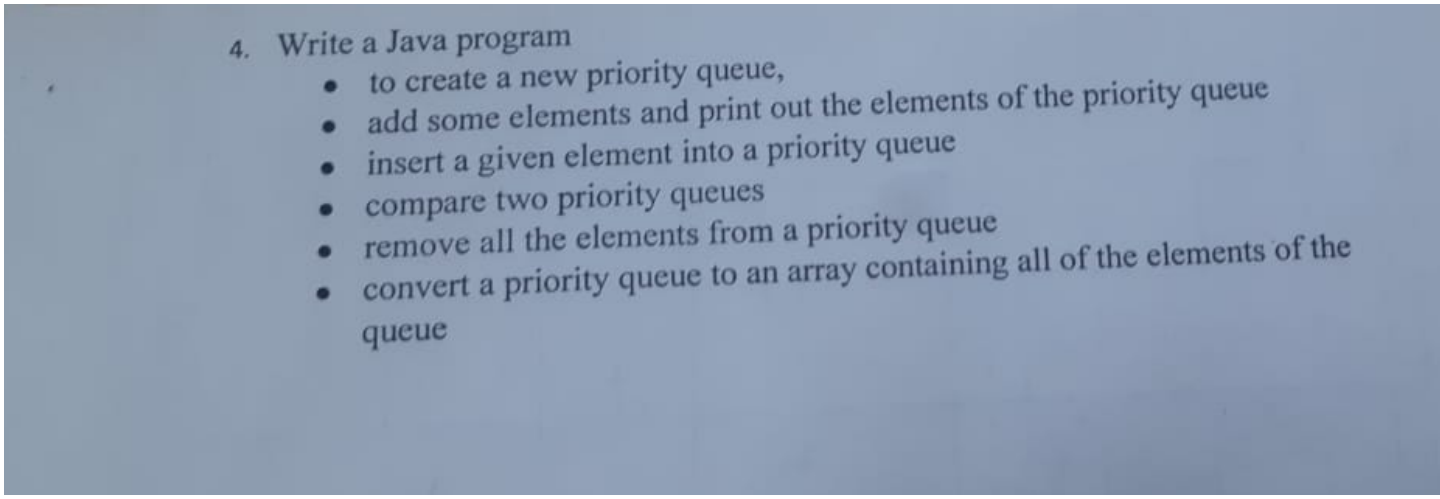
ACTIVE LEARNING

-PC39 Anupriya Kathpalia
PC41 Siddharth Varangaonkar
PC42 Vaishnav Chaudhari

TOPIC:Priority Queue


4. Write a Java program
   - to create a new priority queue,
   - add some elements and print out the elements of the priority queue
   - insert a given element into a priority queue
   - compare two priority queues
   - remove all the elements from a priority queue
   - convert a priority queue to an array containing all of the elements of the queue

CODE:

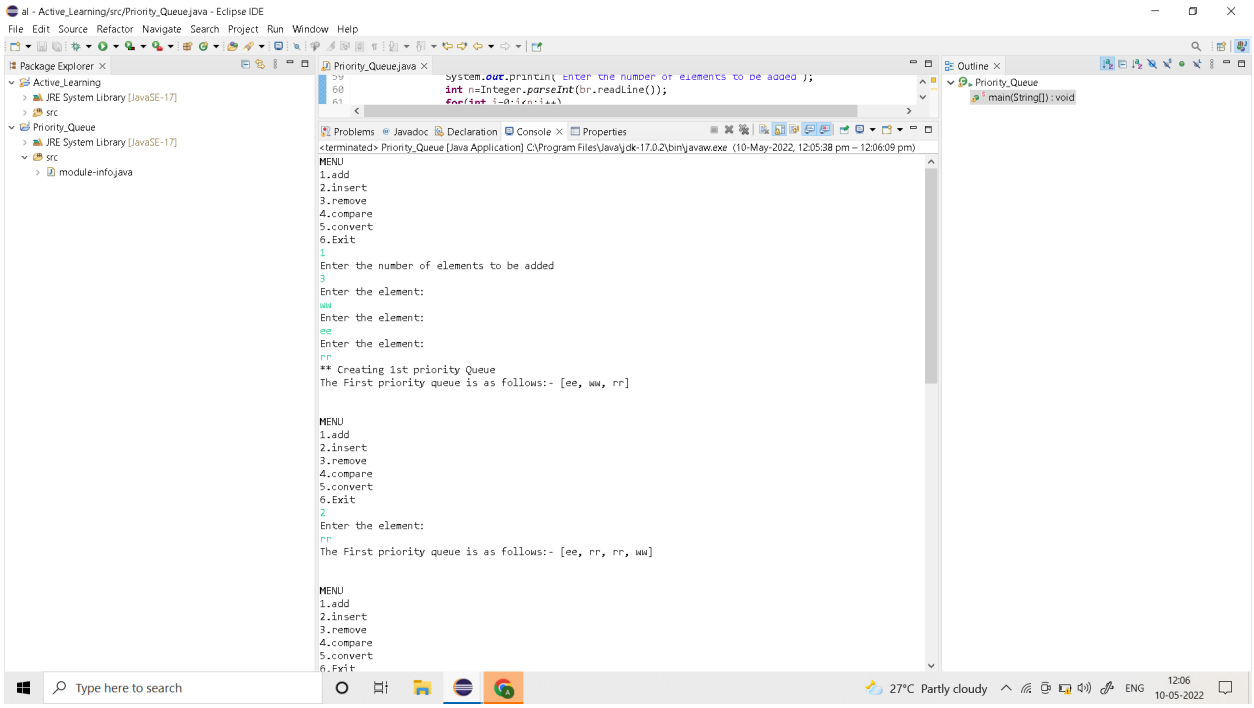
```
import java.io.*;
import java.util.*;
public class Priority_Queue {

	public static void main(String[] args) throws IOException
	{
		BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
		// TODO Auto-generated method stub
		char cont='y';
		do
		{
			System.out.println("MENU\n1.add \n2.insert\n3.remove \n4.compare
\n5.convert \n6.Exit");
			int ch=Integer.parseInt(br.readLine());
			//Create a priority queue
			PriorityQueue<String> a=new PriorityQueue<String>();
			PriorityQueue<String> c = new PriorityQueue<String>();
			switch(ch)
			{
			case 1:
			{
				//add elements bin priority queue
```

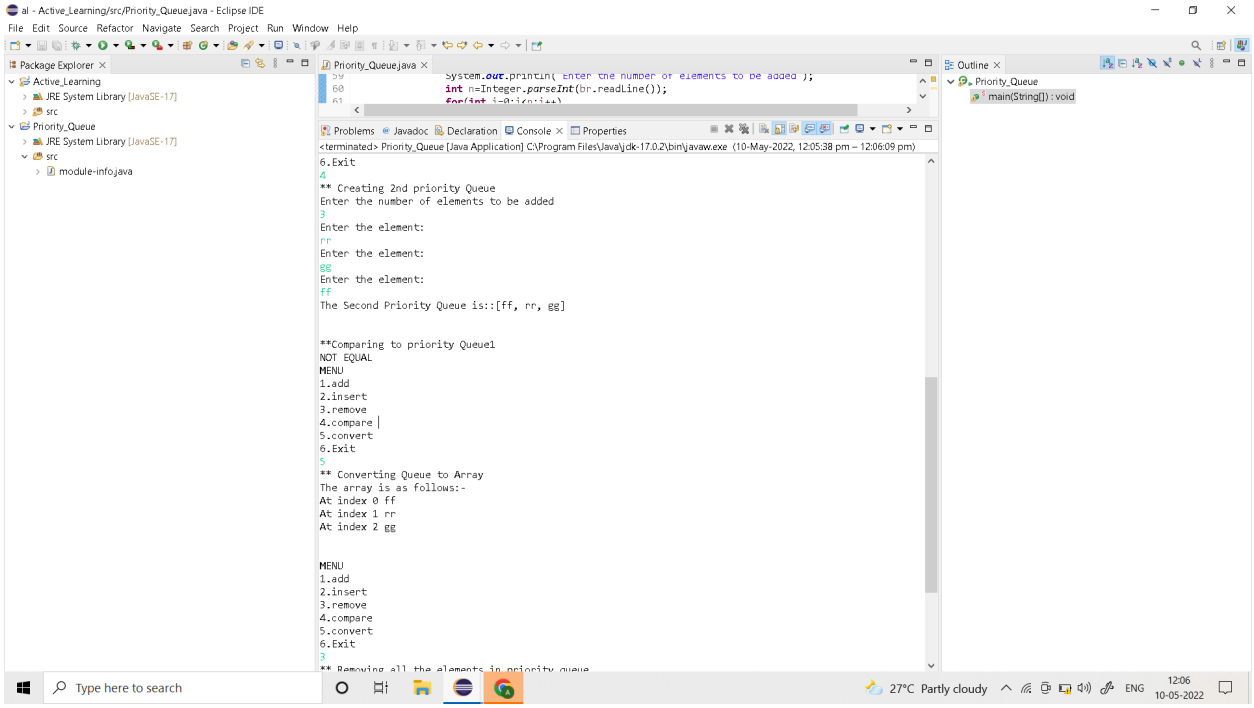
```
                //                  a.add("sid");
                //                  a.add("ata");
                //                  a.add("harr");
                        System.out.println("Enter the number of elements to be
added");
                        int n=Integer.parseInt(br.readLine());
                        for(int i=0;i<n;i++)
                        {
                                System.out.println("Enter the element: ");
                                a.add(br.readLine());
                        }
                        System.out.println("** Creating 1st priority Queue ");
                        //print elements of queue
                        System.out.println("The First priority queue is as follows:- "+a);
                        System.out.println("\n");
                        break;
                }
                case 2:
                {
                        //add elements to queue
                                System.out.println("Enter the element: ");
                                String b=br.readLine();
                        a.add(b);
                        System.out.println("The First priority queue is as follows:- "+a);
                        System.out.println("\n");
                        break;
                }

                case 4:
                {
                        System.out.println("** Creating 2nd priority Queue ");
                        //creating a new priority queue

                        //                  c.add("A");
                        //                  c.add("ata");
                        //                  c.add("B");
                        System.out.println("Enter the number of elements to be added");
                        int n=Integer.parseInt(br.readLine());
                        for(int i=0;i<n;i++)
                        {
                                System.out.println("Enter the element: ");
                                c.add(br.readLine());
                        }
                        System.out.println("The Second Priority Queue is::" + c);
```

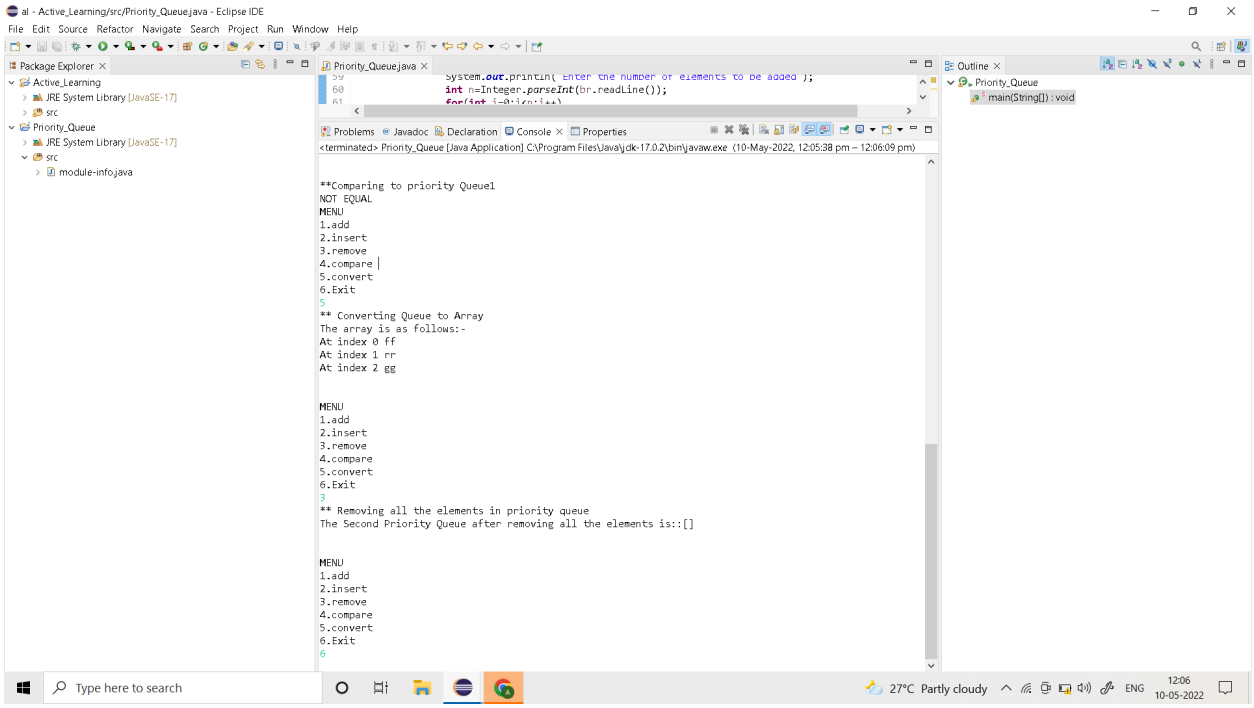
```
                                System.out.println("\n");

                                System.out.println("**Comparing to priority Queue");
                                // compare two priority queue
                                for(String e:a)
                                {
                                        if(c.contains(e))
                                        {
                                                System.out.println("Yes The element "+e+ " is in
Queue 2 ");

                                        }
                                        else
                                        {
                                                System.out.println("No The element "+e+ " is not in
Queue 2 ");

                                        }
                                }
                                System.out.println("\n");
                                break;
                        }
        // remove the element from priority Queue
                        case 3:
                        {
                                System.out.println("** Removing all the elements in priority
queue");
                                a.clear();

                                System.out.println("The Second Priority Queue after removing all
the elements is::" + a);
                                System.out.println("\n");
                                break;
                        }
                //convert queue to array
                        case 5:
                        {
                                System.out.println("** Converting Queue to Array ");
                                Object[] arr=c.toArray();
                                System.out.println("The array is as follows:-");
                                for(int i=0;i<arr.length;i++)
                                {
                                System.out.println("At index "+ i +" "+arr[i]);
                                }
```

```
                        System.out.println("\n");
                        break;
                }
                case 6:
                {
                        cont='n';
                        break;
                }
        }
    }while(cont=='y');
}
}
```

OUTPUT:


al - Active_Learning/src/Priority_Queue.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Active_Learning
JRE System Library [JavaSE-17]
src
Priority_Queue
JRE System Library [JavaSE-17]
src
module-info.java
Priority_Queue.java
59 System.out.println(Enter the number of elements to be added);
60 int n=Integer.parseInt(br.readLine());
61 for(int i=0;i<n;i++)
Problems Javadoc Declaration Console Properties
<terminated> Priority_Queue [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (10-May-2022, 12:05:38 pm – 12:06:09 pm)
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
1
Enter the number of elements to be added
3
Enter the element:
ww
Enter the element:
ee
Enter the element:
rr
** Creating 1st priority Queue
The First priority queue is as follows:- [ee, ww, rr]
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
2
Enter the element:
rr
The First priority queue is as follows:- [ee, rr, rr, ww]
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
Outline
Priority_Queue
main(String[]) : void
Type here to search
27°C Partly cloudy
ENG
12:06
10-05-2022


al - Active_Learning/src/Priority_Queue.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Active_Learning
JRE System Library [JavaSE-17]
src
Priority_Queue
JRE System Library [JavaSE-17]
src
module-info.java
Priority_Queue.java
59 System.out.println(Enter the number of elements to be added);
60 int n=Integer.parseInt(br.readLine());
61 for(int i=0;i<n;i++)
Problems Javadoc Declaration Console Properties
<terminated> Priority_Queue [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (10-May-2022, 12:05:38 pm – 12:06:09 pm)
6.Exit
4
** Creating 2nd priority Queue
Enter the number of elements to be added
3
Enter the element:
rr
Enter the element:
gg
Enter the element:
ff
The Second Priority Queue is::[ff, rr, gg]
**Comparing to priority Queue1
NOT EQUAL
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
5
** Converting Queue to Array
The array is as follows:-
At index 0 ff
At index 1 rr
At index 2 gg
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
3
** Removing all the elements in priority queue
Outline
Priority_Queue
main(String[]) : void
Type here to search
27°C Partly cloudy
ENG
12:06
10-05-2022


al - Active_Learning/src/Priority_Queue.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Active_Learning
JRE System Library [JavaSE-17]
src
Priority_Queue
JRE System Library [JavaSE-17]
src
module-info.java
Priority_Queue.java
System.out.println("Enter the number of elements to be added);
int n=Integer.parseInt(br.readLine());
Problems Javadoc Declaration Console Properties
<terminated> Priority_Queue [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (10-May-2022, 12:05:38 pm – 12:06:09 pm)
**Comparing to priority Queue1
NOT EQUAL
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
5
** Converting Queue to Array
The array is as follows:-
At index 0 ff
At index 1 rr
At index 2 gg
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
3
** Removing all the elements in priority queue
The Second Priority Queue after removing all the elements is::[]
MENU
1.add
2.insert
3.remove
4.compare
5.convert
6.Exit
6
Outline
Priority_Queue
main(String[]) : void
Type here to search
27°C Partly cloudy
ENG
12:06
10-05-2022