

EXPLORER

▼ JAVA DEVELOPMENT

- Assingment-0
- > Assingment-7
- > Homeworks
- > lib
- Chapter1.Java
- Chapter2.1.Java
- Chapter2.Java
- CheckArgument.class
- CheckArgumentException.class
- ConcatTest.class
- CountLetters.class
- CountLetters.java**
- Employee.class
- hrrrn.exe
- InvalidHourException.class
- InvalidMinuteException.class
- InvalidSecondException.class
- Main.class
- MultiThreadExample.class
- MultiThreadExample\$Process.class
- NegativeNumberException.class
- Student.class
- test.class
- test.java

> OUTLINE

> TIMELINE

CountLetters.java X

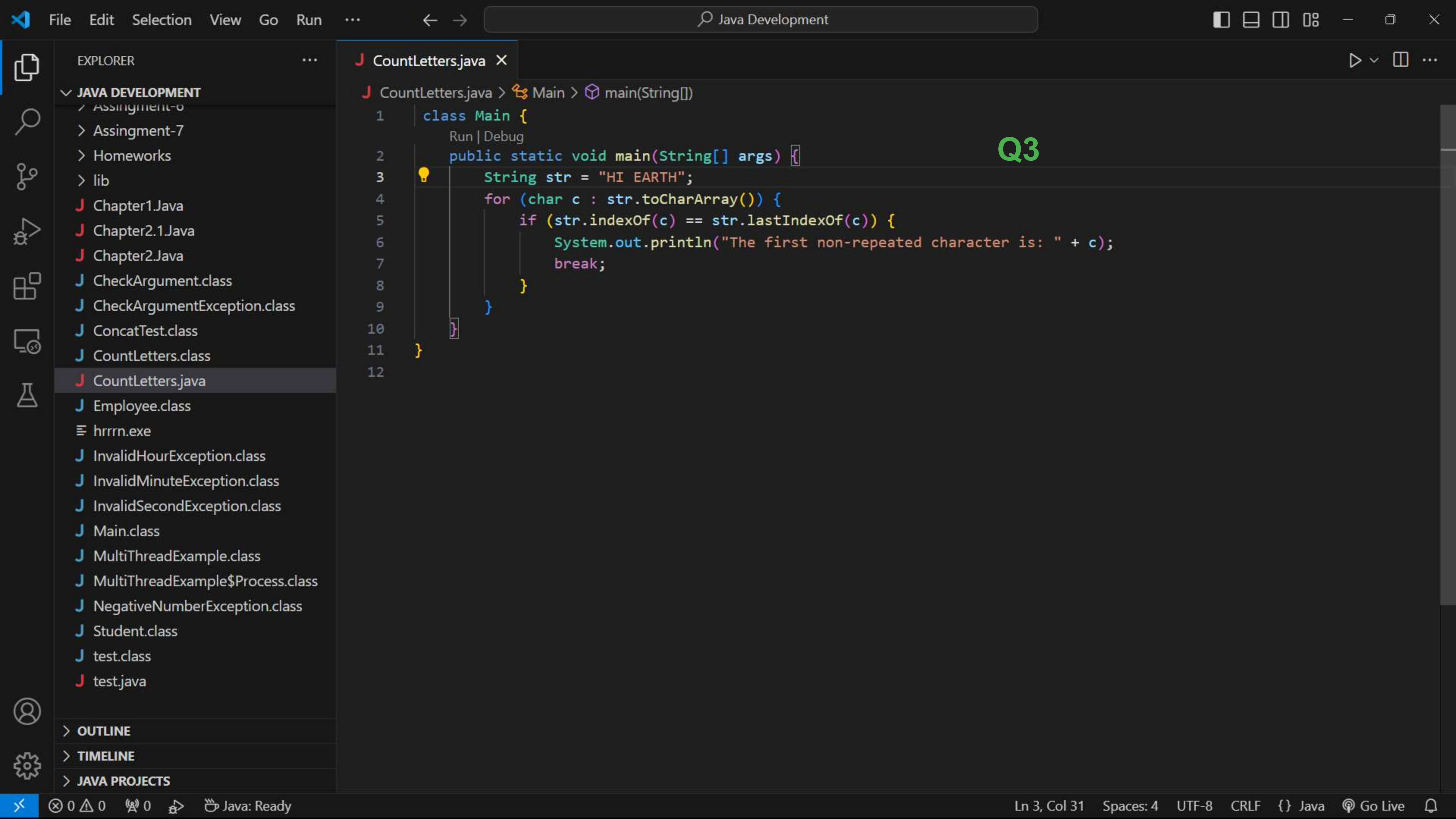
CountLetters.java > Main > main(String[])

```
1  import java.util.Scanner;
2
3  class Main {
4      public static void main(String[] args) {
5          Scanner scanner = new Scanner(System.in);
6
7          System.out.println(x:"Enter the first string:");
8          String str1 = scanner.nextLine();
9
10         System.out.println(x:"Enter the second string:");
11         String str2 = scanner.nextLine();
12
13         if (str1.contains(str2)) {
14             System.out.println(x:"The first string contains the second string.");
15         } else {
16             System.out.println(x:"The first string does not contain the second string.");
17         }
18
19         scanner.close();
20     }
21 }
22
```

Q1

The image shows a screenshot of an IDE interface. On the left, there is a sidebar with icons for Explorer, Search, Source Control, Run and Debug, Extensions, and Testing. The Explorer view is active, showing a project named 'JAVA DEVELOPMENT' with a folder 'Assignment-0' and several files including 'Chapter1.java', 'Chapter2.1.java', 'Chapter2.java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'CountLetters.java' (selected), 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', 'test.class', and 'test.java'. Below the Explorer are sections for 'OUTLINE', 'TIMELINE', and 'JAVA PROJECTS'. The main area is divided into two panes. The top pane is the 'TERMINAL' tab, showing a PowerShell command prompt with the following text: 'PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main''', followed by 'Enter the first string:', 'Kanishk', 'Enter the second string:', 'anish', and 'The first string contains the second string.' The bottom pane is the 'PROBLEMS' tab, which is currently empty. On the right side of the IDE, there is a sidebar with a list of files, each with a 'Code' button and a 'Run: Main' button at the bottom.

The image is a screenshot of the Visual Studio Code IDE interface. On the left is the Explorer sidebar, which is expanded to show the 'JAVA DEVELOPMENT' project. The project structure includes folders like 'Assingment-0', 'Assingment-7', 'Homeworks', and 'lib', and several Java files. 'CountLetters.java' is currently selected and highlighted. Below the Explorer sidebar are the Outline, Timeline, and Java Projects sections. The main area of the IDE is divided into several panels at the top: PROBLEMS, OUTPUT, TEST RESULTS, DEBUG CONSOLE, PORTS, and TERMINAL. The TERMINAL panel is active, showing a command prompt session. The user has navigated to the directory 'C:\Users\KIIT\Pictures\Screenshots\Java Development' and executed the command 'c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main''. The output of the program is displayed below the command: 'Before swapping: str1 = HI, str2 = EARTH' and 'After swapping: str1 = EARTH, str2 = HI'. On the far right, there is a vertical sidebar with a list of 'Code' snippets and a 'Run: Main' button, which is currently selected.





EXPLORER

✓ JAVA DEVELOPMENT

> Assingment-7

> Homeworks

```
> lib
```

Chapter1.Java

Chapter2.1.Java

Chapter2.Java

J CheckArgument.class

[J CheckArgumentException.class](#)

ConcatTest.class

J CountLetters.class

J CountLetters.java

J Employee.class

≡ hrrrn.exe

J InvalidHourException.class

J InvalidMinuteException.class

J InvalidSecondException.class

J Main.class

J MultiThreadExample.class

J MultiThreadExample\$Process.class

J NegativeNumberException.class

J Student.class

test.class

J test.java

> OUTLINE

> TIMELINE

> JAVA PROJECTS

PROBLEMS

OUTPUT

TEST RESULTS

DEBUG CONSOLE

PORTS

TERMINAL

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
```

The first non-repeated character is: I

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

 Code

Code

 Code

 Code

 Code

 Code

 Code

 Run: Main

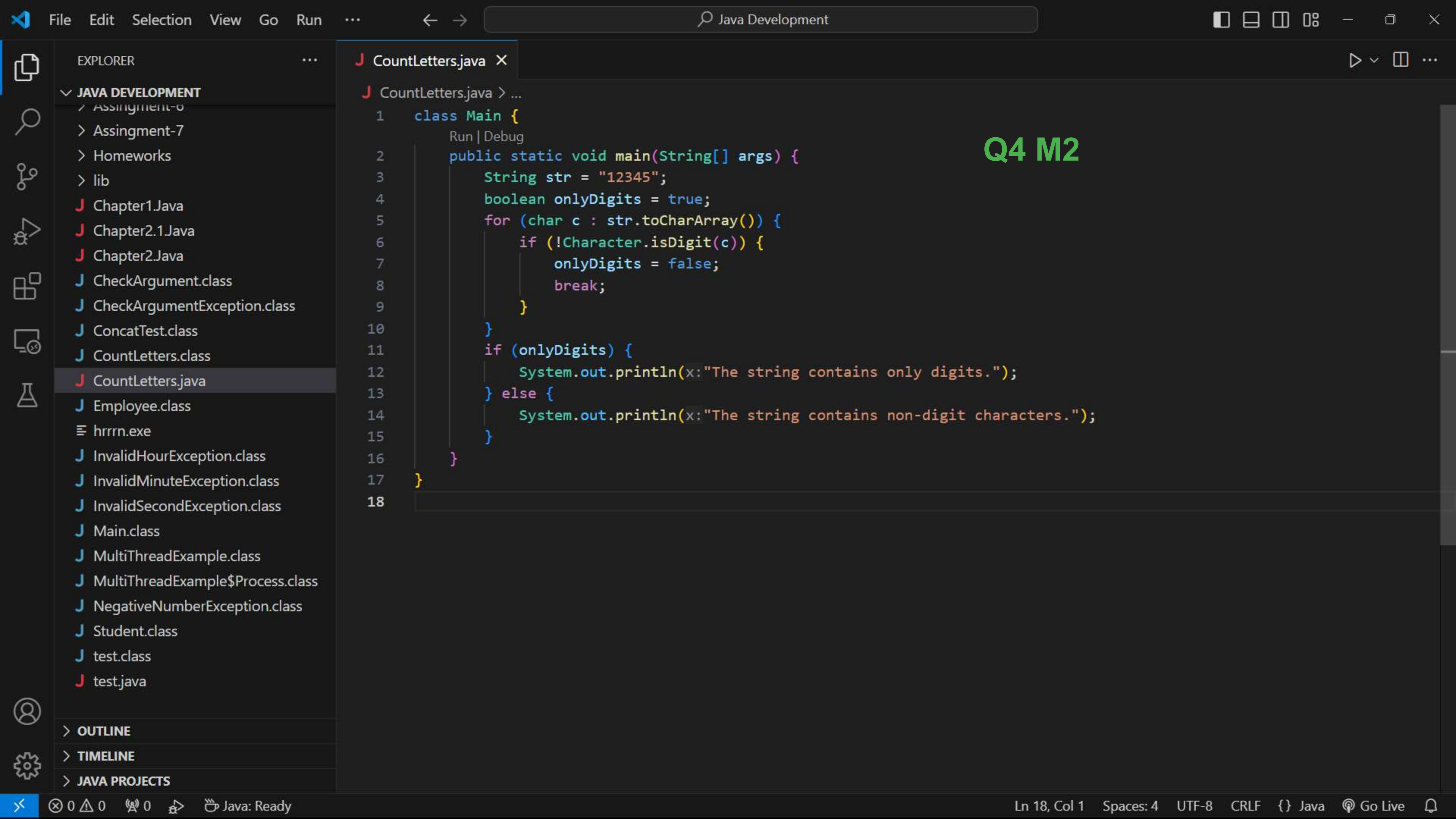
The screenshot displays an IDE interface. On the left, the 'EXPLORER' panel shows a project structure under 'JAVA DEVELOPMENT'. The files listed include 'Assignment-0', 'Assignment-7', 'Homeworks', 'lib', 'Chapter1.Java', 'Chapter2.1.Java', 'Chapter2.Java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'CountLetters.java' (selected), 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', 'test.class', and 'test.java'. Below the file list are sections for 'OUTLINE', 'TIMELINE', and 'JAVA PROJECTS'. The main editor area shows the code for 'CountLetters.java'. The code defines a 'Main' class with a 'main' method that takes a 'String[] args' parameter. Inside the 'main' method, a 'String str' is assigned the value '12345'. A conditional check is performed: 'if (str.matches(regex: "\\d+"))'. If true, it prints 'The string contains only digits.'; otherwise, it prints 'The string contains non-digit characters.'.

```
1 class Main {
2     public static void main(String[] args) {
3         String str = "12345";
4         if (str.matches(regex: "\\d+")) {
5             System.out.println(x: "The string contains only digits.");
6         } else {
7             System.out.println(x: "The string contains non-digit characters.");
8         }
9     }
10 }
11
```


The image shows a screenshot of an IDE interface with three main panels:

- EXPLORER (Left Panel):** Displays the project structure under "JAVA DEVELOPMENT". The file list includes:
 - Assignment-0
 - Assignment-7
 - Homeworks
 - lib
 - Chapter1.Java
 - Chapter2.1.Java
 - Chapter2.Java
 - CheckArgument.class
 - CheckArgumentException.class
 - ConcatTest.class
 - CountLetters.class
 - CountLetters.java** (selected)
 - Employee.class
 - hrrrn.exe
 - InvalidHourException.class
 - InvalidMinuteException.class
 - InvalidSecondException.class
 - Main.class
 - MultiThreadExample.class
 - MultiThreadExample\$Process.class
 - NegativeNumberException.class
 - Student.class
 - test.class
 - test.java
- TERMINAL (Middle Panel):** Shows the execution of a Java program. The commands and output are:

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
The first non-repeated character is: I
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
The string contains only digits.
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```
- Run Configuration (Right Panel):** A dropdown menu showing the selected configuration "Run: Main" and several "Code" options.





EXPLORER

✓ JAVA DEVELOPMENT

> Assingment-7

> Homeworks

```
> lib
```

Chapter1.Java

Chapter2.1.Java

Chapter2.Java

CheckArgument.class

➤ `CheckArgumentException.class`

ConcatTest.class

J CountLetters.class

J CountLetters.java

J Employee.class

hrrrn.exe

J InvalidHourException.class

InvalidMinuteException.class

InvalidSecondException.class

J Main.class

J MultiThreadExample.class

J MultiThreadExample\$Process.class

J NegativeNumberException.class

J Student.class

J test.class

 test.java

> OUTLINE

> TIMELINE

> JAVA PROJECTS

PROBLEMS

OUTPUT

TEST RESULTS

DEBUG CONSOLE

PORTS

TERMINAL

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
```

The string contains only digits.

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

$$+ \vee \dots \vee \times$$

 Code

 Code

 Code

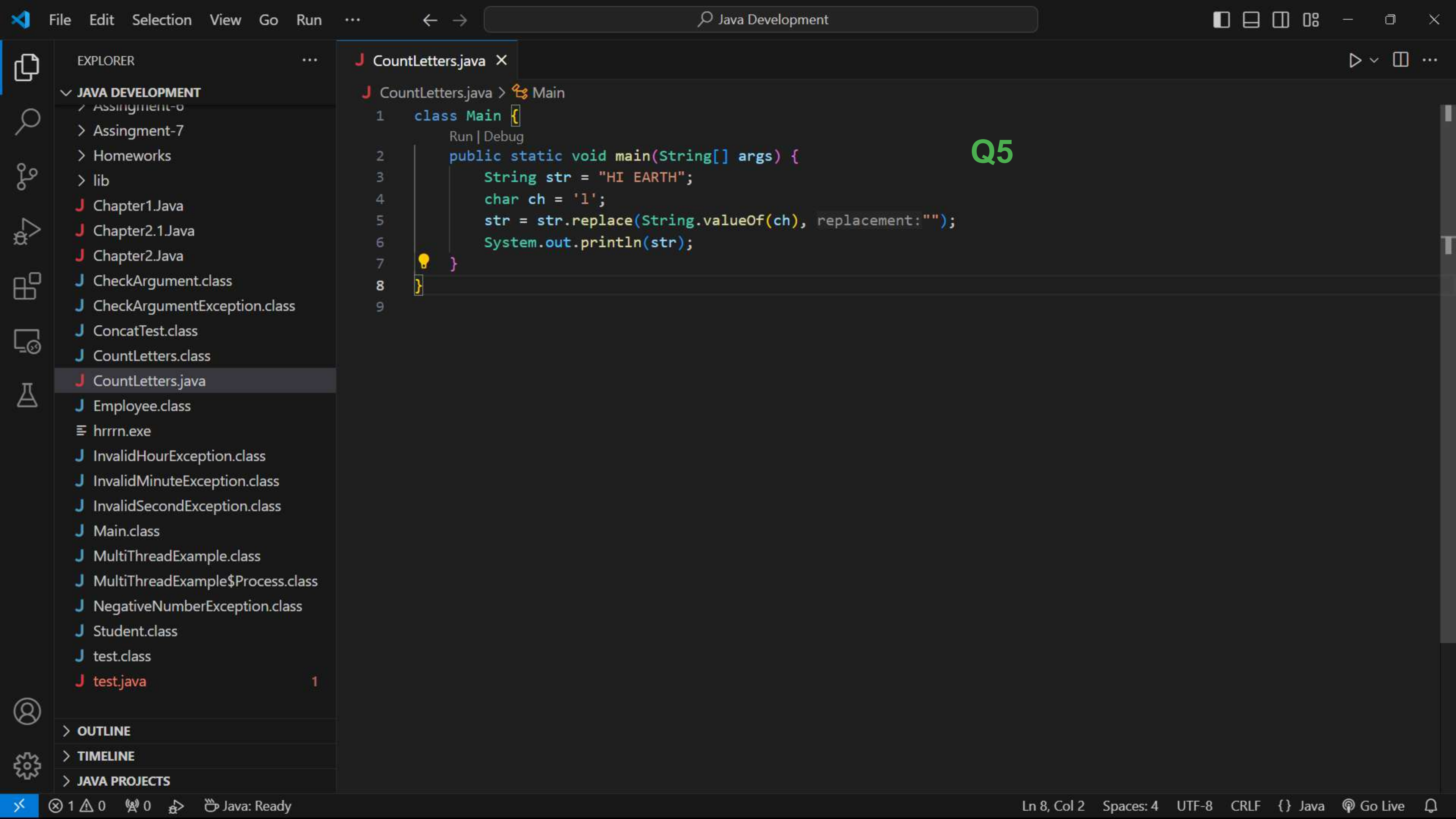
 Code

 Code

Code

Code

 Run: Main



The screenshot shows the IntelliJ IDEA Explorer panel on the left side of the IDE. The panel is titled "EXPLORER" and contains a tree view of the project structure. The tree is organized as follows:

- JAVA DEVELOPMENT** (expanded)
 - Assignment-6** (expanded)
 - Assignment-7
 - Homeworks
 - lib
 - Chapter1.Java
 - Chapter2.1.Java
 - Chapter2.Java
 - CheckArgument.class
 - CheckArgumentException.class
 - ConcatTest.class
 - CountLetters.class
 - CountLetters.java** (selected)
 - Employee.class
 - hrrrn.exe
 - InvalidHourException.class
 - InvalidMinuteException.class
 - InvalidSecondException.class
 - Main.class
 - MultiThreadExample.class
 - MultiThreadExample\$Process.class
 - NegativeNumberException.class
 - Student.class
 - test.class
 - test.java** (1)

The right side of the image is blurred, showing the main editor area with a Java file open.

PROBLEMS **1** OUTPUT TEST RESULTS DEBUG CONSOLE PORTS TERMINAL










```
pment'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
```

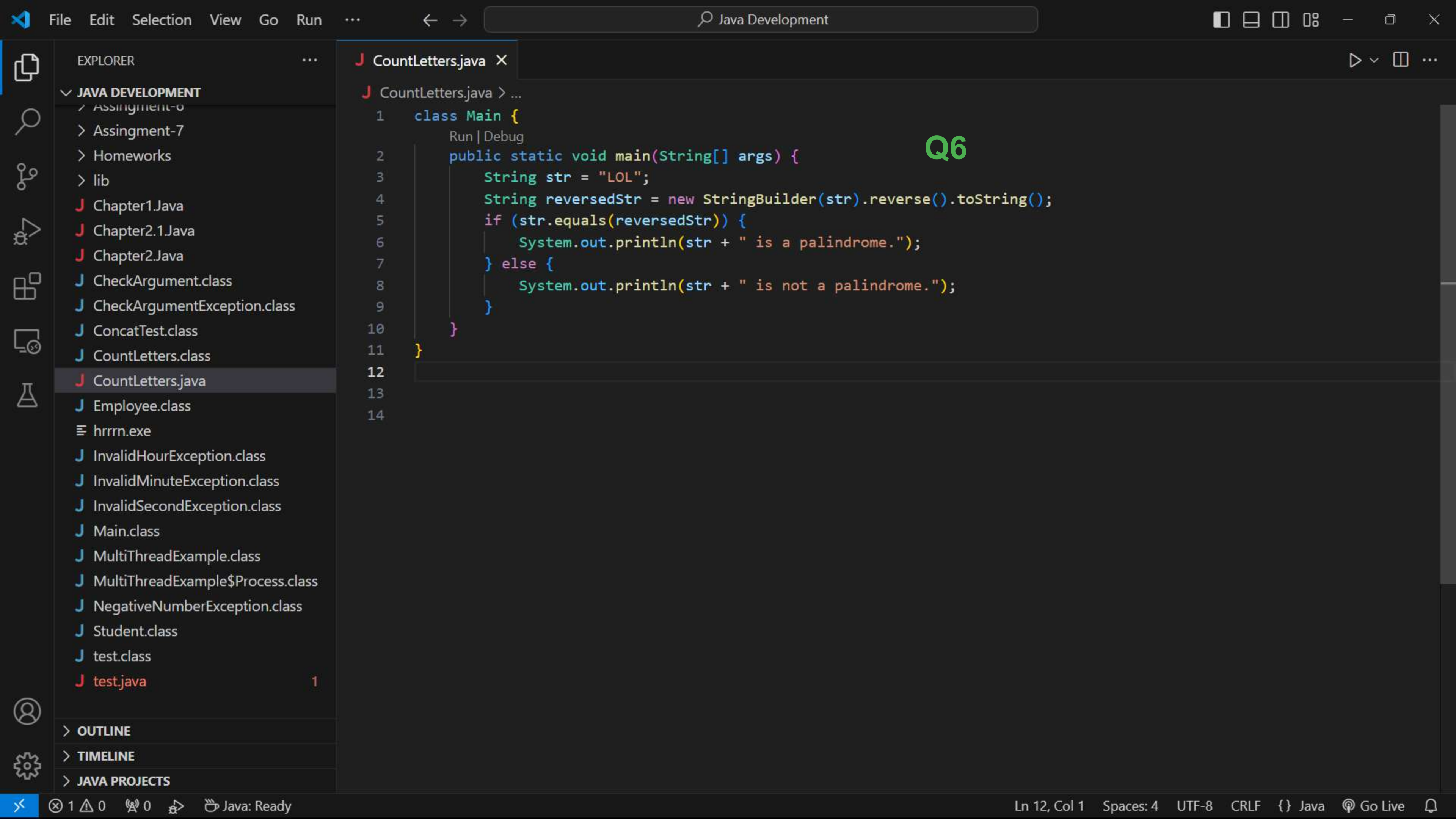
HI EARTH

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
```

HI EARTH

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

-  Code
-  Code
-  Code
-  Code
-  Code
-  Code
-  Code
-  Run: Main
-  Run: test



EXPLORER

JAVA DEVELOPMENT

- Assignment-0
- Assignment-7
- Homeworks
- lib
- Chapter1.Java
- Chapter2.1.Java
- Chapter2.Java
- CheckArgument.class
- CheckArgumentException.class
- ConcatTest.class
- CountLetters.class
- CountLetters.java
- Employee.class
- hrrrn.exe
- InvalidHourException.class
- InvalidMinuteException.class
- InvalidSecondException.class
- Main.class
- MultiThreadExample.class
- MultiThreadExample\$Process.class
- NegativeNumberException.class
- Student.class
- test.class
- test.java

- OUTLINE
- TIMELINE
- JAVA PROJECTS

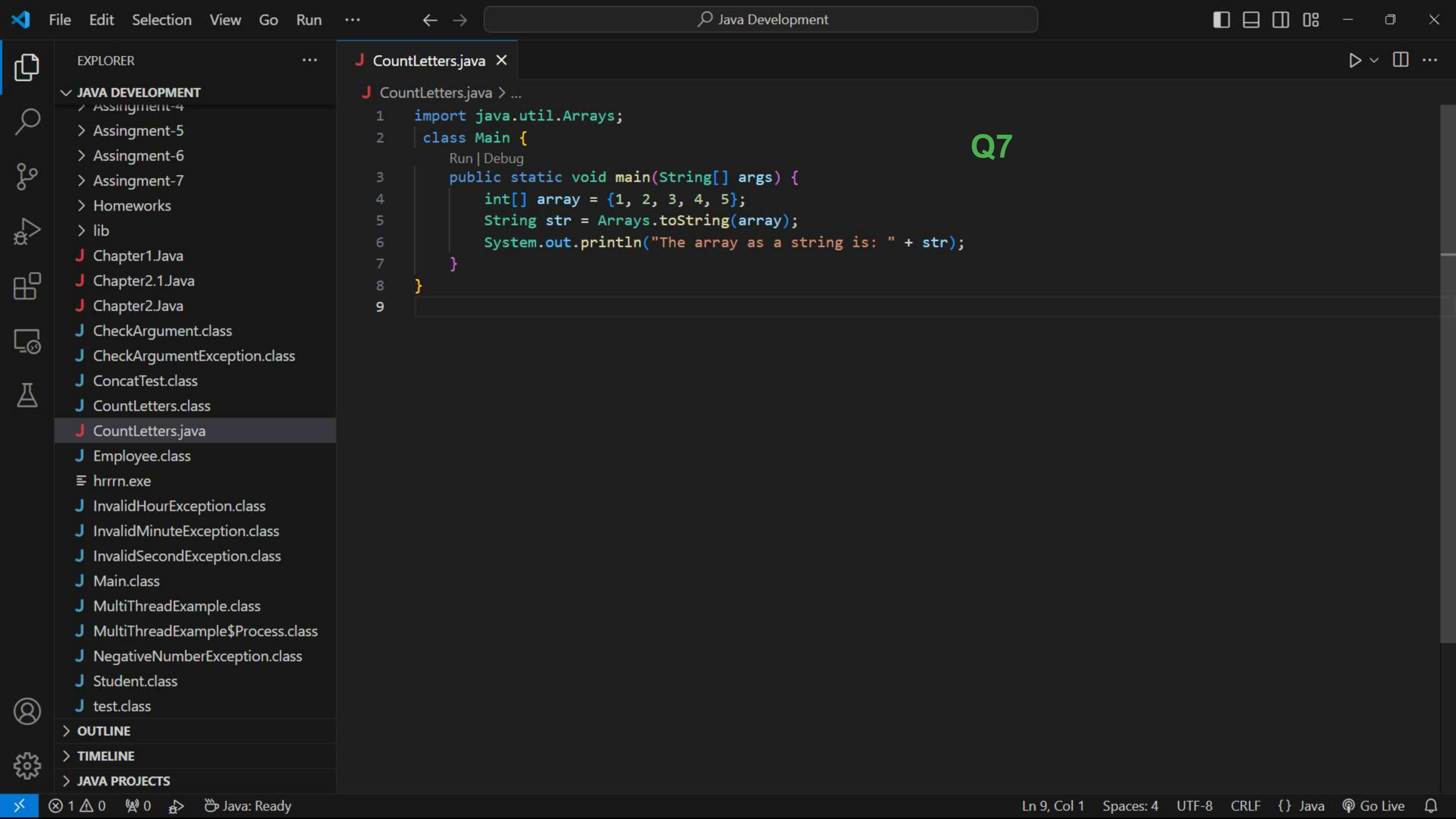
CountLetters.java

CountLetters.java > ...

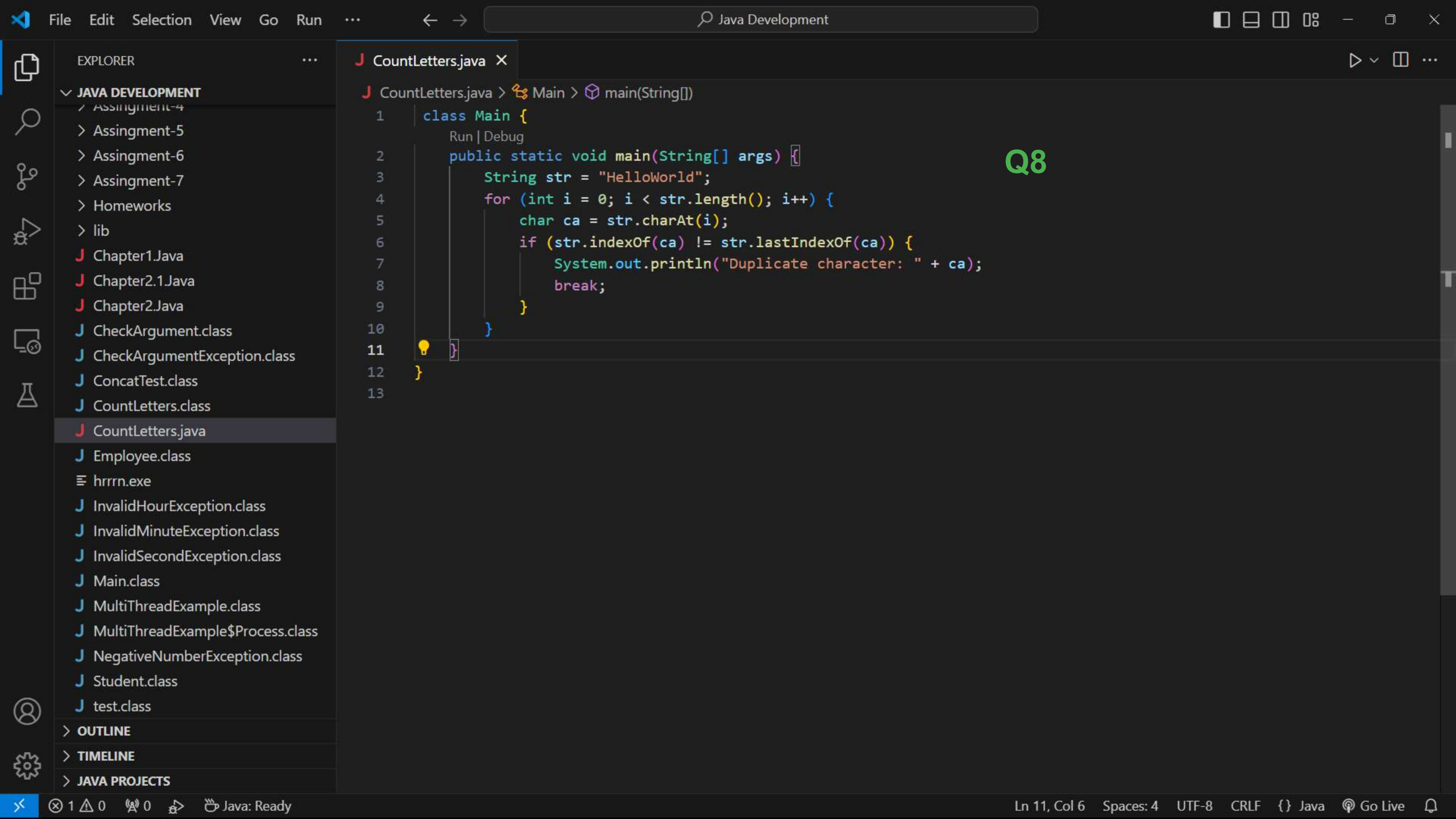
```
1 class Main {
2     public static void main(String[] args) {
3         String str = "LOL";
4         String reversedStr = new StringBuilder(str).reverse().toString();
5         if (str.equals(reversedStr)) {
6             System.out.println(str + " is a palindrome.");
7         } else {
8             System.out.println(str + " is not a palindrome.");
9         }
10    }
11 }
12
13
14
```

Q6

The screenshot displays the Visual Studio Code IDE interface. The Explorer panel on the left shows a project structure under 'JAVA DEVELOPMENT' with folders like 'Assignment-4', 'Assignment-5', 'Assignment-6', 'Assignment-7', 'Homeworks', and 'lib'. It also lists several Java files, including 'Chapter1.Java', 'Chapter2.1.Java', 'Chapter2.Java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'CountLetters.java' (highlighted), 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', and 'test.class'. The Problems panel in the center shows one error in 'CountLetters.java'. The Terminal panel on the right shows a Windows PowerShell session where the user has run a Java command to compile and run 'Main' in the 'redhat.java' directory, resulting in the output 'LOL is a palindrome.'



The image shows the Visual Studio Code interface with a dark theme. The Explorer panel on the left displays a project structure for 'JAVA DEVELOPMENT'. It includes folders like 'Assignment-4' through 'Assignment-7', 'Homeworks', and 'lib'. Below these are various Java files and classes, such as 'Chapter1.Java', 'Chapter2.1.Java', 'Chapter2.Java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'CountLetters.java' (which is selected), 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', and 'test.class'. The bottom of the Explorer panel has sections for 'OUTLINE', 'TIMELINE', and 'JAVA PROJECTS'. The main area of the IDE is the 'TERMINAL' panel, which shows a Windows PowerShell session. The output includes the PowerShell prompt, copyright information, a link to download PowerShell, and the execution of a Java command. The command runs a Java application named 'Main' with specific JVM options and a classpath. The output of the command is 'LOL is a palindrome.' followed by another PowerShell prompt. The user then changes the directory and runs the same Java command again, which outputs 'The array as a string is: [1, 2, 3, 4, 5]'. The right sidebar contains a list of actions: 'Code', 'Run: Rectan...', 'Run: Main' (which is highlighted), and 'Debug: Main'.



EXPLORER

JAVA DEVELOPMENT

- Assignment-4
- Assignment-5
- Assignment-6
- Assignment-7
- Homeworks
- lib
- Chapter1.Java
- Chapter2.1.Java
- Chapter2.Java
- CheckArgument.class
- CheckArgumentException.class
- ConcatTest.class
- CountLetters.class
- CountLetters.java
- Employee.class
- hrrrn.exe
- InvalidHourException.class
- InvalidMinuteException.class
- InvalidSecondException.class
- Main.class
- MultiThreadExample.class
- MultiThreadExample\$Process.class
- NegativeNumberException.class
- Student.class
- test.class

OUTLINE

TIMELINE

JAVA PROJECTS

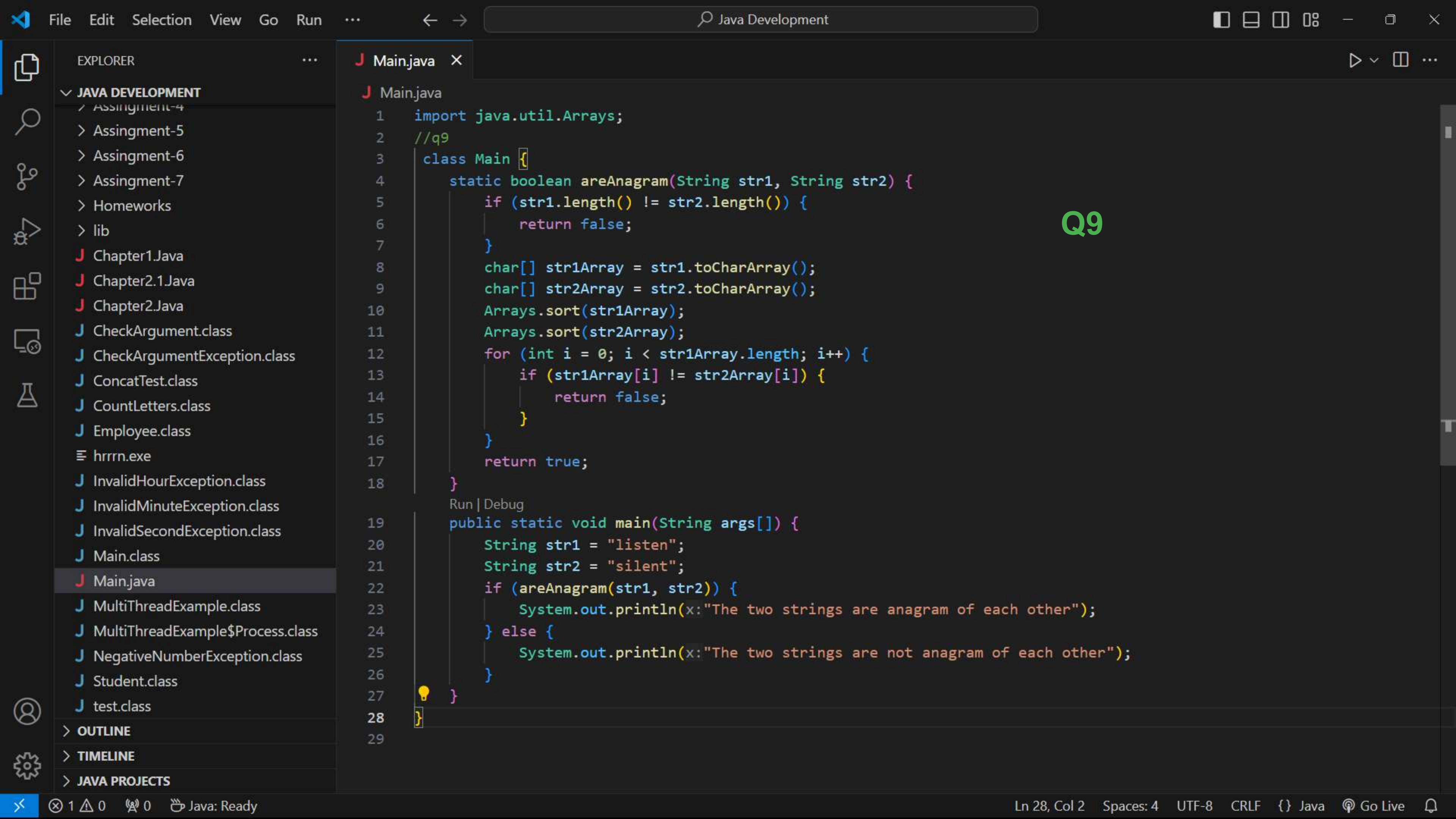
CountLetters.java

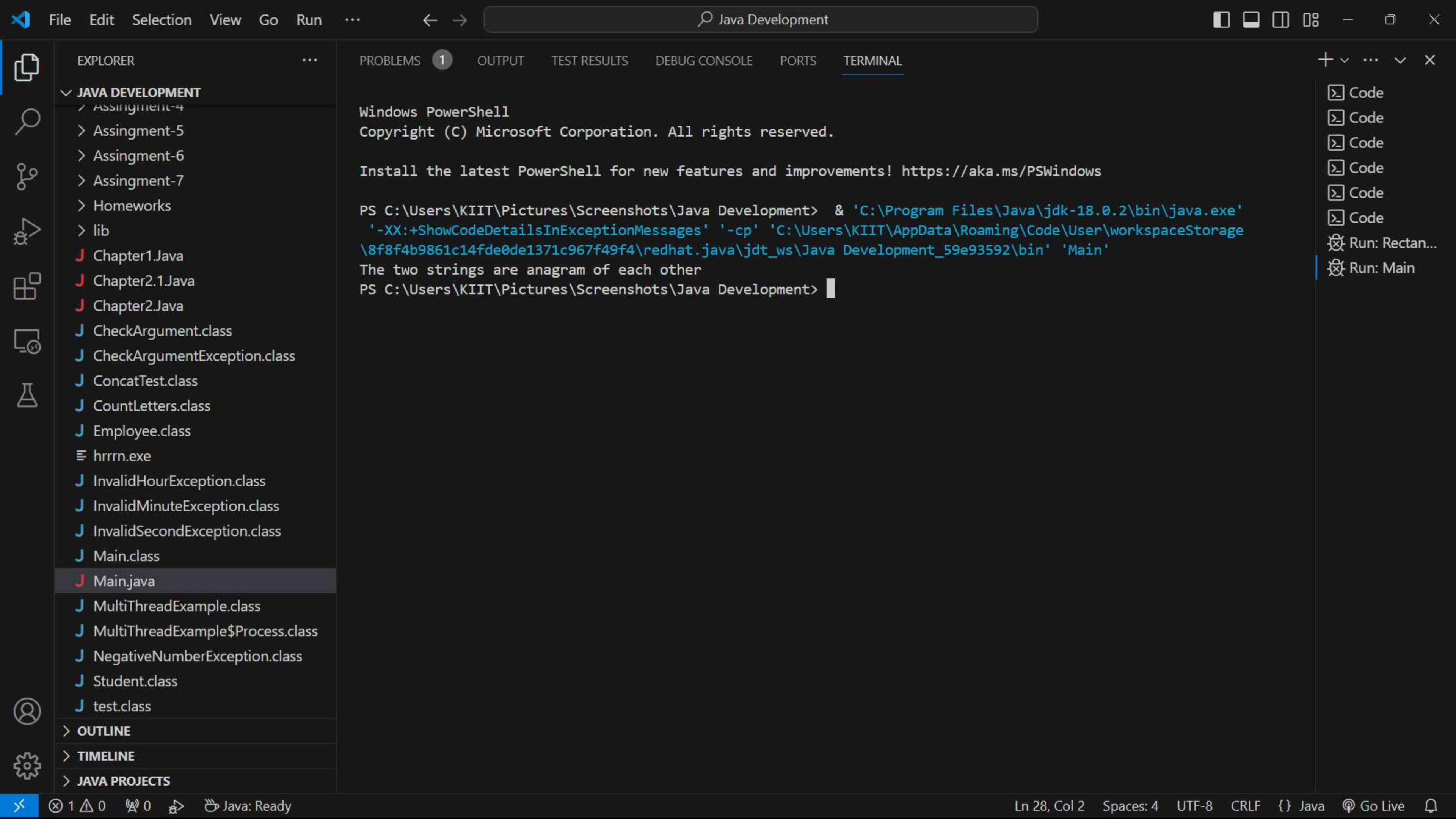
CountLetters.java > Main > main(String[])

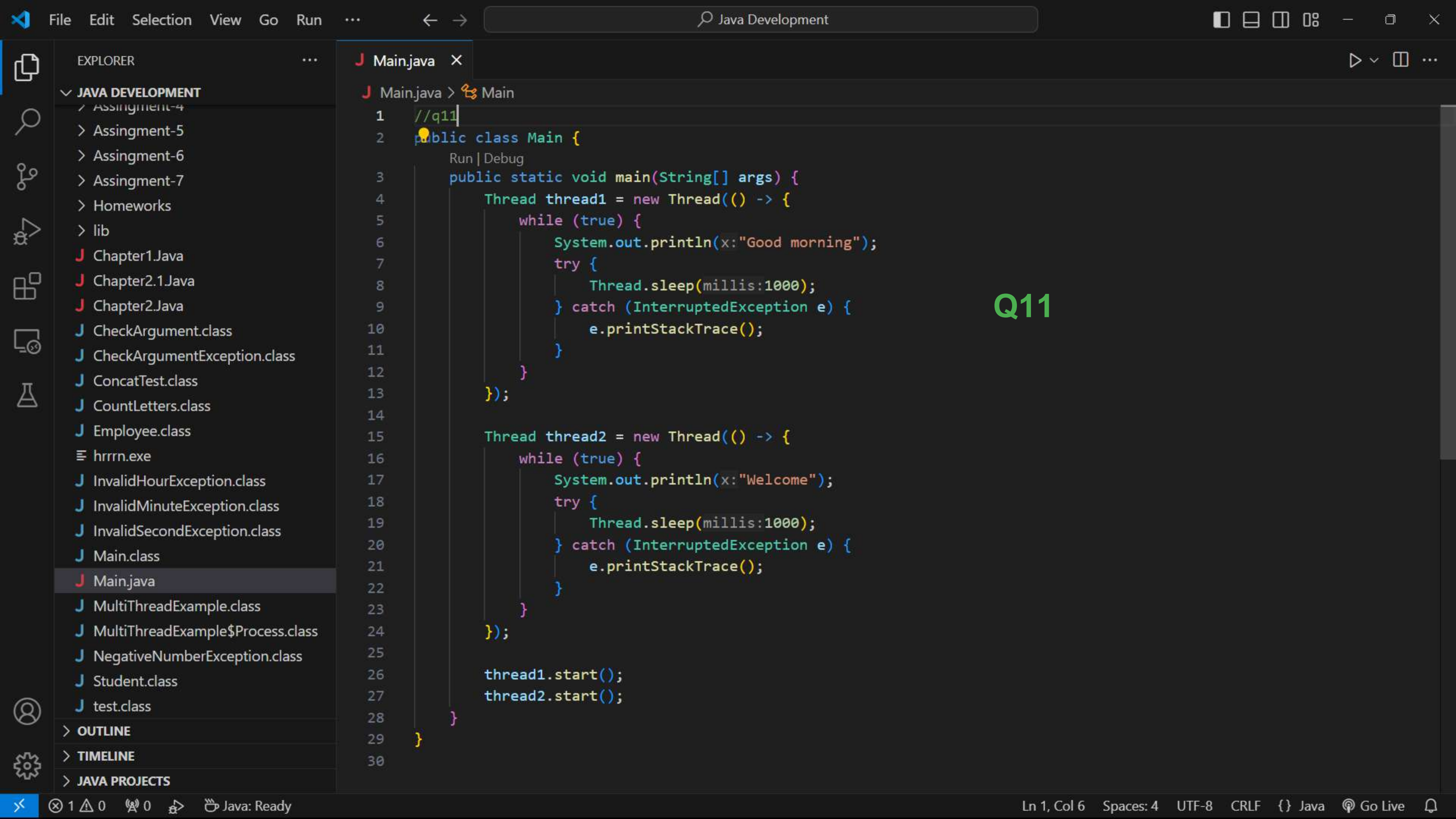
```
1 class Main {
  Run | Debug
2 public static void main(String[] args) {
3     String str = "HelloWorld";
4     for (int i = 0; i < str.length(); i++) {
5         char ca = str.charAt(i);
6         if (str.indexOf(ca) != str.lastIndexOf(ca)) {
7             System.out.println("Duplicate character: " + ca);
8             break;
9         }
10    }
11 }
12
13
```

Q8

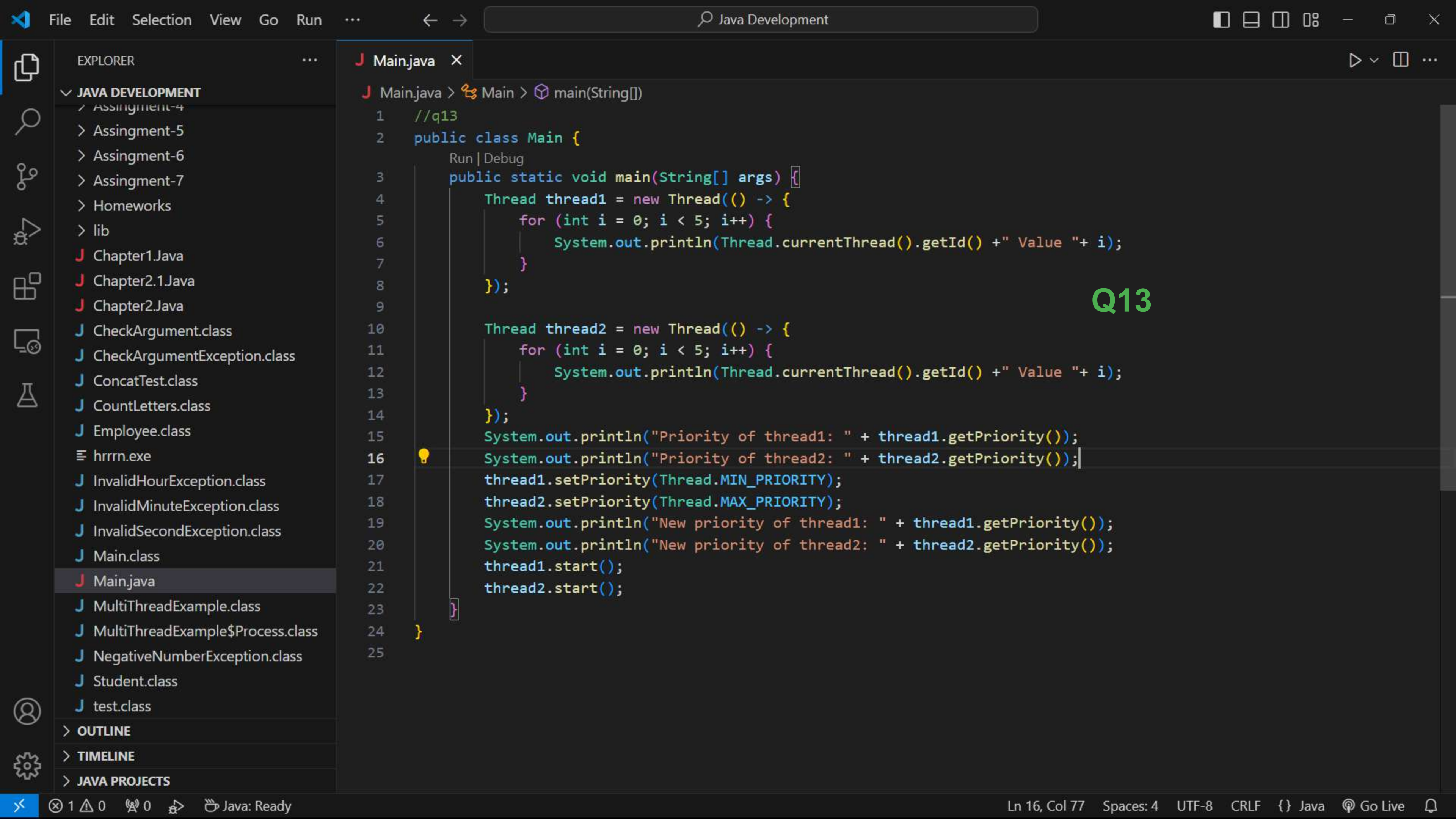
The image shows the IntelliJ IDEA IDE interface. On the left is the 'EXPLORER' sidebar with a tree view of a project named 'JAVA DEVELOPMENT'. The tree includes folders like 'Assignment-4', 'Assignment-5', 'Assignment-6', 'Assignment-7', 'Homeworks', 'lib', and a list of Java files including 'Chapter1.java', 'Chapter2.1.java', 'Chapter2.java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'CountLetters.java' (which is selected), 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', and 'test.class'. Below the tree are sections for 'OUTLINE', 'TIMELINE', and 'JAVA PROJECTS'. The main editor area displays the 'TERMINAL' tab. It shows a Windows command prompt with the following text:
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
Duplicate character: 1
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> |
On the right side of the IDE, the 'Run' configuration panel is visible, showing a list of run configurations: 'Code', 'Code', 'Code', 'Code', 'Code', 'Code', 'Run: Rectan...', 'Run: Main' (which is selected and highlighted), and 'Debug: Main'.



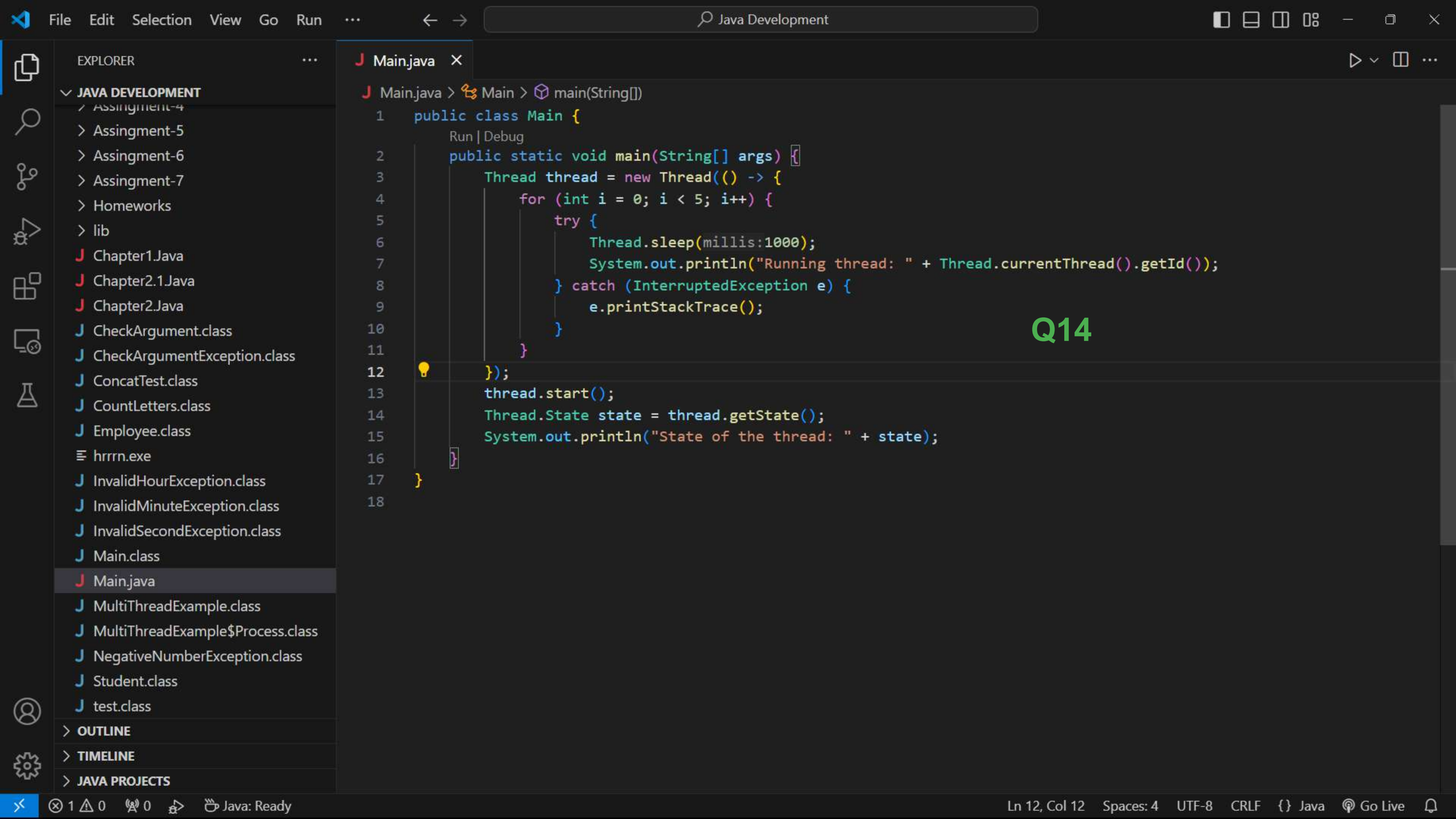




[illegible]



The image shows the Visual Studio Code interface with several panels open. The Explorer panel on the left shows a project named 'JAVA DEVELOPMENT' with a file tree including 'Assignment-4' through 'Assignment-7', 'Homeworks', 'lib', and various Java files like 'Chapter1.java', 'Chapter2.1.java', 'Chapter2.java', 'CheckArgument.class', 'CheckArgumentException.class', 'ConcatTest.class', 'CountLetters.class', 'Employee.class', 'hrrrn.exe', 'InvalidHourException.class', 'InvalidMinuteException.class', 'InvalidSecondException.class', 'Main.class', 'Main.java', 'MultiThreadExample.class', 'MultiThreadExample\$Process.class', 'NegativeNumberException.class', 'Student.class', and 'test.class'. The Terminal panel at the bottom shows the command prompt output for running a Java program. The output includes the command 'c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'', followed by thread priorities and values: 'Priority of thread1: 5', 'Priority of thread2: 5', 'New priority of thread1: 1', 'New priority of thread2: 10', '15 Value 0', '15 Value 1', '15 Value 2', '15 Value 3', '15 Value 4', '16 Value 0', '16 Value 1', '16 Value 2', '16 Value 3', '16 Value 4'. The Problems panel shows one error, and the Output panel shows the command prompt output. The Test Results panel is empty. The Debug Console panel is empty. The Ports panel is empty. The Run and Debug panel shows the 'Run: Main' configuration selected.



The screenshot displays the Visual Studio Code IDE interface. The Explorer panel on the left shows a project structure under 'JAVA DEVELOPMENT' with a folder 'Assignment-4' and several files including 'Main.java'. The Problems panel in the center shows one error for 'Main.java' related to a 'NullPointerException'. The Terminal panel on the right shows the execution of a Java program, displaying the output 'Reversed string is: dlrow olleH' and the state of the thread as 'RUNNABLE'.

EXPLORER

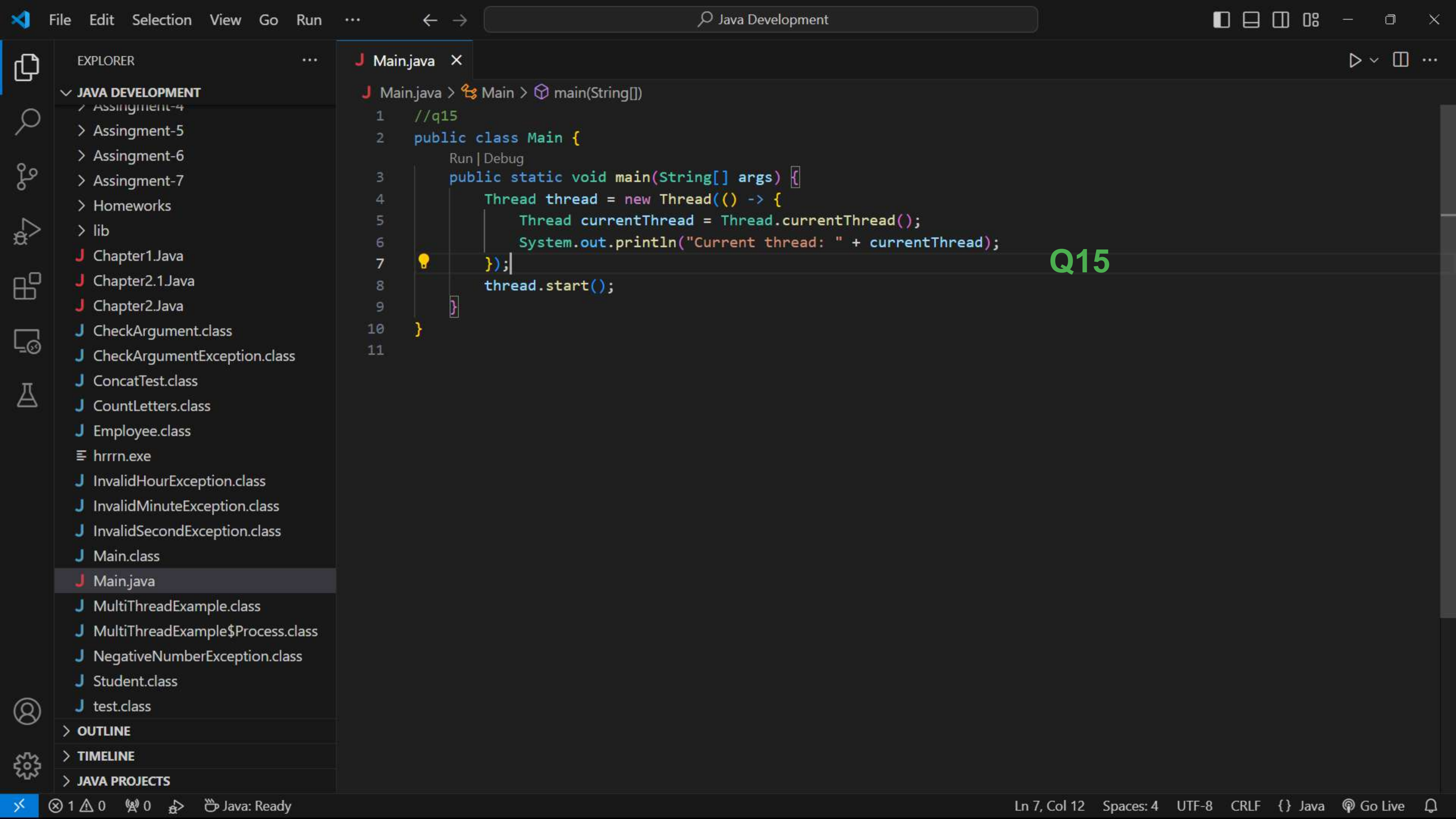
- JAVA DEVELOPMENT
 - Assignment-4
 - Assignment-5
 - Assignment-6
 - Assignment-7
 - Homeworks
 - lib
 - Chapter1.java
 - Chapter2.1.java
 - Chapter2.java
 - CheckArgument.class
 - CheckArgumentException.class
 - ConcatTest.class
 - CountLetters.class
 - Employee.class
 - hrrrn.exe
 - InvalidHourException.class
 - InvalidMinuteException.class
 - InvalidSecondException.class
 - Main.class
 - Main.java
 - MultiThreadExample.class
 - MultiThreadExample\$Process.class
 - NegativeNumberException.class
 - Student.class
 - test.class

PROBLEMS 1

- Main.java: NullPointerException

TERMINAL

```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> cd "c:\Users\KIIT\Pictures\Screenshots\Java Development"
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> if ($?) { javac Main.java } ; if ($?) { java Main }
Reversed string is: dlrow olleH
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> cd "c:\Users\KIIT\Pictures\Screenshots\Java Development"
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> if ($?) { javac Main.java } ; if ($?) { java Main }
State of the thread: RUNNABLE
Running thread: 15
Running thread: 15
Running thread: 15
Running thread: 15
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

The image shows the Visual Studio Code interface with several panels open. On the left is the Explorer panel showing a project structure under 'JAVA DEVELOPMENT'. The main area contains the Problems, Output, Test Results, Debug Console, Ports, and Terminal panels. The Terminal panel is active, displaying a command prompt session where a Java application has been run. The command used is to run 'Main' in a specific workspace, and the output shows the current thread as 'Thread[Thread-0,5,main]'. On the right side, a vertical list of actions is visible, including 'Code', 'Run: Rectan...', and 'Run: Main'.

File

Edit

Selection

View

Go

Run

...

←

→

Java Development

EXPLORER

...

▼ JAVA DEVELOPMENT

Assignment-4

> Assignment-5

> Assignment-6

> Assignment-7

> Homeworks

> lib

Chapter1.Java

Chapter2.1.Java

Chapter2.Java

CheckArgument.class

CheckArgumentException.class

ConcatTest.class

CountLetters.class

Employee.class

hrrrn.exe

InvalidHourException.class

InvalidMinuteException.class

InvalidSecondException.class

Main.class

Main.java

MultiThreadExample.class

MultiThreadExample\$Process.class

NegativeNumberException.class

Student.class

test.class

> OUTLINE

> TIMELINE

> JAVA PROJECTS

PROBLEMS 1

OUTPUT

TEST RESULTS

DEBUG CONSOLE

PORTS

TERMINAL

PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'

Reversed string is: dlroW olleH

PS C:\Users\KIIT\Pictures\Screenshots\Java Development>

Code

Code

Code

Code

Code

Code

Run: Rectan...

Run: Main

Code

1

0

0

Java: Ready

Ln 18, Col 1

Spaces: 4

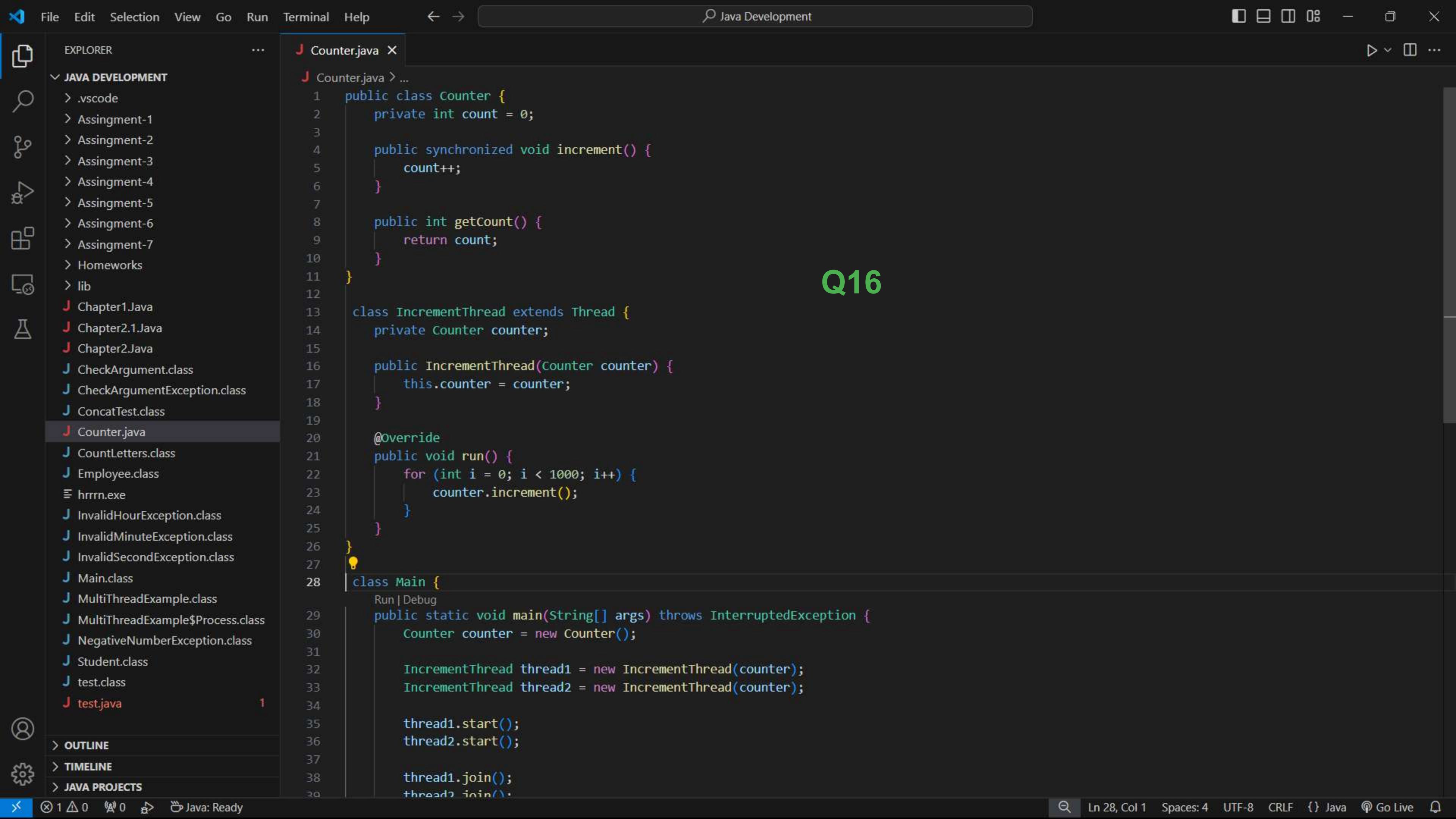
UTF-8

CRLF

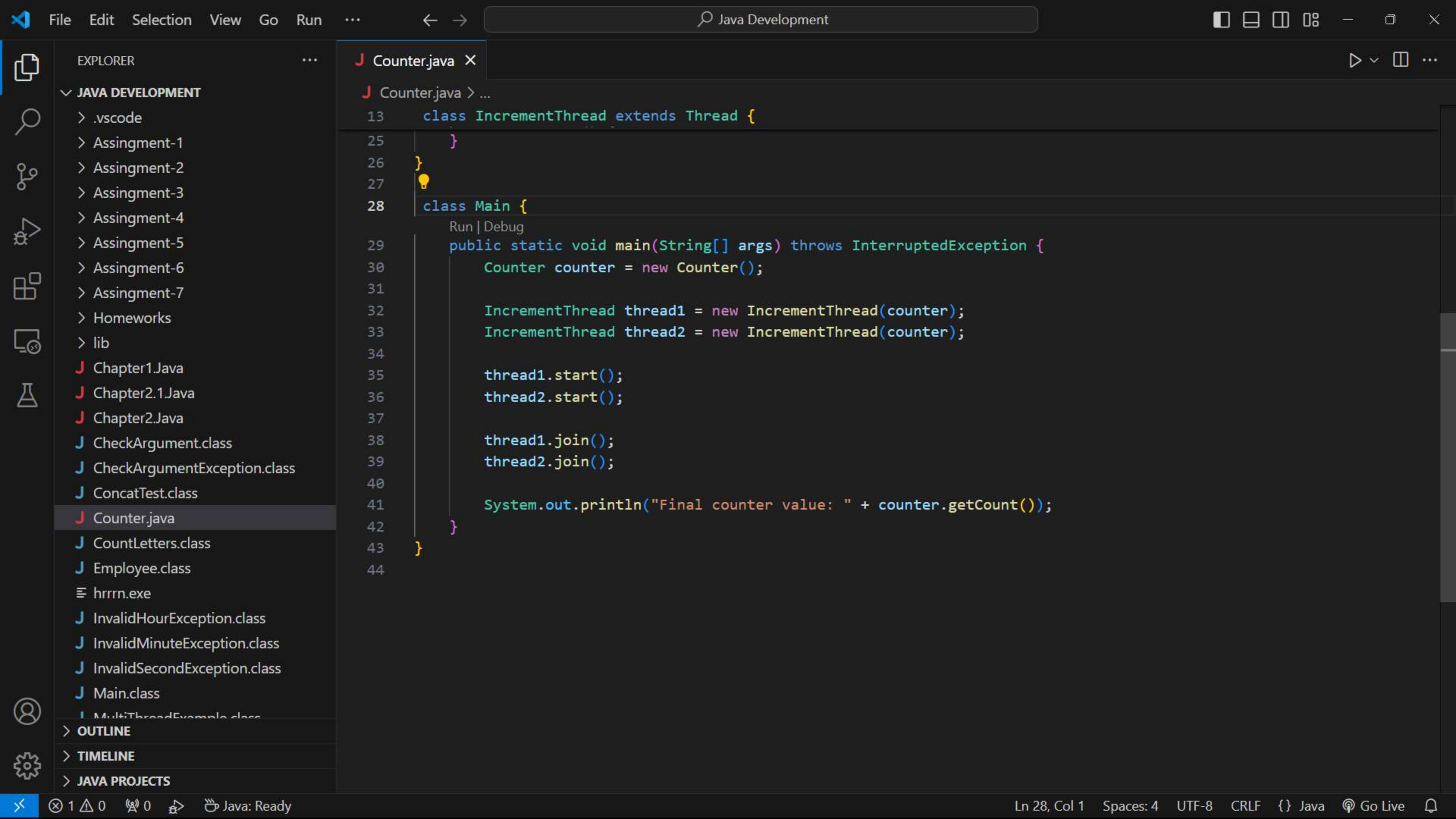
{}

Java

Go Live



Q16




```

J Main.java x
J Main.java > ...
1 import java.util.LinkedList;
2 public class Main {
3     public static void main(String[] args) {
4         Buffer buffer = new Buffer();
5
6         Thread producerThread = new Thread(() -> {
7             try {
8                 buffer.produce();
9             } catch (InterruptedException e) {
10                 e.printStackTrace();
11             }
12         });
13
14         Thread consumerThread = new Thread(() -> {
15             try {
16                 buffer.consume();
17             } catch (InterruptedException e) {
18                 e.printStackTrace();
19             }
20         });
21
22         producerThread.start();
23         consumerThread.start();
24     }
25 }
26
27 class Buffer {
28     private LinkedList<Integer> list = new LinkedList<>();
29     private final int capacity = 2; // Buffer capacity
30
31     public void produce() throws InterruptedException {
32         int value = 0;
33         while (true) {
34             synchronized (this) {
35                 while (list.size() == capacity) {
36                     wait(); // Wait if buffer is full
37                 }
38                 list.add(value++);
39             }
40         }
41     }
42
43     public void consume() {
44         if (list.isEmpty()) {
45             throw new IllegalStateException("Buffer is empty");
46         }
47         list.remove();
48     }
49 }

```

Q17

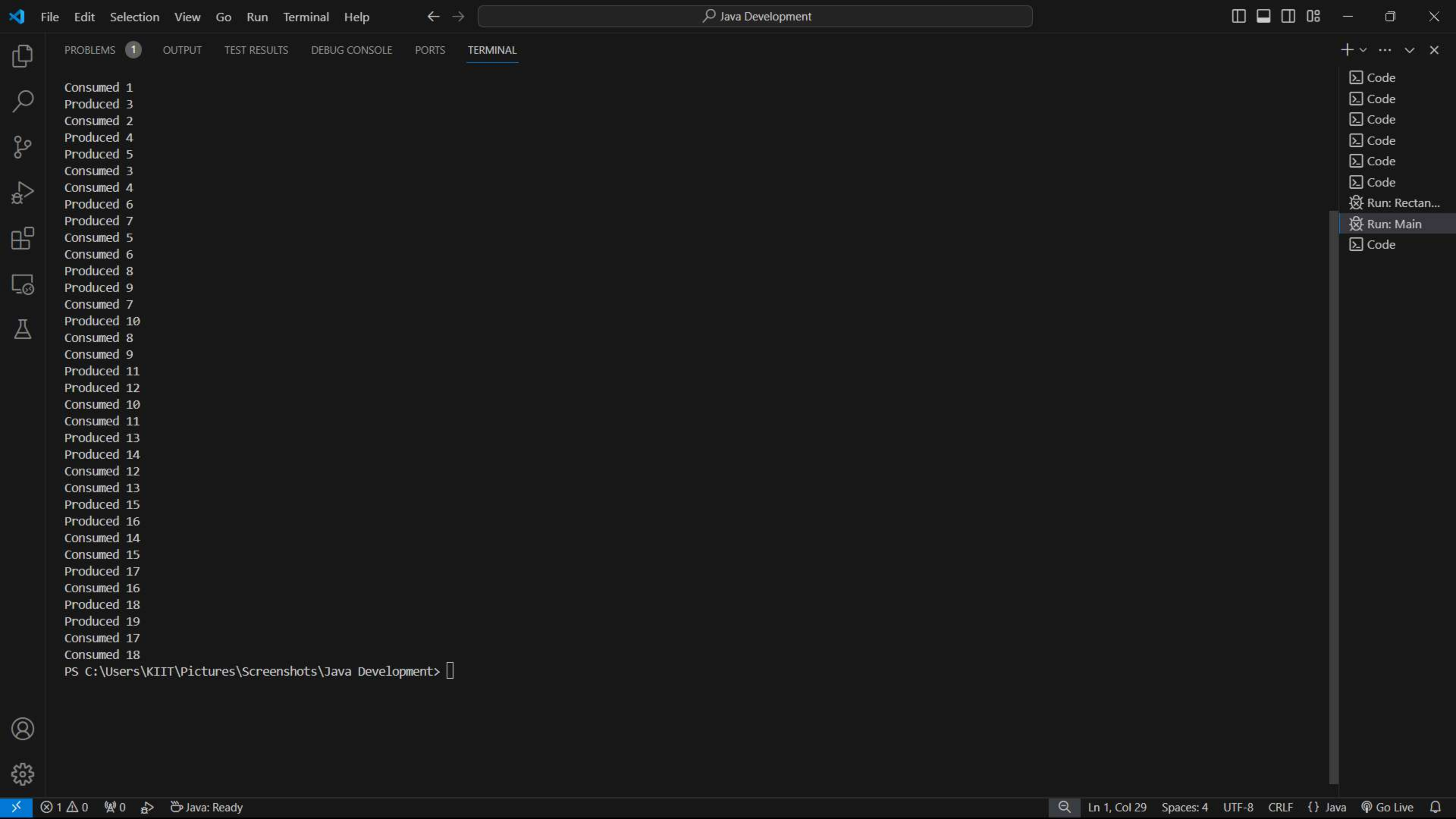
Main.java

J Main.java > ...

```

27 class Buffer {
28     private LinkedList<Integer> list = new LinkedList<>();
29     private final int capacity = 2; // Buffer capacity
30
31     public void produce() throws InterruptedException {
32         int value = 0;
33         while (true) {
34             synchronized (this) {
35                 while (list.size() == capacity) {
36                     wait(); // Wait if buffer is full
37                 }
38
39                 list.add(value++);
40                 System.out.println("Produced " + value);
41
42                 notify(); // Notify the consumer thread
43
44                 Thread.sleep(1000);
45             }
46         }
47     }
48
49     public void consume() throws InterruptedException {
50         while (true) {
51             synchronized (this) {
52                 while (list.size() == 0) {
53                     wait(); // Wait if buffer is empty
54                 }
55
56                 int value = list.removeFirst();
57                 System.out.println("Consumed " + value);
58
59                 notify(); // Notify the producer thread
60
61                 Thread.sleep(1000);
62             }
63         }
64     }
65 }

```

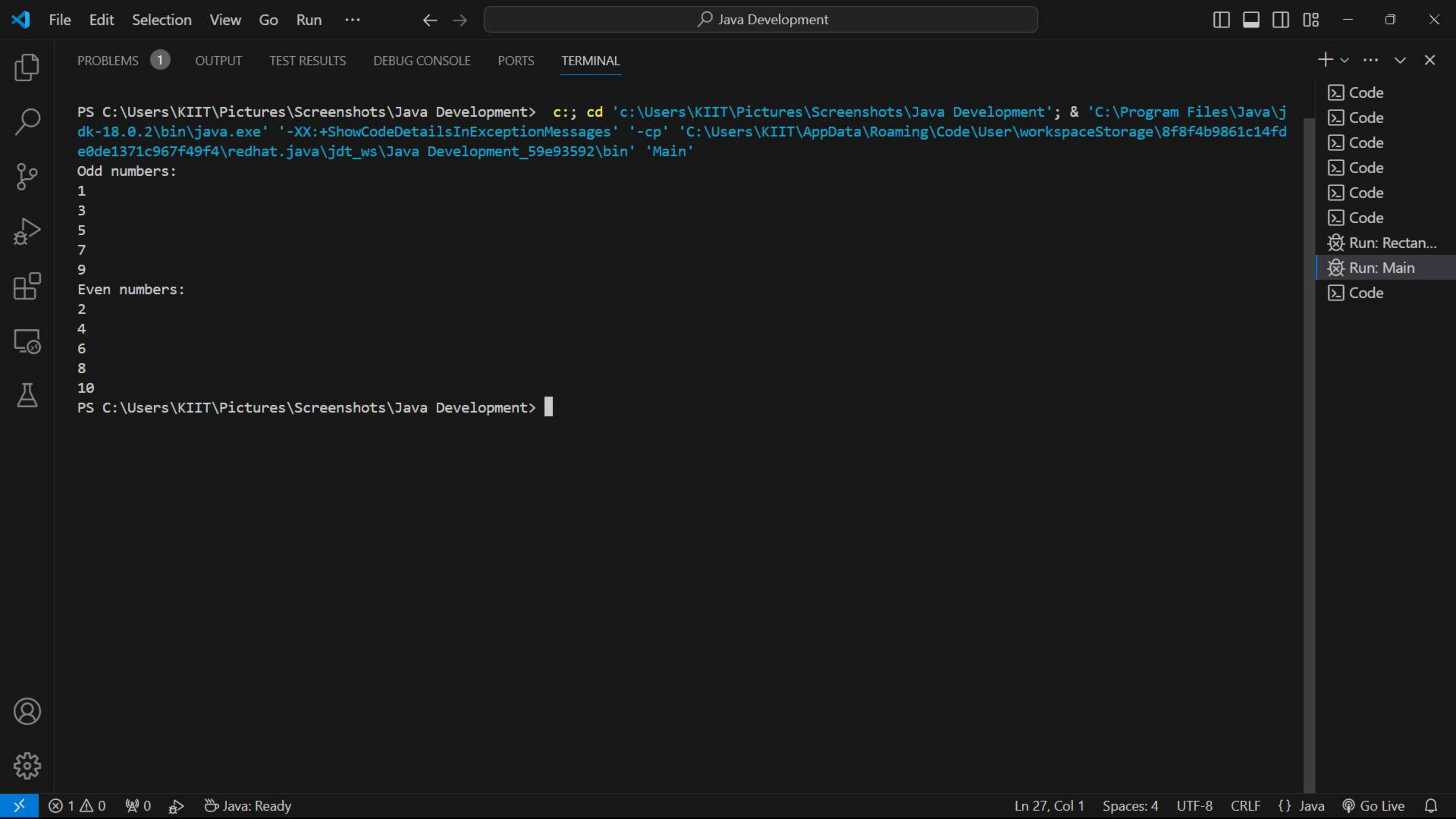



```

1  public class Main {
    Run | Debug
2      public static void main(String[] args) {
3          int[] array = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
4
5          Thread evenThread = new Thread(() -> {
6              System.out.println(x:"Even numbers:");
7              for (int i : array) {
8                  if (i % 2 == 0) {
9                      System.out.println(i);
10                 }
11             }
12         });
13
14         Thread oddThread = new Thread(() -> {
15             System.out.println(x:"Odd numbers:");
16             for (int i : array) {
17                 if (i % 2 != 0) {
18                     System.out.println(i);
19                 }
20             }
21         });
22
23         evenThread.start();
24         oddThread.start();
25     }
26 }
27

```

Q18



```
PS C:\Users\KIIT\Pictures\Screenshots\Java Development> c:; cd 'c:\Users\KIIT\Pictures\Screenshots\Java Development'; & 'C:\Program Files\Java\jdk-18.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\8f8f4b9861c14fde0de1371c967f49f4\redhat.java\jdt_ws\Java Development_59e93592\bin' 'Main'
Odd numbers:
1
3
5
7
9
Even numbers:
2
4
6
8
10
PS C:\Users\KIIT\Pictures\Screenshots\Java Development>
```

- Code
- Code
- Code
- Code
- Code
- Code
- Run: Rectan...
- Run: Main
- Code