

CSE1007
LAB ASSESSMENT-4

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20BCE0923

1. Read a string from the user and display the all possible prefixes and suffixes using two threads

```
import java.util.*;

class Suffix extends Thread {

    Suffix() {

        String str = "VELLORE";
        char[] chr = str.toCharArray();
        System.out.println("Printing the suffix:");
        for (int i = chr.length-1; i >= 0; i--) {

            for (int k = i; k >= 0; k--) {
                System.out.print(chr[k]);
            }

            System.out.println();
        }
    }

    public void run() {

        try {
            Thread.sleep(500);
        } catch (InterruptedException e) {
            System.out.println(e);
        }
    }
}

class Prefix extends Thread {
```

```

Prefix() {
    System.out.println("Enter a String: ");
    Scanner sc = new Scanner(System.in);
    String s = sc.nextLine();
    sc.close();
    int length= s.length();

    char [] a=s.toCharArray();

    System.out.println("\nPrinting the prefix: ");

    for (int i = length-1; i >= 0; i--) {
        for (int j = 0; j <= i; j++) {
            System.out.print(a[j]);
        }
        System.out.println();
    }

}

public void run() {

    try {
        Thread.sleep(500);
    } catch (InterruptedException e) {
        System.out.println(e);
    }

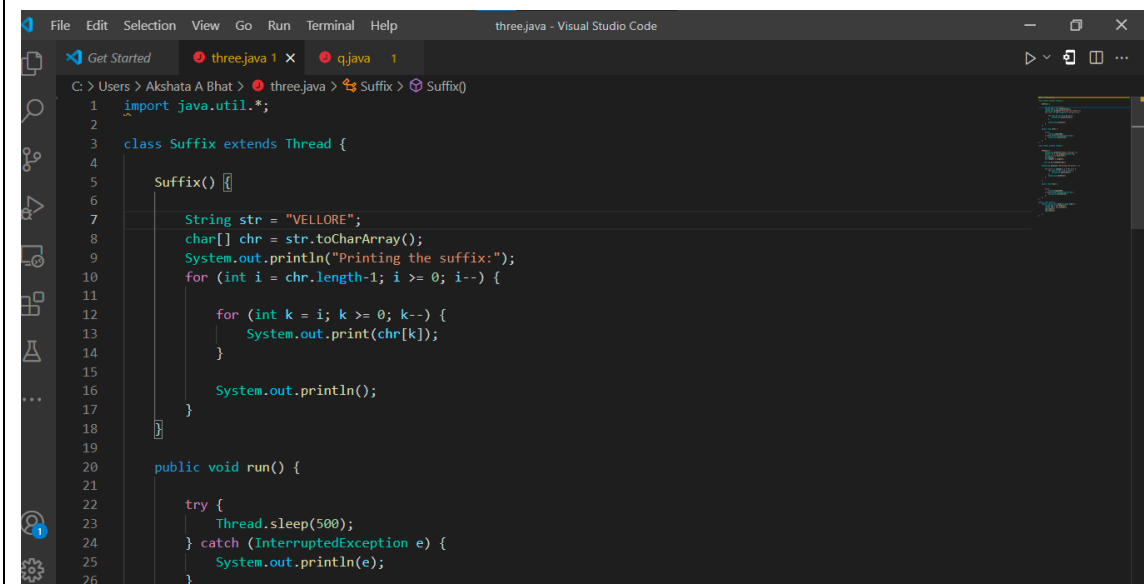
}

}

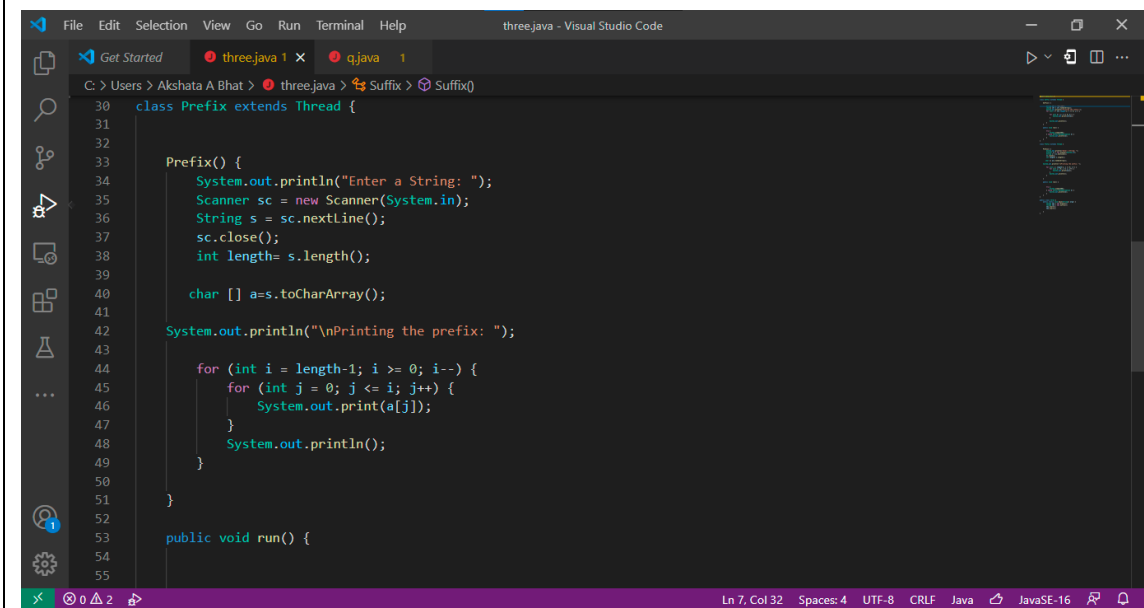
public class three {
    public static void main(String[] args) {
        Thread th1 = new Prefix();
        Thread th2 = new Suffix();
        th1.start();
        th2.start();
    }
}

```

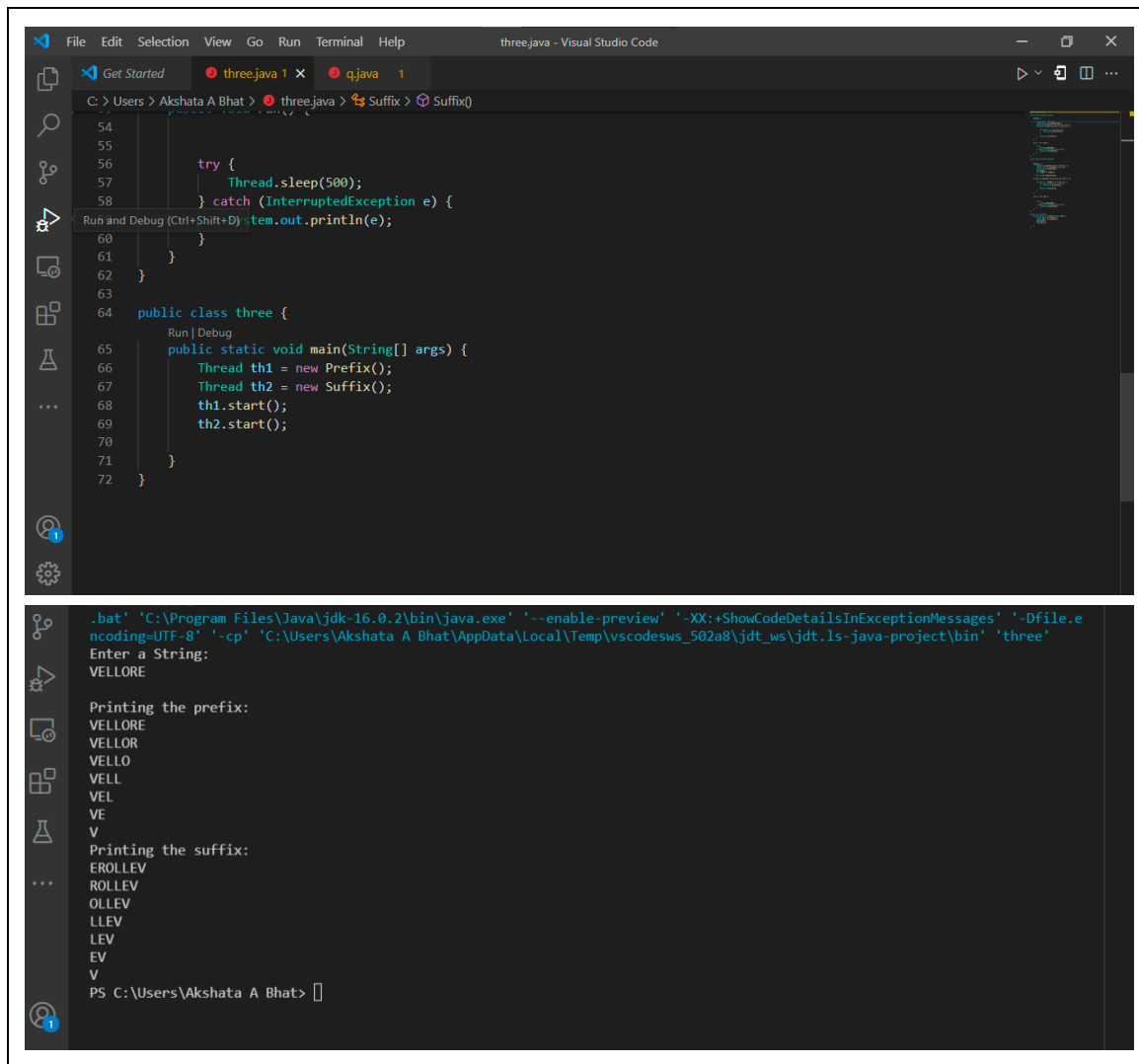
```
}  
}
```



```
File Edit Selection View Go Run Terminal Help three.java - Visual Studio Code  
Get Started three.java 1 x qjava 1  
C:\> Users > Akshata A Bhat > three.java > Suffix > Suffix()  
1 import java.util.*;  
2  
3 class Suffix extends Thread {  
4  
5     Suffix() {}  
6  
7     String str = "VELLORE";  
8     char[] chr = str.toCharArray();  
9     System.out.println("Printing the suffix:");  
10    for (int i = chr.length-1; i >= 0; i--) {  
11  
12        for (int k = i; k >= 0; k--) {  
13            System.out.print(chr[k]);  
14        }  
15  
16        System.out.println();  
17    }  
18 }  
19  
20 public void run() {  
21  
22    try {  
23        Thread.sleep(500);  
24    } catch (InterruptedException e) {  
25        System.out.println(e);  
26    }  
27 }
```



```
File Edit Selection View Go Run Terminal Help three.java - Visual Studio Code  
Get Started three.java 1 x qjava 1  
C:\> Users > Akshata A Bhat > three.java > Suffix > Suffix()  
30 class Prefix extends Thread {  
31  
32  
33     Prefix() {  
34         System.out.println("Enter a String: ");  
35         Scanner sc = new Scanner(System.in);  
36         String s = sc.nextLine();  
37         sc.close();  
38         int length= s.length();  
39  
40         char [] a=s.toCharArray();  
41  
42         System.out.println("\nPrinting the prefix: ");  
43  
44         for (int i = length-1; i >= 0; i--) {  
45             for (int j = 0; j <= i; j++) {  
46                 System.out.print(a[j]);  
47             }  
48             System.out.println();  
49         }  
50  
51     }  
52  
53     public void run() {  
54  
55 }
```



The screenshot shows the Visual Studio Code editor with a Java file named `three.java`. The code defines a `Prefix` class and a `Suffix` class, both extending `Thread`. The `Prefix` class prints the prefix of a string by removing the last character, and the `Suffix` class prints the suffix by removing the first character. The `main` method creates instances of both threads and starts them. The terminal output shows the execution of the program, where the prefix and suffix of the string "VELLORE" are printed.

```
54  
55  
56  
57     try {  
58         Thread.sleep(500);  
59     } catch (InterruptedException e) {  
60         System.out.println(e);  
61     }  
62 }  
63  
64 public class three {  
65     public static void main(String[] args) {  
66         Thread th1 = new Prefix();  
67         Thread th2 = new Suffix();  
68         th1.start();  
69         th2.start();  
70     }  
71 }  
72 }
```

```
.bat' 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\Akshata A Bhat\AppData\Local\Temp\vscodesws_502a8\jdt_ws\jdt.ls-java-project\bin' 'three'  
Enter a String:  
VELLORE  
  
Printing the prefix:  
VELLORE  
VELLOR  
VELLO  
VELL  
VEL  
VE  
V  
Printing the suffix:  
EROLLEV  
ROLLEV  
OLLEV  
LLEV  
LEV  
EV  
V  
PS C:\Users\Akshata A Bhat>
```

2. Create two threads (of normal priorities): one to read a string and returns the length of it and other one to display the ascii values of English alphabet (A-Z)

```
import java.util.*;  
  
class Length extends Thread {  
  
    Length() {  
  
        String str;  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter the string");  

```

```

        str = sc.nextLine();

        int n = str.length();
        System.out.println("Length of the input string = " + n);
        sc.close();
    }

    public void run() {

        try {
            Thread.sleep(500);
        } catch (InterruptedException e) {
            System.out.println(e);
        }
    }
}

class Ascii extends Thread {
    int x, y;

    Ascii() {
        int i;
        for(i = 0; i < 26; i++){
            System.out.println((char) ('A'+i) + " --> " +
('A'+i));

        }

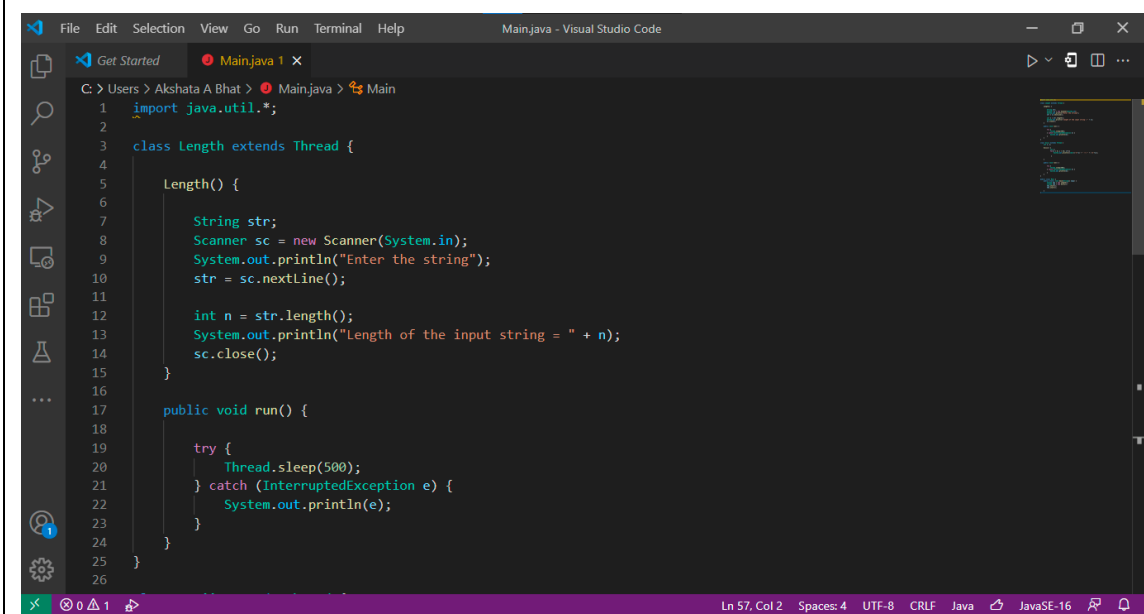
    }

    public void run() {

        try {
            Thread.sleep(500);
        } catch (InterruptedException e) {
            System.out.println(e);
        }
    }
}

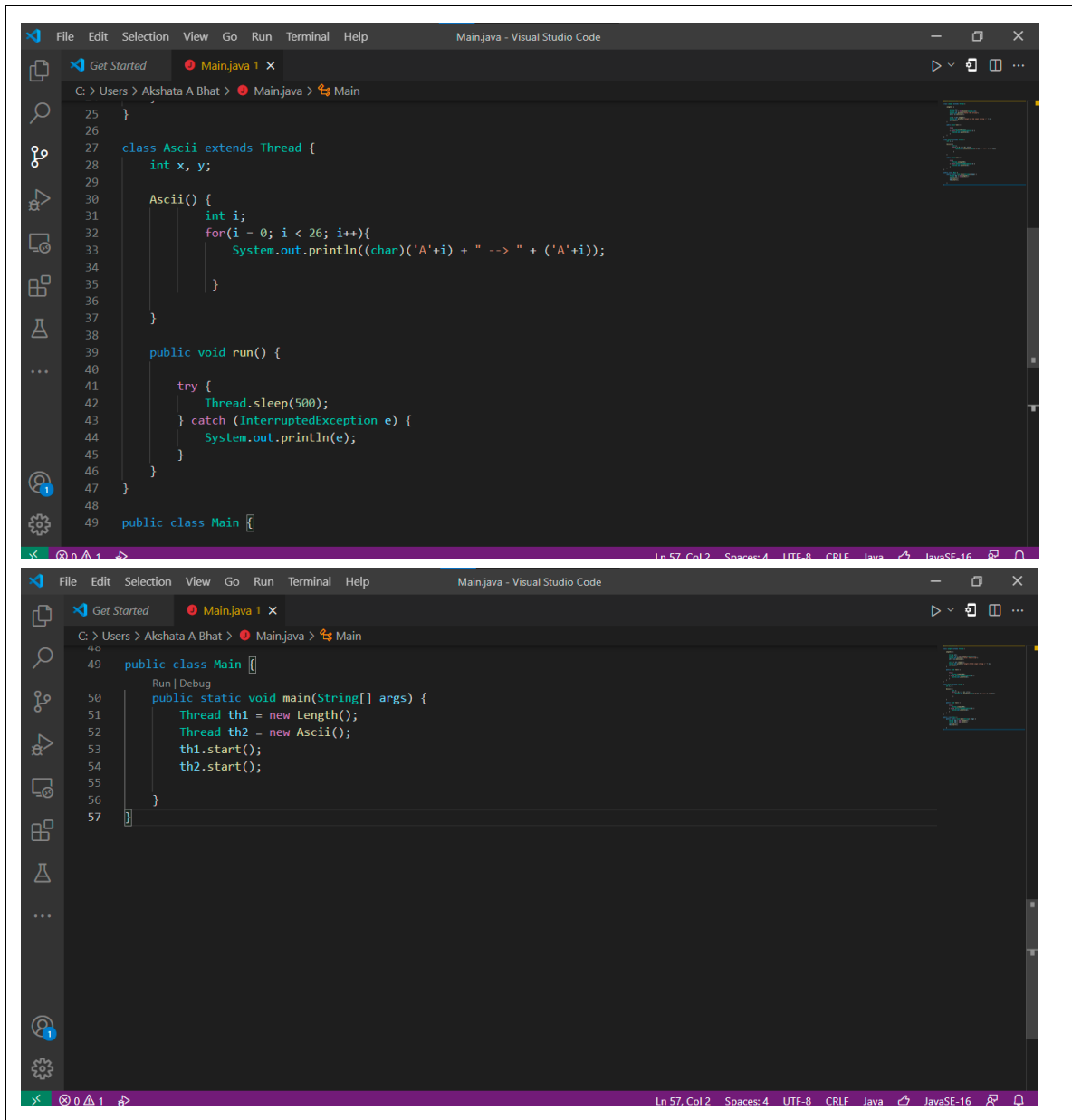
```

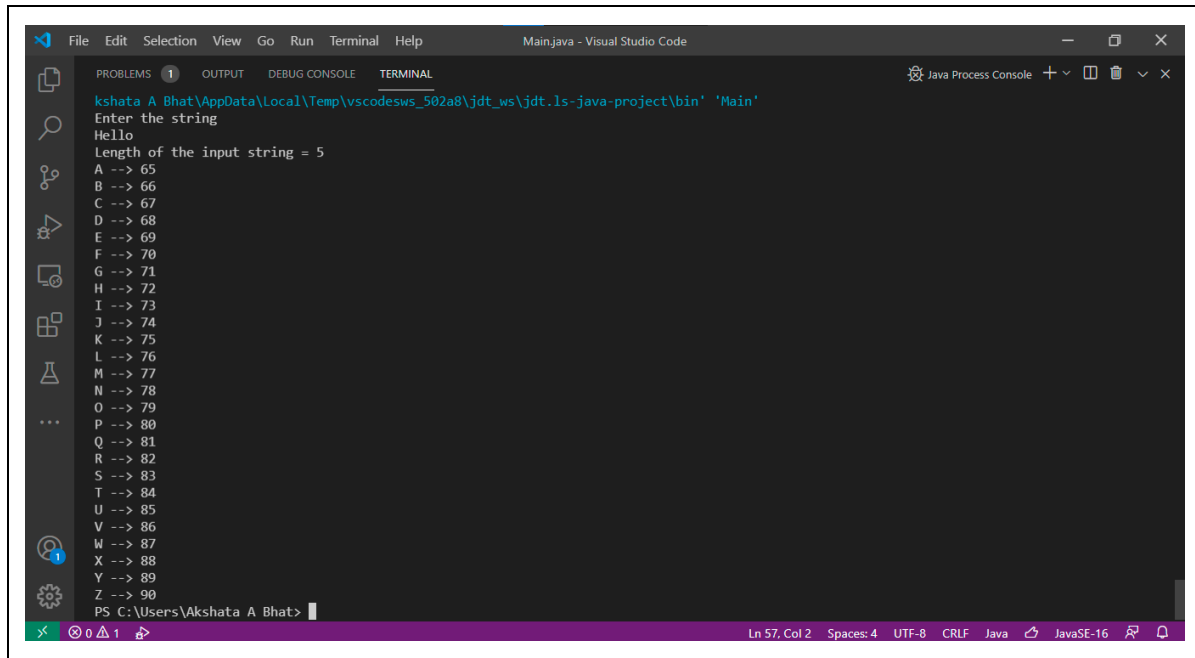
```
public class Main {  
    public static void main(String[] args) {  
        Thread th1 = new Length();  
        Thread th2 = new Ascii();  
        th1.start();  
        th2.start();  
    }  
}
```



The screenshot shows the Visual Studio Code editor with a file named 'Main.java' open. The code defines a 'Length' class that extends 'Thread'. The 'Length' class has a constructor 'Length()' and a 'run()' method. The constructor initializes a 'String str', a 'Scanner sc', and prompts the user to enter a string. The 'run()' method calls 'Thread.sleep(500)', catches an 'InterruptedException', and prints the exception message. The status bar at the bottom indicates the current line is 57, column 2, with 4 spaces, using UTF-8 encoding and CRLF line endings, with the Java language and JavaSE-16 runtime selected.

```
File Edit Selection View Go Run Terminal Help Main.java - Visual Studio Code  
Get Started Main.java x  
C:\Users\Akshata A Bhat > Main.java > Main  
1 import java.util.*;  
2  
3 class Length extends Thread {  
4  
5     Length() {  
6  
7         String str;  
8         Scanner sc = new Scanner(System.in);  
9         System.out.println("Enter the string");  
10        str = sc.nextLine();  
11  
12        int n = str.length();  
13        System.out.println("Length of the input string = " + n);  
14        sc.close();  
15    }  
16  
17    public void run() {  
18  
19        try {  
20            Thread.sleep(500);  
21        } catch (InterruptedException e) {  
22            System.out.println(e);  
23        }  
24    }  
25  
26  
Ln 57, Col 2 Spaces: 4 UTF-8 CRLF Java JavaSE-16
```





```
File Edit Selection View Go Run Terminal Help Main.java - Visual Studio Code
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL
kshata A Bhat\AppData\Local\Temp\vscodesws_502a8\jdt_ws\jdt.ls-java-project\bin' 'Main'
Enter the string
Hello
Length of the input string = 5
A --> 65
B --> 66
C --> 67
D --> 68
E --> 69
F --> 70
G --> 71
H --> 72
I --> 73
J --> 74
K --> 75
L --> 76
M --> 77
N --> 78
O --> 79
P --> 80
Q --> 81
R --> 82
S --> 83
T --> 84
U --> 85
V --> 86
W --> 87
X --> 88
Y --> 89
Z --> 90
PS C:\Users\Akshata A Bhat>
```

Ln 57, Col 2 Spaces: 4 UTF-8 CRLF Java JavaSE-16