

**BCSE-506L (Performance Analysis of Programming Languages Lab)**

**EXPERIMENT NO. 8A2**

**AIM:** Write a program in java to show the difference between minimum and maximum priority that can be assigned to the object of Thread class that you have created.

**I had written two program for minimum and maximum priority.**

**Java Program 1**

**Source Code:**

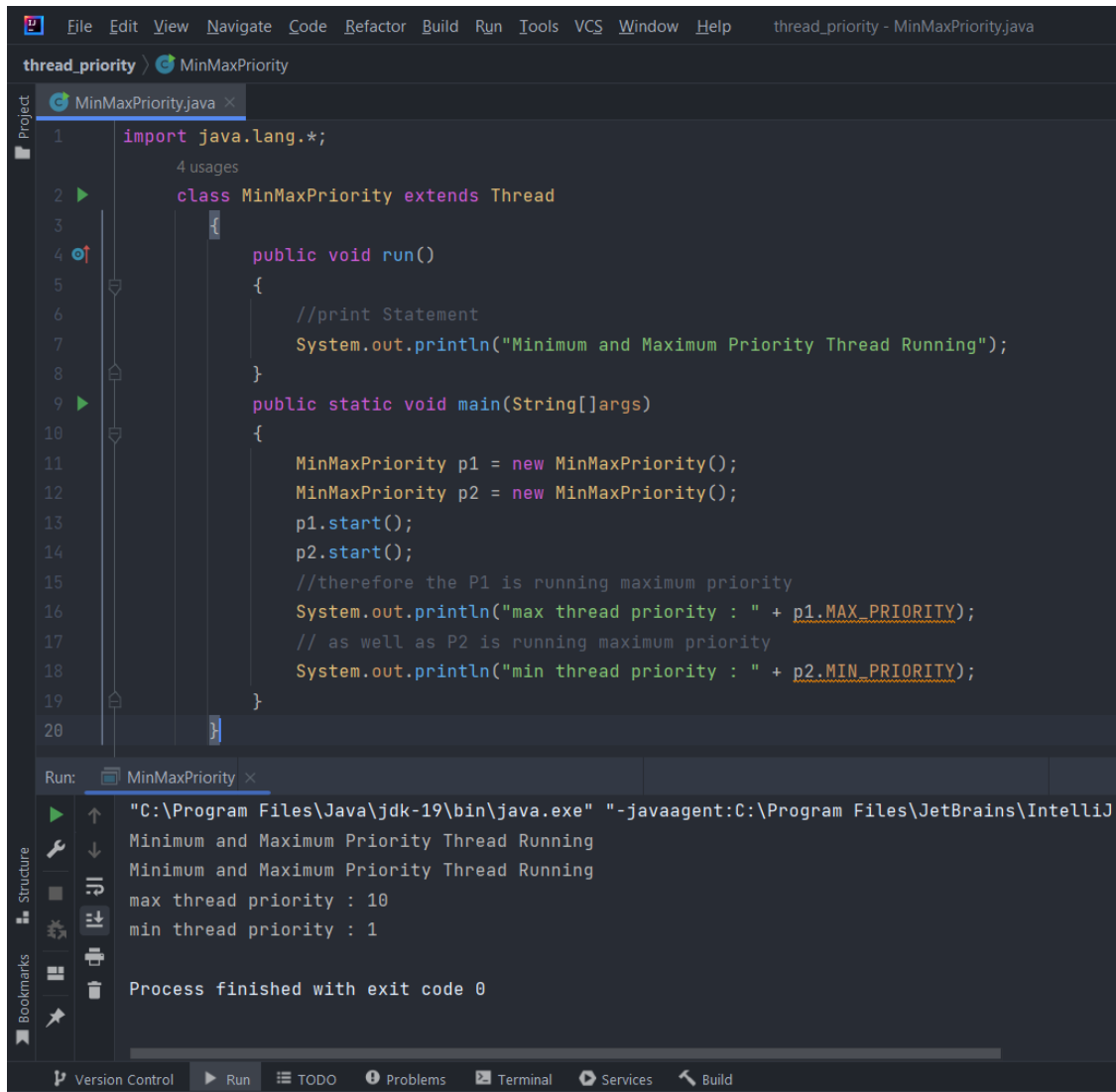
```
import java.lang.*;
class MinMaxPriority extends Thread
{
    public void run()
    {
        //print Statement
        System.out.println("Minimum and Maximum Priority Thread Running");
    }
    public static void main(String[] args)
    {
        MinMaxPriority p1 = new MinMaxPriority();
        MinMaxPriority p2 = new MinMaxPriority();
        p1.start();
        p2.start();
        //therefore the P1 is running maximum priority
        System.out.println("max thread priority : " + p1.MAX_PRIORITY);
        // as well as P2 is running maximum priority
        System.out.println("min thread priority : " + p2.MIN_PRIORITY);
    }
}
```

**OUTPUT:**

```
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program
Files\JetBrains\IntelliJ IDEA Community Edition
2022.2.3\lib\idea_rt.jar=52022:C:\Program Files\JetBrains\IntelliJ IDEA
Community Edition 2022.2.3\bin" -Dfile.encoding=UTF-8
-Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath "E:\Java
Project\thread_priority\out\production\thread_priority" MinMaxPriority
Minimum and Maximum Priority Thread Running
Minimum and Maximum Priority Thread Running
max thread priority : 10
min thread priority : 1
```

Process finished with exit code 0

## IDE INPUT & Output:



The screenshot displays an IDE window with a Java file named `MinMaxPriority.java`. The code defines a `MinMaxPriority` class that extends `Thread`. It includes a `run()` method that prints "Minimum and Maximum Priority Thread Running" and a `main` method that creates two instances of `MinMaxPriority`, starts them, and prints their maximum and minimum priorities. The IDE's Run tab shows the execution output, which matches the code's output.

```
1 import java.lang.*;
2 class MinMaxPriority extends Thread
3 {
4     public void run()
5     {
6         //print Statement
7         System.out.println("Minimum and Maximum Priority Thread Running");
8     }
9     public static void main(String[] args)
10    {
11        MinMaxPriority p1 = new MinMaxPriority();
12        MinMaxPriority p2 = new MinMaxPriority();
13        p1.start();
14        p2.start();
15        //therefore the P1 is running maximum priority
16        System.out.println("max thread priority : " + p1.MAX_PRIORITY);
17        // as well as P2 is running maximum priority
18        System.out.println("min thread priority : " + p2.MIN_PRIORITY);
19    }
20 }
```

Run: MinMaxPriority ×

```
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ
Minimum and Maximum Priority Thread Running
Minimum and Maximum Priority Thread Running
max thread priority : 10
min thread priority : 1
Process finished with exit code 0
```

Version Control Run TODO Problems Terminal Services Build

## JAVA PROGRAM 2

### Source Code:

```
class NewThread extends Thread{
    public long count;
    NewThread(int priority)
    {setPriority(priority);
     start();
    }
    public void run()
    {for(;;)
     {
         count++;
     }
    }
}

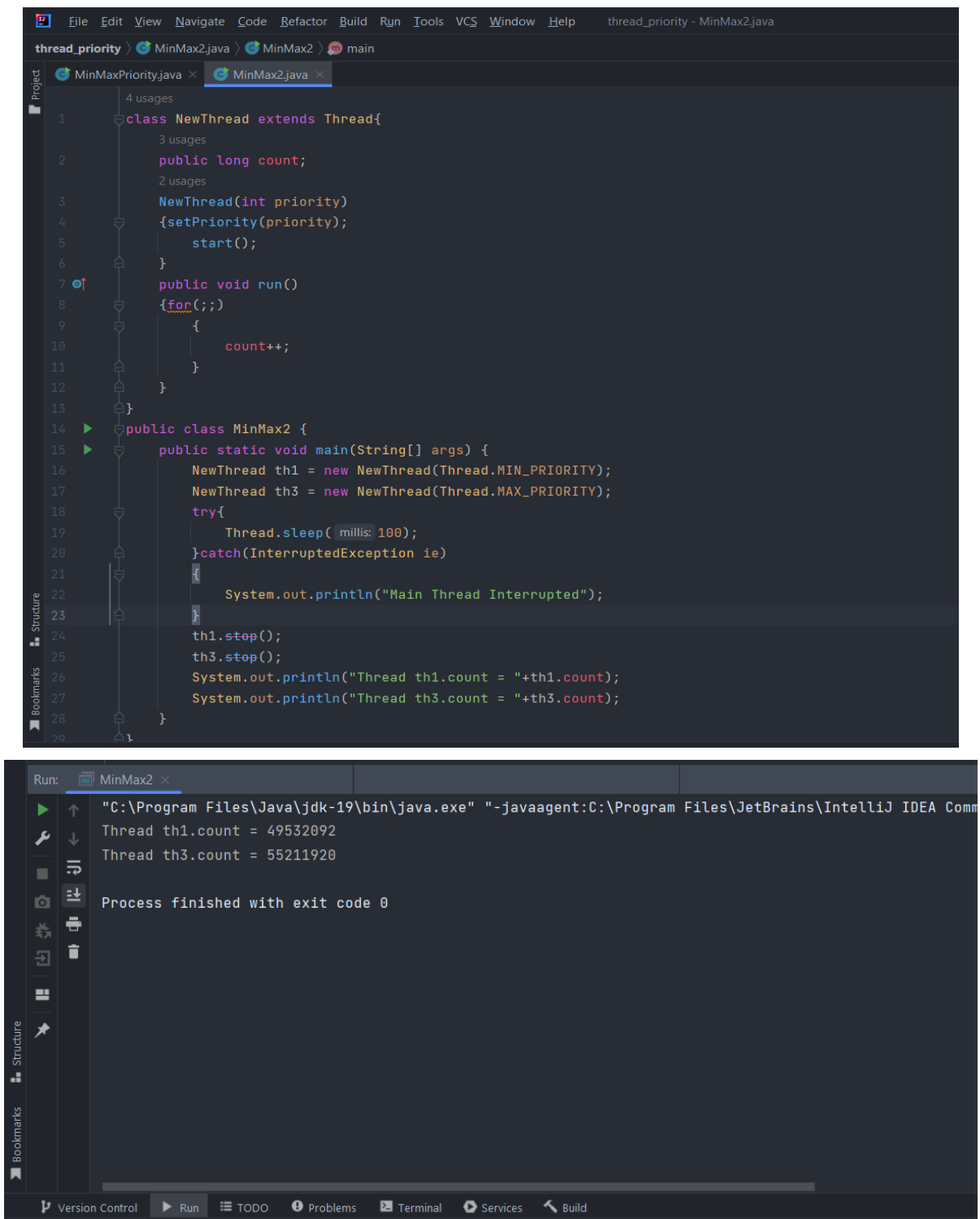
public class MinMax2 {
    public static void main(String[] args) {
        NewThread th1 = new NewThread(Thread.MIN_PRIORITY);
        NewThread th3 = new NewThread(Thread.MAX_PRIORITY);
        try{
            Thread.sleep(100);
        }catch(InterruptedException ie)
        {
            System.out.println("Main Thread Interrupted");
        }
        th1.stop();
        th3.stop();
        System.out.println("Thread th1.count = "+th1.count);
        System.out.println("Thread th3.count = "+th3.count);
    }
}
```

### Output:

```
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program
Files\JetBrains\IntelliJ IDEA Community Edition
2022.2.3\lib\idea_rt.jar=52069:C:\Program Files\JetBrains\IntelliJ IDEA
Community Edition 2022.2.3\bin" -Dfile.encoding=UTF-8
-Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath "E:\Java
Project\thread_priority\out\production\thread_priority" MinMax2
Thread th1.count = 49532092
Thread th3.count = 55211920
```

Process finished with exit code 0

## OUTPUT From IDE:



The image displays two screenshots from the IntelliJ IDEA IDE. The top screenshot shows the source code of a Java program. The bottom screenshot shows the output of the program's execution.

**Source Code:**

```
1  class NewThread extends Thread{
2      public long count;
3      NewThread(int priority)
4      {setPriority(priority);
5          start();
6      }
7      public void run()
8      {for(;;)
9          {
10             count++;
11         }
12     }
13 }
14 public class MinMax2 {
15     public static void main(String[] args) {
16         NewThread th1 = new NewThread(Thread.MIN_PRIORITY);
17         NewThread th3 = new NewThread(Thread.MAX_PRIORITY);
18         try{
19             Thread.sleep(100);
20         }catch(InterruptedException ie)
21         {
22             System.out.println("Main Thread Interrupted");
23         }
24         th1.start();
25         th3.start();
26         System.out.println("Thread th1.count = "+th1.count);
27         System.out.println("Thread th3.count = "+th3.count);
28     }
29 }
```

**Execution Output:**

```
Run: MinMax2 x
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Comm
Thread th1.count = 49532092
Thread th3.count = 55211920

Process finished with exit code 0
```

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