PRN – 54

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Write a Java program to

a. Perform insertion sort

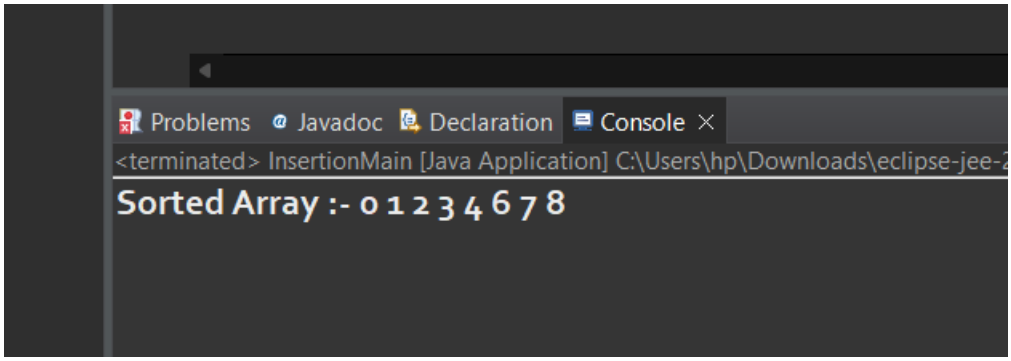
b. Implement queue using array

a. Perform insertion sort

```
package com.insertion.demo;

public class Insertion {

int[] arr= {4, 6, 7, 2, 0, 1 , 3, 8};

public void result() {

for (int i=1;i<arr.length;i++) {

int temp=arr[i];

int j=i-1;

while( j>=0 && arr[j]>temp) {

arr[j+1]=arr[j];

j--;

}

arr[j+1]=temp;

}

System.out.print("the sorted array is :");
```

```
for(int a=o ;a<arr.length;a++) {

System.out.print(" "+arr[a]);

}

}

};
```

```
package com.insertion.demo;

public class InsertionMain {

public static void main(String[] args) {

Insertion s = new Insertion();

s.result();

}

}
```



b. Implement queue using array

```
package com.insertion.demo;

public class Queue {

static private int front, rear, capacity;

static private int queue[];

public Queue(int c) {

front = 0;

rear = 0;

capacity = c;

queue = new int[capacity];

}

// at the rear of the queue

static void queueEnqueue(int data) {

if (capacity == rear) {

System.out.printf("\nQueue is full\n");

return;

}

else {

queue[rear] = data;

rear++;

}
```

```
return;
}
// function to delete an element
static void queueDequeue() {
if (front == rear) {
System.out.printf("Queue is empty\n");
return;
}
else {
for (int i = 0; i < rear - 1; i++) {
queue[i] = queue[i + 1];
}
rear--;
}
return;
}
// print queue elements
static void queueDisplay()
{
int i;
if (front == rear) {
System.out.printf("Queue is Empty\n");
```

```
return;

}

for (i = front; i < rear; i++) {

System.out.printf(" %d ", queue[i]);

}

return;

}

}
```

```
package com.insertion.demo;

public class QueueMain {

public static void main(String[] args) {

Queue q = new Queue(4);

q.queueDisplay();

// inserting elements in the queue

q.queueEnqueue(20);

q.queueEnqueue(30);

q.queueEnqueue(40);

q.queueEnqueue(50);

// print Queue elements

q.queueDisplay();

// insert element in the queue
```

```
q.queueEnqueue(60);

// print Queue elements

q.queueDisplay();

q.queueDequeue();

q.queueDisplay();

}

}
```