

# BCSE103E ASSIGNEMENT

## ALL EXERCISES FROM WEEK 1 AND WEEK 2

18/07/24

### 1. Printing a integer and a double widening type casting

```
main.java
File Edit View
class Main{
    public static void main(String[] args){
        int myint = 9;
        double mydouble=myint;
        System.out.println(myint);
        System.out.println(mydouble);
    }
}

Windows PowerShell
PS D:\23BAI1564> javac .\Main.java
PS D:\23BAI1564> java Main
9
9.0
PS D:\23BAI1564>
```

### 2. Adding numbers

```
J180723_2.java
File Edit View
class J180723_2{
    public static void main(String[] args){
        int sum1 = 100 + 50;
        int sum2 = sum1 + 250;
        int sum3 = sum2 + sum1;
        System.out.println(sum1);
        System.out.println(sum2);
        System.out.println(sum3);
    }
}

Windows PowerShell
PS D:\23BAI1564> javac .\J180723_2.java
PS D:\23BAI1564> java J180723_2
150
400
800
PS D:\23BAI1564>
```

### 3. Ternary operator

The screenshot shows a Windows desktop environment. On the left, there are two code editor windows side-by-side. The left window is titled 'J180723\_2.java' and contains the following Java code:

```
class J180723_3{
    public static void main(String[] args){
        int x,y;
        x = 20;
        y = (x == 1)? 61:90;
        System.out.println("Value of y is: " + y);
        y = (x == 20)? 61:90;
        System.out.println("Value of y is: " + y);
    }
}
```

The right window is titled 'J180723\_3.java' and contains the following Java code:

```
PS D:\23BAI1564> javac J180723_3.java
PS D:\23BAI1564> java J180723_3
Value of y is: 90
Value of y is: 61
PS D:\23BAI1564>
```

On the right side of the desktop, there is a terminal window titled 'Windows PowerShell' with the same command and output as the code editor.

### 4. Length of string

The screenshot shows a Windows desktop environment. On the left, there are two code editor windows side-by-side. The left window is titled 'J180723\_2.java' and contains the following Java code:

```
class J180723_4{
    public static void main(String[] args){
        String txt="This is a string.";
        System.out.println("The length of the text string is : " + txt.length());
    }
}
```

The right window is titled 'J180723\_4.java' and contains the following Java code:

```
PS D:\23BAI1564> javac J180723_4.java
PS D:\23BAI1564> java J180723_4
The length of the text string is : 17
PS D:\23BAI1564>
```

On the right side of the desktop, there is a terminal window titled 'Windows PowerShell' with the same command and output as the code editor.

## 5. toUpperCase & toLowerCase

The screenshot shows a Windows desktop environment. At the top, there is a taskbar with several pinned icons. Below the taskbar, there is a window titled "Windows PowerShell" which contains a command-line interface. The main content area displays the output of a Java program. The Java code in the editor is as follows:

```
class J180723_5{
    public static void main(String[] args){
        String txt = "This is also a sentence.";
        System.out.println(txt.toUpperCase());
        System.out.println(txt.toLowerCase());
    }
}
```

The output from the terminal window is:

```
PS D:\23BAI1564> javac J180723_5.java
PS D:\23BAI1564> java J180723_5
THIS IS ALSO A SENTENCE.
this is also a sentence.
PS D:\23BAI1564>
```

## 6. indexOf

The screenshot shows a Windows desktop environment. At the top, there is a taskbar with several pinned icons. Below the taskbar, there is a window titled "Windows PowerShell" which contains a command-line interface. The main content area displays the output of a Java program. The Java code in the editor is as follows:

```
class J180723_6{
    public static void main(String[] args){
        String txt = "Please locate where 'locate' occurs!";
        System.out.println(txt.indexOf("locate"));
    }
}
```

The output from the terminal window is:

```
PS D:\23BAI1564> javac J180723_6.java
PS D:\23BAI1564> java J180723_6
7
PS D:\23BAI1564> |
```

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## 1. String concatenation

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows a Java project structure with files J0722\_1.java, J0722\_2.java, J0722\_3.java, and J0722\_4.java.
- Code Editor:** Displays the content of J0722\_1.java:

```
1 class J0722_1 {
2     Run main | Debug main | Run | Debug
3     public static void main(String args[]){
4         String firstName = "Rajiv";
5         String lastName = "Vincent";
6         System.out.println(firstName + " " + lastName);
7     }
8 }
```
- Terminal:** Shows the output of running the code:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> c:; cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA'; & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2202' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\ld151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0722_1'
Rajiv Vincent
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Debug View:** Shows multiple debug configurations listed.

## 2. Integer concatenation

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows a Java project structure with files J0722\_1.java, J0722\_2.java, J0722\_3.java, and J0722\_4.java.
- Code Editor:** Displays the content of J0722\_2.java:

```
1 class J0722_2 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         String x = "10";
5         int y = 20;
6         String z = x + y;
7         System.out.println(z);
8     }
9 }
```
- Terminal:** Shows the output of running the code:

```
1020
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> c:; cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA'; & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2232' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\ld151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0722_2'
1020
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Debug View:** Shows multiple debug configurations listed.

### 3. Escape sequence

The screenshot shows a Java code editor interface. The left sidebar has a tree view under 'JAVA' with files J0722\_1.java, J0722\_2.java, J0722\_3.java (selected), J0722\_4.java, and HelloWorld.java. The main editor area displays the following code:

```
1 class J0722_3 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         String txt = "This is an \"Sample Text\" to demonstrate the capability of java.";
5         System.out.println(txt);
6     }
7 }
```

The terminal below shows the output of running the program:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> c:; cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA'; & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2240' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa\bin' 'J0722_3'
This is an "Sample Text" to demonstrate the capability of java.
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```

### 4. Math.max()

The screenshot shows a Java code editor interface. The left sidebar has a tree view under 'JAVA' with files J0722\_1.java, J0722\_2.java, J0722\_3.java, J0722\_4.java (selected), and HelloWorld.java. The main editor area displays the following code:

```
1 class J0722_4 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         System.out.println(Math.max(a:5,b:10));
5     }
6 }
```

The terminal below shows the output of running the program:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> c:; cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA'; & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2248' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa\bin' 'J0722_4'
10
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```

## 5. Math.sqrt()

Screenshot of the Visual Studio Code interface showing a Java project. The Explorer sidebar shows files J0722\_1.java, J0722\_2.java, J0722\_3.java, J0722\_4.java, and J0722\_5.java. The J0722\_5.java file is open in the editor, displaying the following code:

```
1 class J0722_5 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         System.out.println(Math.sqrt(64));
5     }
6 }
```

The terminal window shows the command to run the Java application:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2276' '--enable-pr eview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code \User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin ' 'J0722_5'
```

The status bar at the bottom indicates "Indexing completed." and "Java: Ready".

## 6. Math.abs()

Screenshot of the Visual Studio Code interface showing a Java project. The Explorer sidebar shows files J0722\_1.java, J0722\_2.java, J0722\_3.java, J0722\_4.java, J0722\_5.java, and J0722\_6.java. The J0722\_6.java file is open in the editor, displaying the following code:

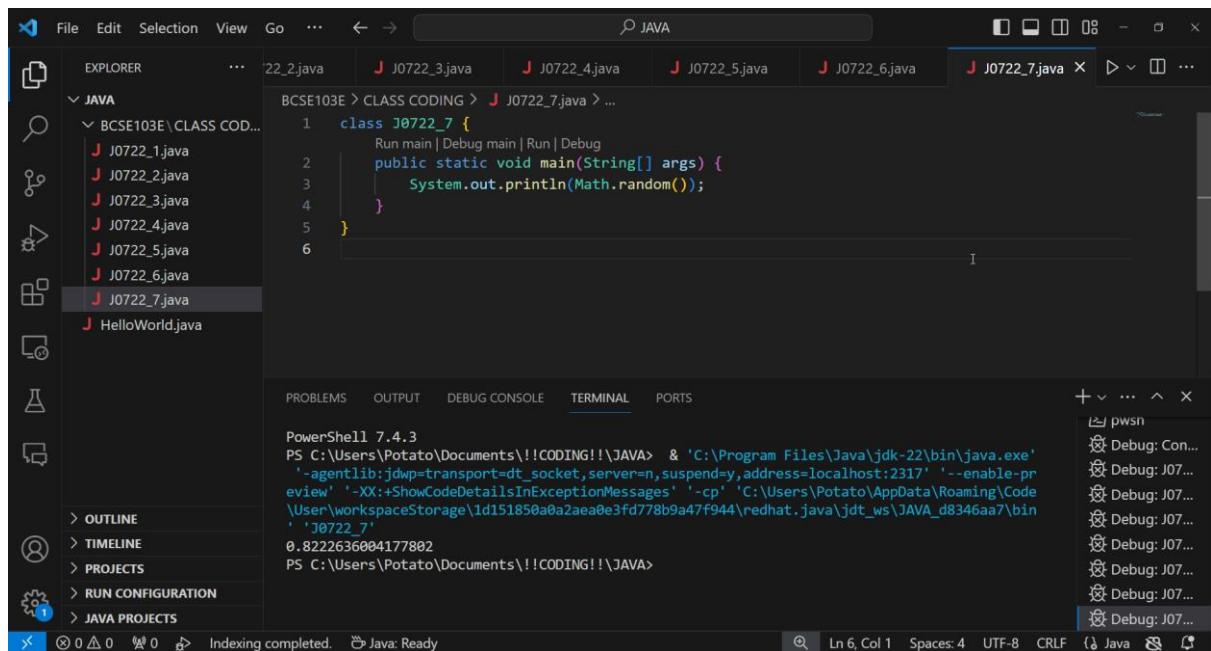
```
1 class J0722_6 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         System.out.println(Math.abs(-5));
5     }
6 }
```

The terminal window shows the command to run the Java application:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2287' '--enable-pr eview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code \User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin ' 'J0722_6'
```

The status bar at the bottom indicates "Indexing completed." and "Java: Ready".

## 7. Math.random()



The screenshot shows a Java development environment with the following details:

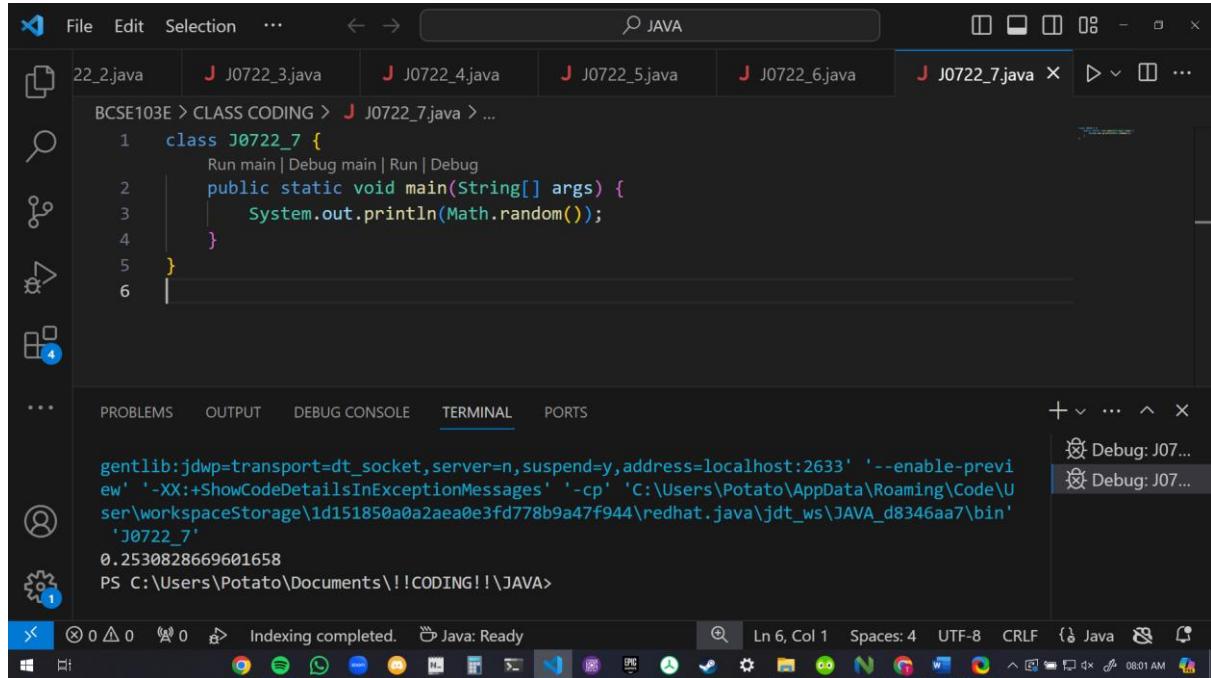
- File Menu:** File, Edit, Selection, View, Go, ...
- Toolbar:** Standard icons for file operations.
- Explorer:** Shows a project structure under "JAVA" named "BCSE103E > CLASS CODING > J0722\_7.java". The file "J0722\_7.java" is open and contains the following code:

```
1 class J0722_7 {
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args) {
4         System.out.println(Math.random());
5     }
6 }
```
- Terminal:** Displays PowerShell 7.4.3 output:

```
PowerShell 7.4.3
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe'
    '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2317' '--enable-pr
eview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code
\User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin
' 'J0722_7'
0.8222636004177802
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Status Bar:** Shows indexing status: "Indexing completed" and Java status: "Java: Ready".

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## 1. Math.random()



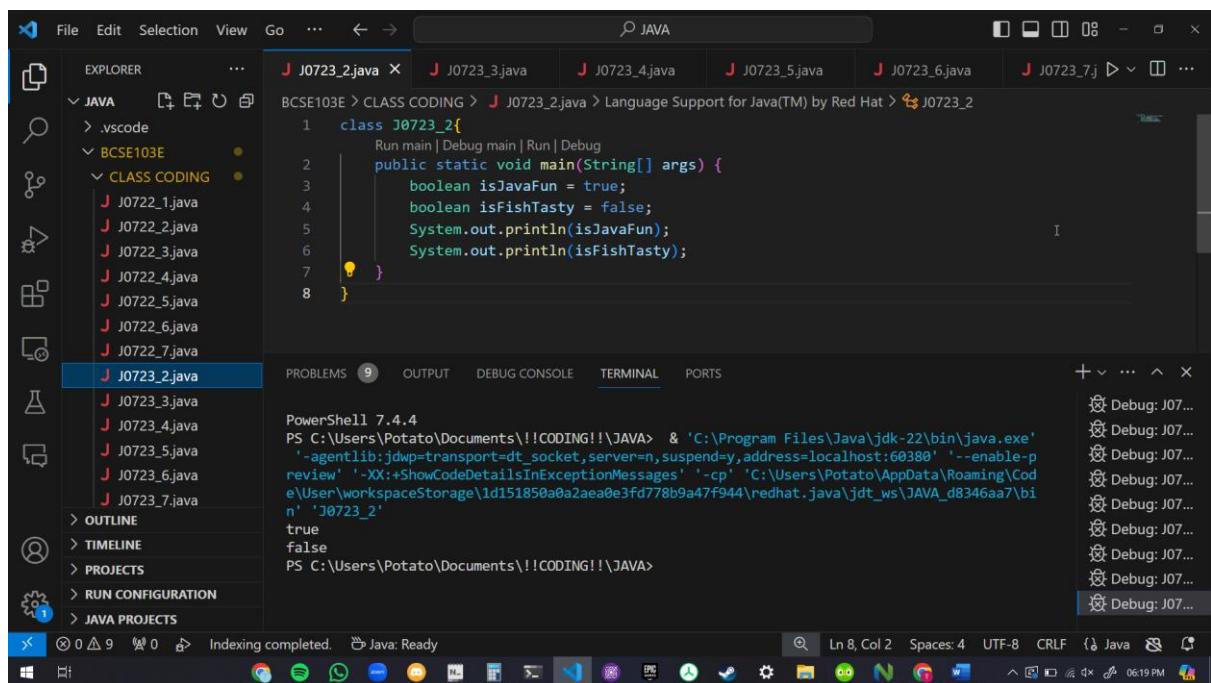
The screenshot shows a Java code editor with the following code in the J0722\_7.java file:

```
1 class J0722_7 {
2     public static void main(String[] args) {
3         System.out.println(Math.random());
4     }
5 }
6
```

The terminal output shows the result of running the program:

```
gentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:2633' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\CodeUser\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0722_7'
0.2530828669601658
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```

## 2. Boolean Logic



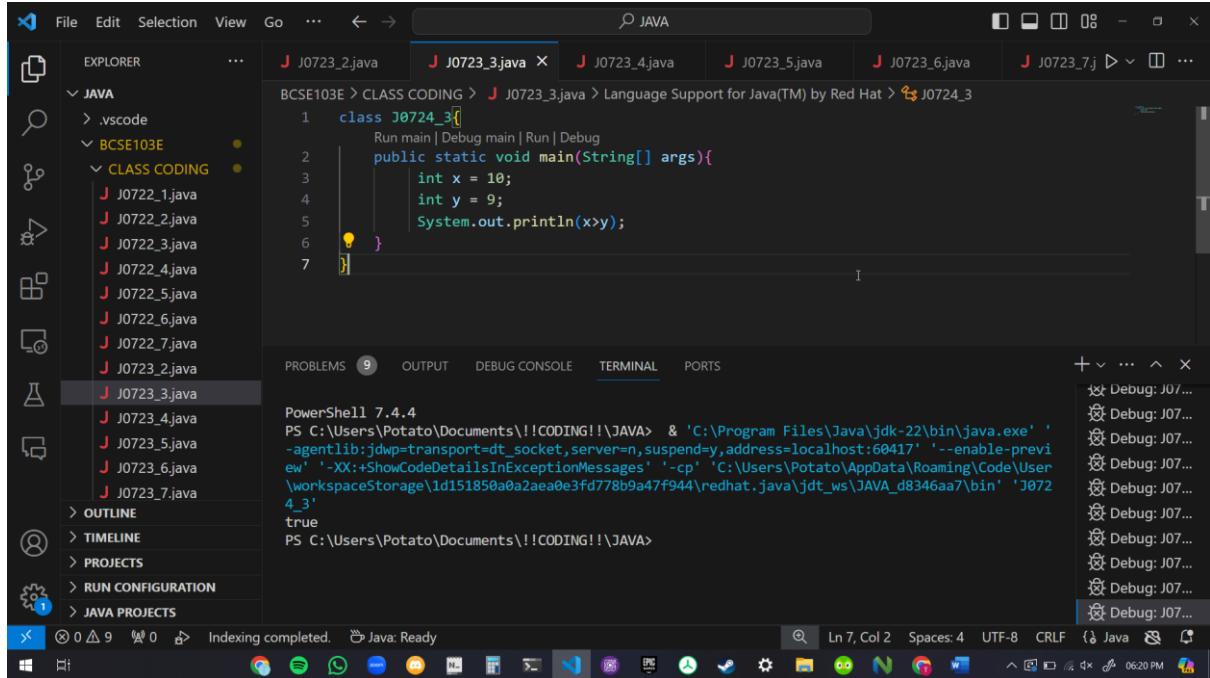
The screenshot shows a Java code editor with the following code in the J0723\_2.java file:

```
1 class J0723_2{
2     public static void main(String[] args) {
3         boolean isJavaFun = true;
4         boolean isFishTasty = false;
5         System.out.println(isJavaFun);
6         System.out.println(isFishTasty);
7     }
8 }
```

The terminal output shows the result of running the program:

```
PowerShell 7.4.4
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60380' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\CodeUser\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0723_2'
true
false
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```

### 3. Boolean Logic



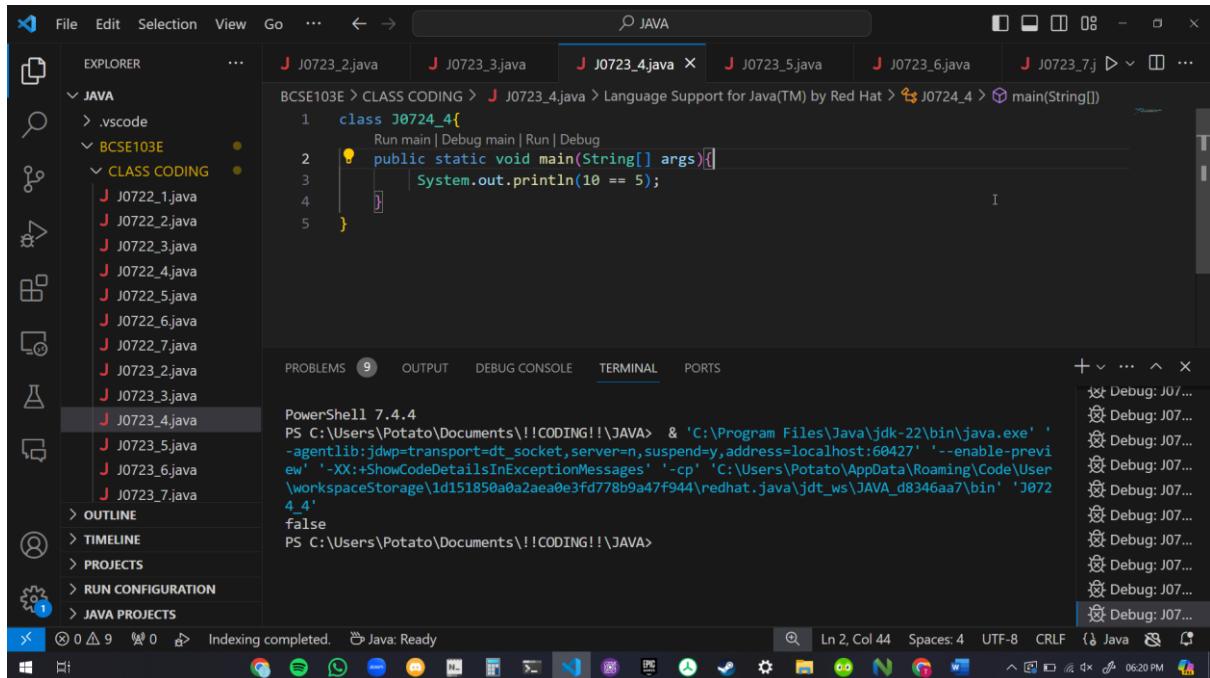
The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a project structure under "BCSE103E > CLASS CODING". The file "J0724\_3.java" is currently selected.
- Code Editor:** Displays the Java code for "J0724\_3.java".

```
1 class J0724_3{
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args){
4         int x = 10;
5         int y = 9;
6         System.out.println(x>y);
7     }
}
```
- Terminal:** Shows PowerShell output for running the code.

```
PowerShell 7.4.4
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdp=transport=dt_socket,server=n,suspend=y,address=localhost:60417' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\ld151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0724_3'
true
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Status Bar:** Shows indexing status ("Indexing completed."), Java environment ("Java: Ready"), and system information (Windows taskbar).

### 4. Comparison



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a project structure under "BCSE103E > CLASS CODING". The file "J0724\_4.java" is currently selected.
- Code Editor:** Displays the Java code for "J0724\_4.java".

```
1 class J0724_4{
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args){
4         System.out.println(10 == 5);
5     }
}
```
- Terminal:** Shows PowerShell output for running the code.

```
PowerShell 7.4.4
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdp=transport=dt_socket,server=n,suspend=y,address=localhost:60427' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\ld151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0724_4'
false
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Status Bar:** Shows indexing status ("Indexing completed."), Java environment ("Java: Ready"), and system information (Windows taskbar).

## 5. if

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, ...
- Title Bar:** JAVA
- Explorer:** Shows a project structure under 'JAVA' with files J0723\_2.java, J0723\_3.java, J0723\_4.java, J0723\_5.java (highlighted), J0723\_6.java, and J0723\_7.java.
- Editor:** Displays the Java code for J0723\_5.java:

```
1 class J0724_5{
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args){
4         if (20 > 18){
5             System.out.println("20 GREATER THAN 18");
6         }
7     }
}
```
- Terminal:** PowerShell 7.4.4 output:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60433' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0724_5'
20 GREATER THAN 18
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Status:** Indexing completed. Java: Ready

## 6. If else

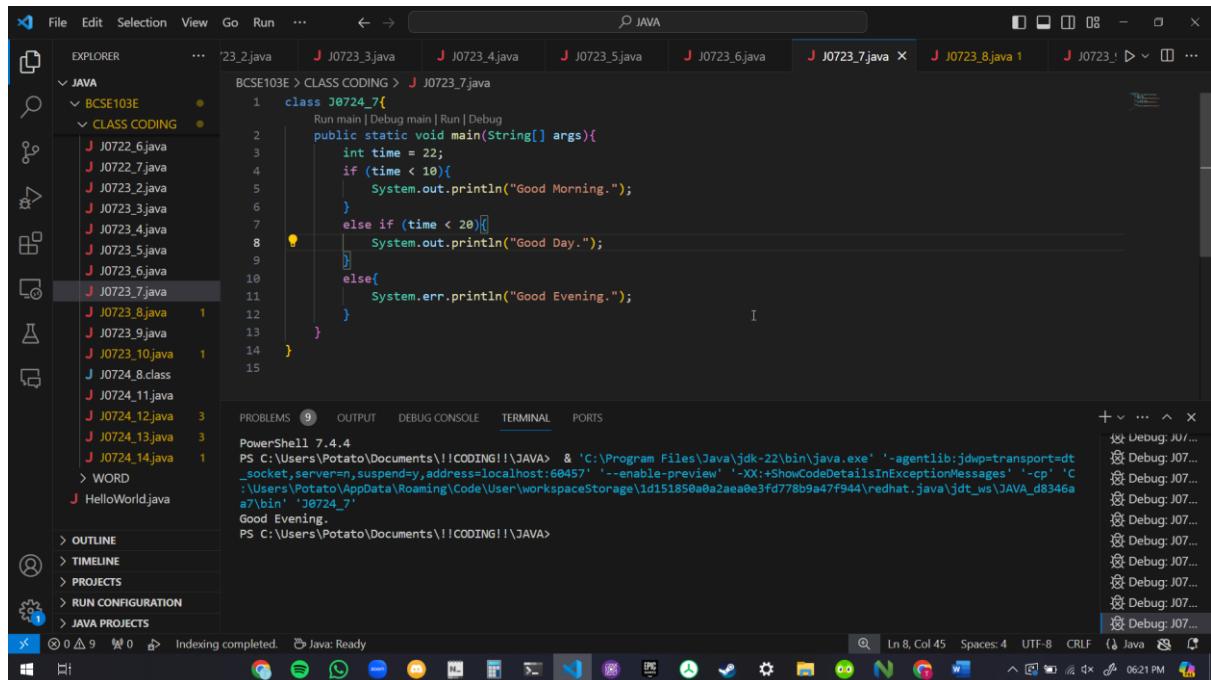
The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, ...
- Title Bar:** JAVA
- Explorer:** Shows a project structure under 'JAVA' with files J0723\_2.java, J0723\_3.java, J0723\_4.java, J0723\_5.java, J0723\_6.java (highlighted), and J0723\_7.java.
- Editor:** Displays the Java code for J0723\_6.java:

```
1 class J0724_6{
2     Run main | Debug main | Run | Debug
3     public static void main(String[] args){
4         int time = 20;
5         if (time < 18){
6             System.out.println("Good Day.");
7         }
8         else{
9             System.out.println("Good Evening.");
10        }
11    }
}
```
- Terminal:** PowerShell 7.4.4 output:

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60445' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151850a0a2aea0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa7\bin' 'J0724_6'
Good Evening.
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Status:** Indexing completed. Java: Ready

## 7. else if

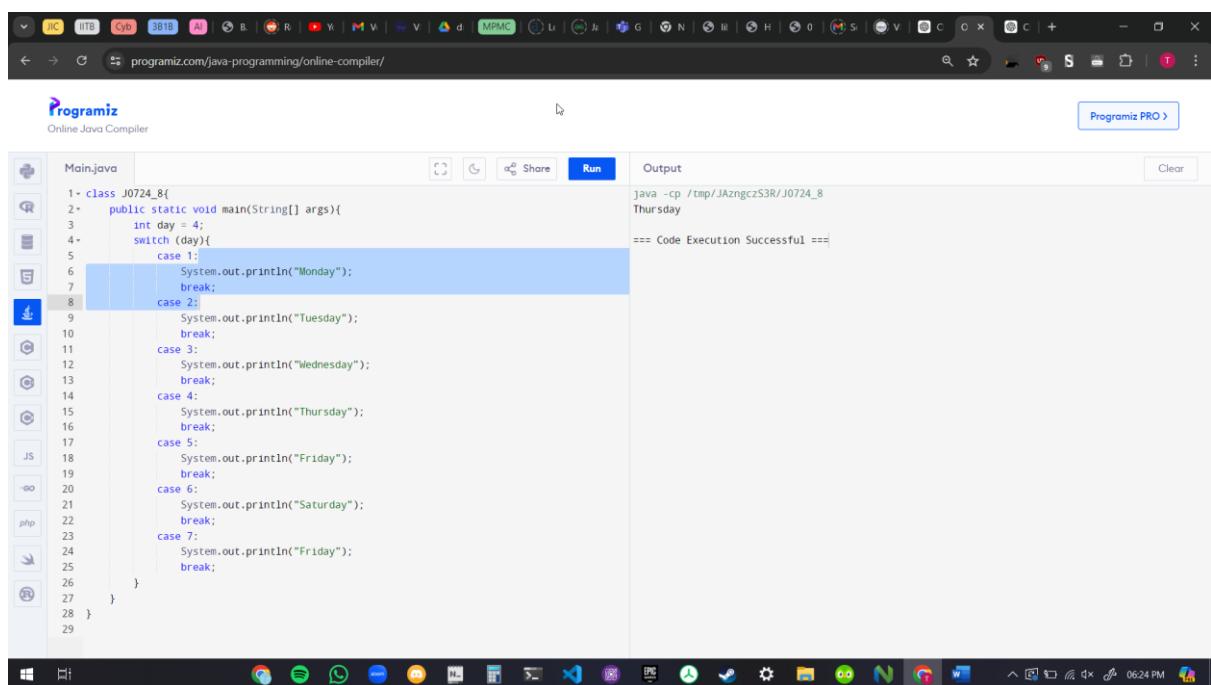


Screenshot of the Visual Studio Code (VS Code) interface. The Explorer sidebar shows a project structure under 'JAVA' with files like J0722\_6.java, J0722\_7.java, J0723\_2.java, etc. The current file is J0724\_7.java. The code contains an if-else-if-else structure based on the time variable:

```
1 class J0724_7{
2     public static void main(String[] args){
3         int time = 22;
4         if (time < 10){
5             System.out.println("Good Morning.");
6         }
7         else if (time < 20){
8             System.out.println("Good Day.");
9         }
10        else{
11            System.out.println("Good Evening.");
12        }
13    }
14 }
```

The terminal window shows the output of running the code: "Good Evening.".

## 8. Switch Case



Screenshot of the Programiz Online Java Compiler. The code editor displays Main.java with a switch statement for days of the week:

```
1 class J0724_8{
2     public static void main(String[] args){
3         int day = 4;
4         switch (day){
5             case 1:
6                 System.out.println("Monday");
7                 break;
8             case 2:
9                 System.out.println("Tuesday");
10                break;
11            case 3:
12                System.out.println("Wednesday");
13                break;
14            case 4:
15                System.out.println("Thursday");
16                break;
17            case 5:
18                System.out.println("Friday");
19                break;
20            case 6:
21                System.out.println("Saturday");
22                break;
23            case 7:
24                System.out.println("Sunday");
25                break;
26        }
27    }
28 }
```

The output window shows the execution results: "java -cp /tmp/JAzngczS3R/J0724\_8 Thursday" followed by "==== Code Execution Successful ===".

## 9. While

The screenshot shows the Eclipse IDE interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, ...
- Title Bar:** J JAVA
- Toolbar:** Standard Eclipse toolbar.
- Left Sidebar (Explorer):** Shows a tree view of Java files under BCSE103E > CLASS CODING. The file J0724\_9.java is selected.
- Central Area:** A code editor window displaying the following Java code:

```
1 class J0724_9{
2     public static void main(String[] args){
3         int i = 0;
4         while(i < 5){
5             System.out.println(i);
6             i++;
7         }
8     }
9 }
```
- Bottom Area:** Problems, Output, Debug Console, Terminal, Ports tab. The Output tab shows command-line logs related to Java execution.
- Bottom Status Bar:** Indexing completed, Java: Ready, Ln 10, Col 1, Spaces: 4, UTF-8, CRLF.

## 10. do - while

The screenshot shows the Eclipse IDE interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, ...
- Title Bar:** J JAVA
- Toolbar:** Standard Eclipse toolbar.
- Left Sidebar (Explorer):** Shows a tree view of Java files under BCSE103E > CLASS CODING. The file J0724\_9.java is selected.
- Central Area:** A code editor window displaying the following Java code:

```
1 class J0724_9{
2     public static void main(String[] args){
3         int i = 0;
4         do {
5             System.out.println(i);
6             i++;
7         } while(i < 5);
8     }
9 }
```
- Bottom Area:** Problems, Output, Debug Console, Terminal, Ports tab. The Output tab shows command-line logs related to Java execution.
- Bottom Status Bar:** Indexing completed, Java: Ready, Ln 5, Col 35, Spaces: 4, UTF-8, CRLF.

## 11. for

The screenshot shows a Java IDE interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, ...
- Toolbar:** Back, Forward, Home, Search, etc.
- Explorer:** Shows a tree view of files under BCSE103E > CLASS CODING. The file J0724\_10.java is selected.
- Code Editor:** Displays the following Java code:

```
1 class J0724_10{
2     public static void main(String[] args){
3         int i = 0;
4         for (i = 0; i < 5 ; i++){
5             System.out.println(i);
6         }
7     }
8 }
```
- Terminal:** Shows command-line output from PS C:\...

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA' & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60570' '--enable-preview
'-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151859a0a
2ae0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa\bin' 'J0724_10'
0
1
2
3
4
```
- Bottom Bar:** Indexing completed, Java: Ready, etc.

## 12. for – each

The screenshot shows a Java IDE interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, ...
- Toolbar:** Back, Forward, Home, Search, etc.
- Explorer:** Shows a tree view of files under BCSE103E > CLASS CODING. The file J0724\_11.java is selected.
- Code Editor:** Displays the following Java code:

```
1 class J0724_11{
2     public static void main(String[] args){
3         String[] cars = {"VOLVO","BMW","FORD","MADZA"};
4         for (String i:cars){
5             System.out.println(i);
6         }
7     }
8 }
```
- Terminal:** Shows command-line output from PS C:\...

```
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> cd 'c:\Users\Potato\Documents\!!CODING!!\JAVA' & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60587' '--enable-preview
'-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d151859a0a
2ae0e3fd778b9a47f944\redhat.java\jdt_ws\JAVA_d8346aa\bin' 'J0724_11'
MADZA
VOLVO
BMW
FORD
MADZA
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>
```
- Bottom Bar:** Indexing completed, Java: Ready, etc.

## 13. break

The screenshot shows the Eclipse IDE interface with the Java perspective selected. The top menu bar includes File, Edit, Selection, View, Go, Run, etc. The left-hand sidebar (Explorer view) shows a project structure under 'JAVA' with files like J0722\_6.java through J0724\_14.java. The central workspace displays the Java code for J0724\_12.java:

```
1 class J0724_12{
2     public static void main(String[] args){
3         for (int i = 0; i<10 ; i++){
4             if (i == 4){
5                 break;
6             }
7             System.out.println(i);
8         }
9     }
10 }
```

The code editor has syntax highlighting and a yellow cursor at the start of the 'break' keyword. Below the editor is the 'PROBLEMS' view, which is currently empty. The bottom status bar indicates 'Indexing completed.' and 'Java: Ready'.

## 14. Continue

This screenshot is similar to the previous one, showing the Eclipse IDE with the Java perspective. The Explorer view shows the same project structure. The central workspace displays the Java code for J0724\_13.java:

```
1 class J0724_13{
2     public static void main(String[] args){
3         for (int i = 0; i<10 ; i++){
4             if (i == 4){
5                 continue;
6             }
7             System.out.println(i);
8         }
9     }
10 }
```

The code editor highlights the 'continue' keyword with a yellow cursor. The 'PROBLEMS' view shows three errors related to the code. The bottom status bar indicates 'Indexing completed.' and 'Java: Ready'.

## 15. JAVA UTIL

The screenshot shows a Java development environment with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, ...
- Title Bar:** J0724\_14.java 1
- Explorer:** Shows a tree view of Java files under BCSE103E > CLASS CODING, including J0723\_6.java through J0724\_14.java.
- Editor:** Displays the code for J0724\_14.java:

```
BCSE103E > CLASS CODING > J0724_14.java > Language Support for Java(TM) by Red Hat > J0724_14 > main(String[])
1 import java.util.Scanner;
2 class J0724_14 {
3     Run main | Debug main | Run | Debug
4         public static void main(String[] args) {
5             Scanner myobj = new Scanner(System.in);
6             String username;
7             System.out.println("Enter username: ");
8             username = myobj.nextLine();
9             System.out.println("Username is : " + username);
10        }
11    }
```
- Terminal:** Shows command-line output for running the Java application, including environment variables and the Java command.
- Problems:** Shows 3 errors.
- Output:** Shows the application's standard output.
- Debug Console:** Shows the Java runtime environment configuration.
- Terminal:** Shows the command-line interface used for execution.
- Ports:** Shows a list of active Java processes.
- Bottom Bar:** Includes icons for file operations, search, and help, along with status information like indexing completion and Java readiness.

28/07/24

## 1. String Demo

The screenshot shows the Eclipse IDE interface. In the center, there is a code editor window displaying a Java file named J0728\_1.java. The code contains a single class definition:1 class J0728\_1 {  
2 public static void main(String[] args) {  
3 String x = "Tejas ";  
4 String y = "23BAI1564";  
5 String z = x + y;  
6 System.out.println(z);  
7 }  
8 }In the bottom right corner of the code editor, there is a small yellow lightbulb icon. Below the code editor, the Eclipse interface includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The DEBUG CONSOLE tab is active, showing command-line output from PowerShell 7.4.4. The output shows the execution of the Java file and its output:PowerShell 7.4.4  
PS C:\Users\Potato\Documents\!!CODING!!\JAVA> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-agentlib:jdwp=transport=dt\_socket,server=n,suspend=y,address=localhost:60781' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Potato\AppData\Roaming\Code\User\workspaceStorage\1d15185ba0a2aae0e3fd778b9a47f944\redhat.java\jdt\_ws\JAVA\_d8346a\bin' 'J0728\_1'  
Tejas 23BAI1564  
PS C:\Users\Potato\Documents\!!CODING!!\JAVA>The Eclipse interface also features a left sidebar with various icons and a tree view of project files. At the bottom, there is a toolbar with standard application icons.

## 2. Calculator

The screenshot shows the Eclipse IDE interface. In the center, there is a code editor window displaying a Java file named J0728\_2.java. The code defines a class with a main method that handles user input for arithmetic operations:1 import java.util.Scanner;  
2 class J0728\_2 {  
3 public static void main(String[] args) {  
4 Scanner scanner = new Scanner(System.in);  
5 int choice;  
6 System.out.println("Welcome to calculator!");  
7 while (true) {  
8 System.out.print("Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit");  
9 choice = scanner.nextInt();  
10 if (choice == 0) {  
11 System.out.println("Quitting...");  
12 break;  
13 }  
14 System.out.print("Enter first number (x): ");  
15 double x = scanner.nextDouble();  
16 System.out.print("Enter second number (y): ");  
17 double y = scanner.nextDouble();  
18 switch (choice) {  
19 case 1:  
20 System.out.println("Result: " + (x + y));  
21 break;  
22 case 2:  
23 System.out.println("Result: " + (x - y));  
24 break;  
25 case 3:  
26 System.out.println("Result: " + (x \* y));  
27 break;  
28 case 4:  
29 if (y != 0) {  
30 System.out.println("Result: " + (x / y));  
31 } else {  
32 System.out.println("Error: Division by zero is not allowed.");  
33 }  
34 break;  
35 default:  
36 System.out.println("INVALID INPUT");  
37 }  
38 }  
39 }  
40 scanner.close();  
41 }The Eclipse interface includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The DEBUG CONSOLE tab is active, showing command-line output from PowerShell. The output shows the execution of the Java file and the interaction with the user for several calculations:PowerShell  
PS C:\Users\Potato\Documents\!!CODING!!\JAVA\BCSE103E\CLASS CODING> javac J0728\_2.java  
PS C:\Users\Potato\Documents\!!CODING!!\JAVA\BCSE103E\CLASS CODING> java J0728\_2  
Welcome to calculator!  
Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit  
1  
Enter first number (x): 1  
Enter second number (y): 2  
Result: 3.0  
Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit  
2  
Enter first number (x): 3  
Enter second number (y): 2  
Result: 1.0  
Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit  
3  
Enter first number (x): 4  
Enter second number (y): 5  
Result: 20.0  
Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit  
4  
Enter first number (x): 20  
Enter second number (y): 4  
Result: 5.0  
Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4. Division 0. Exit  
0  
Quitting ...  
PS C:\Users\Potato\Documents\!!CODING!!\JAVA\BCSE103E\CLASS CODING> |The Eclipse interface also features a left sidebar with various icons and a tree view of project files. At the bottom, there is a toolbar with standard application icons.

```
import java.util.Scanner;

class J0728_2{

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        int choice;

        System.out.println("Welcome to calculator!");

        while (true) {

            System.out.println("Choose your operation: 1. Addition 2. Subtraction 3. Multiplication 4.
Division 0. Exit");

            choice = scanner.nextInt();

            if (choice == 0) {

                System.out.println("Quitting...");

                break;

            }

            System.out.print("Enter first number (x): ");

            double x = scanner.nextDouble();

            System.out.print("Enter second number (y): ");

            double y = scanner.nextDouble();

            switch (choice) {

                case 1:

                    System.out.println("Result: " + (x + y));

                    break;

                case 2:

                    System.out.println("Result: " + (x - y));

                    break;

                case 3:
```

```
        System.out.println("Result: " + (x * y));

        break;

    case 4:

        if (y != 0) {

            System.out.println("Result: " + (x / y));

        } else {

            System.out.println("Error: Division by zero is not allowed.");

        }

        break;

    default:

        System.out.println("INVALID INPUT");

    }

}

scanner.close();

}

}
```