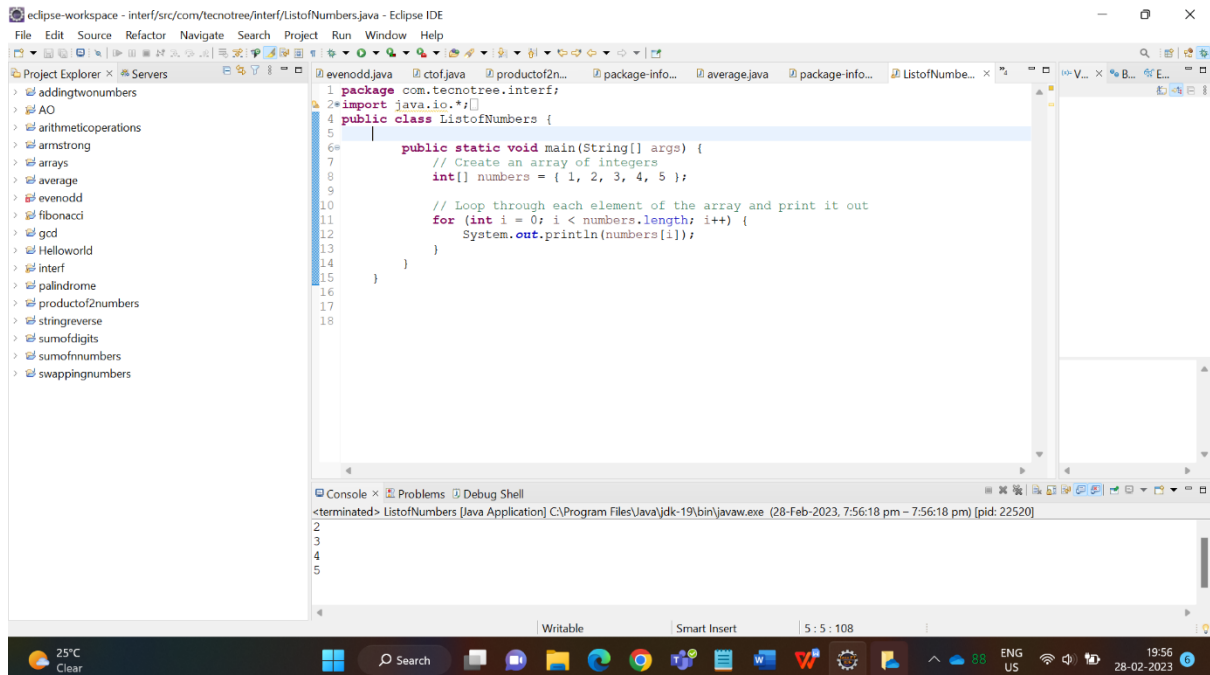


Java Assignment-4

Topic: Arrays and String functions

1. Create an array of integers and use a for loop to print out each element of the array.



The screenshot shows the Eclipse IDE with a Java project named 'com.tecnotee.interf'. The main class is 'ListofNumbers'. The code in the 'main' method creates an array of integers named 'numbers' with values {1, 2, 3, 4, 5}. It then uses a for loop to iterate through the array and print each element using 'System.out.println(numbers[i]);'. The console output shows the numbers 1, 2, 3, 4, and 5 printed on separate lines.

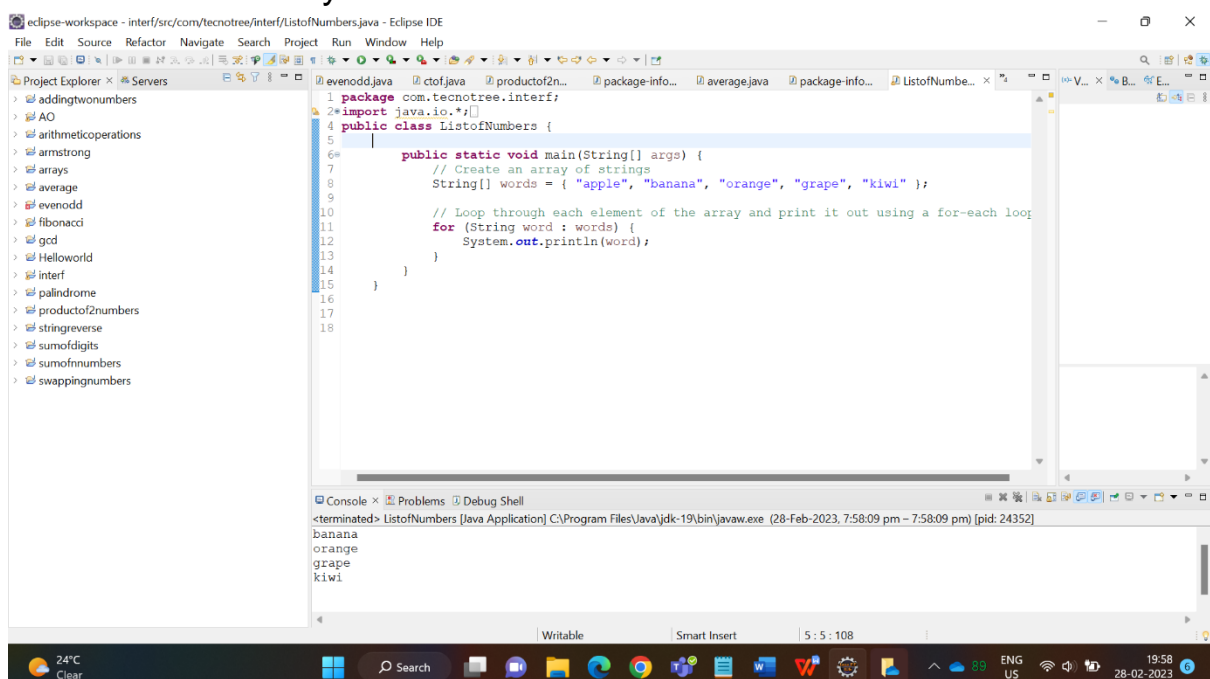
```
1 package com.tecnotee.interf;
2 import java.io.*;
3
4 public class ListofNumbers {
5
6     public static void main(String[] args) {
7         // Create an array of integers
8         int[] numbers = { 1, 2, 3, 4, 5 };
9
10        // Loop through each element of the array and print it out
11        for (int i = 0; i < numbers.length; i++) {
12            System.out.println(numbers[i]);
13        }
14    }
15 }
16
17
18
```

Console Output:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 7:56:18 pm - 7:56:18 pm) [pid: 22520]
1
2
3
4
5
```

CODESHARE LINK: <https://codeshare.io/dwQxJD>

2. Create an array of strings and use a for-each loop to print out each element of the array.



The screenshot shows the Eclipse IDE with the same Java project. The main class is 'ListofNumbers'. The code in the 'main' method creates an array of strings named 'words' with values {"apple", "banana", "orange", "grape", "kiwi"}. It then uses a for-each loop to iterate through the array and print each element using 'System.out.println(word);'. The console output shows the words 'banana', 'orange', 'grape', and 'kiwi' printed on separate lines.

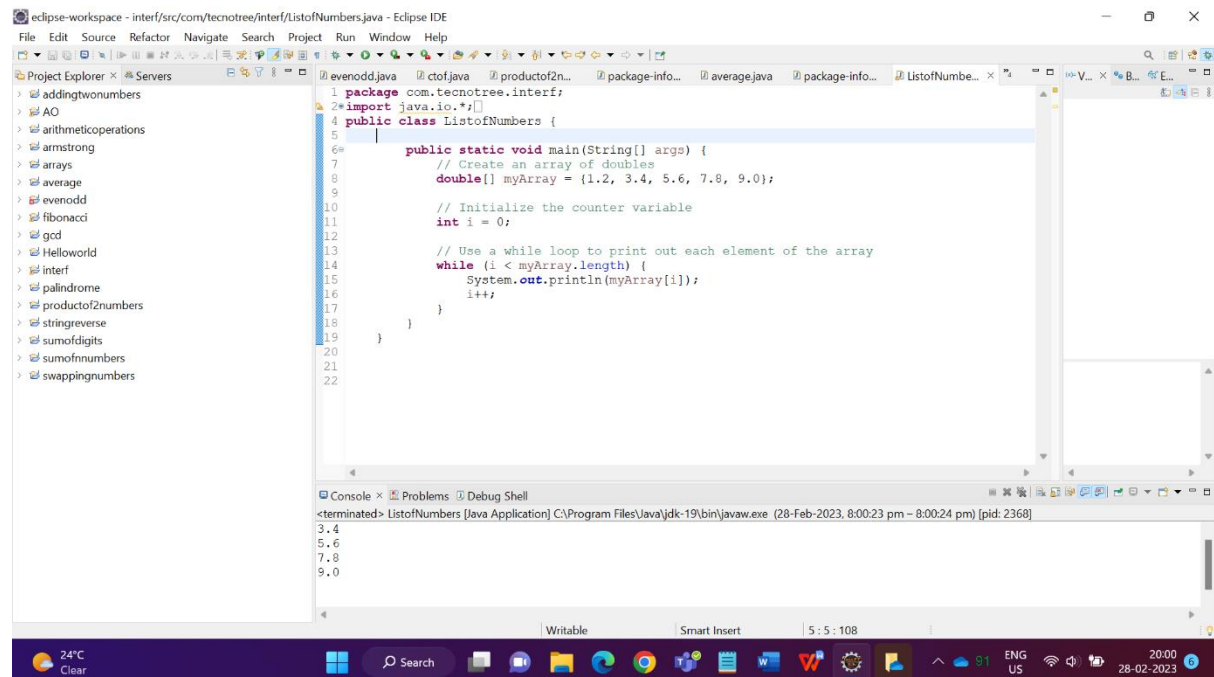
```
1 package com.tecnotee.interf;
2 import java.io.*;
3
4 public class ListofNumbers {
5
6     public static void main(String[] args) {
7         // Create an array of strings
8         String[] words = { "apple", "banana", "orange", "grape", "kiwi" };
9
10        // Loop through each element of the array and print it out using a for-each loop
11        for (String word : words) {
12            System.out.println(word);
13        }
14    }
15 }
16
17
18
```

Console Output:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 7:58:09 pm - 7:58:09 pm) [pid: 24352]
banana
orange
grape
kiwi
```

CODESHARE LINK: <https://codeshare.io/RbvZVE>

3. Create an array of doubles and use a while loop to print out each element of the array.



The screenshot shows the Eclipse IDE with a Java project named 'interf'. The 'Project Explorer' on the left lists various Java programs. The main editor displays the file 'ListofNumbers.java' with the following code:

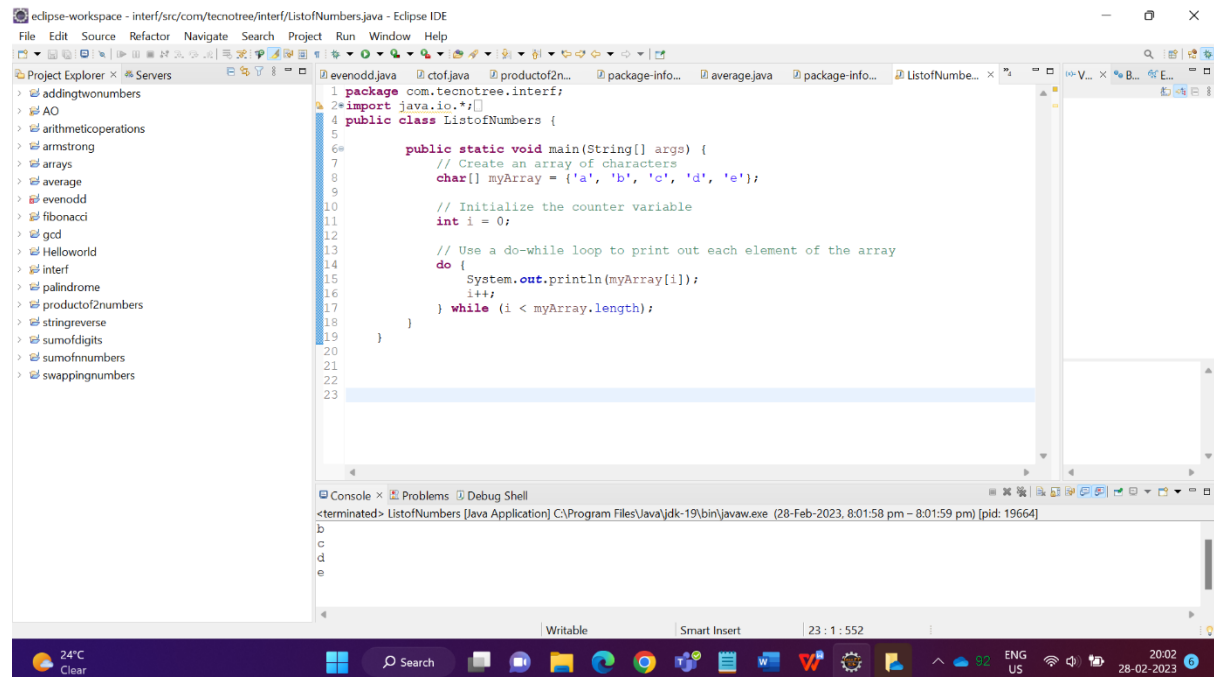
```
1 package com.tecnotree.interf;
2 import java.io.*;
3
4 public class ListofNumbers {
5
6     public static void main(String[] args) {
7         // Create an array of doubles
8         double[] myArray = {1.2, 3.4, 5.6, 7.8, 9.0};
9
10        // Initialize the counter variable
11        int i = 0;
12
13        // Use a while loop to print out each element of the array
14        while (i < myArray.length) {
15            System.out.println(myArray[i]);
16            i++;
17        }
18    }
19 }
20
21
22
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:00:23 pm - 8:00:24 pm) [pid: 2368]
3.4
5.6
7.8
9.0
```

CODESHARE LINK: <https://codeshare.io/N3pbRV>

4. Create an array of characters and use a do-while loop to print out each element of the array.



The screenshot shows the Eclipse IDE with the same Java project. The main editor displays the file 'ListofNumbers.java' with the following code:

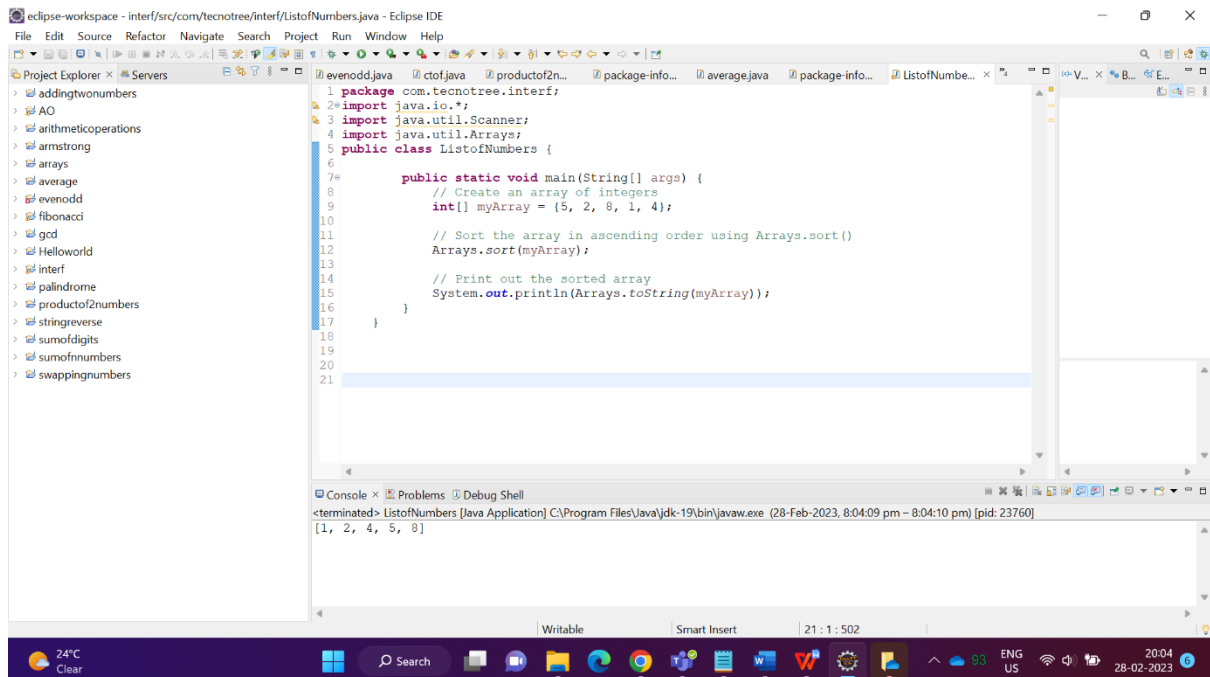
```
1 package com.tecnotree.interf;
2 import java.io.*;
3
4 public class ListofNumbers {
5
6     public static void main(String[] args) {
7         // Create an array of characters
8         char[] myArray = {'a', 'b', 'c', 'd', 'e'};
9
10        // Initialize the counter variable
11        int i = 0;
12
13        // Use a do-while loop to print out each element of the array
14        do {
15            System.out.println(myArray[i]);
16            i++;
17        } while (i < myArray.length);
18    }
19 }
20
21
22
23
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:01:58 pm - 8:01:59 pm) [pid: 19664]
b
c
d
e
```

CODESHARE LINK: <https://codeshare.io/VZE4R8>

5. Create an array of integers and use the Arrays class method sort() to sort the array in ascending order.



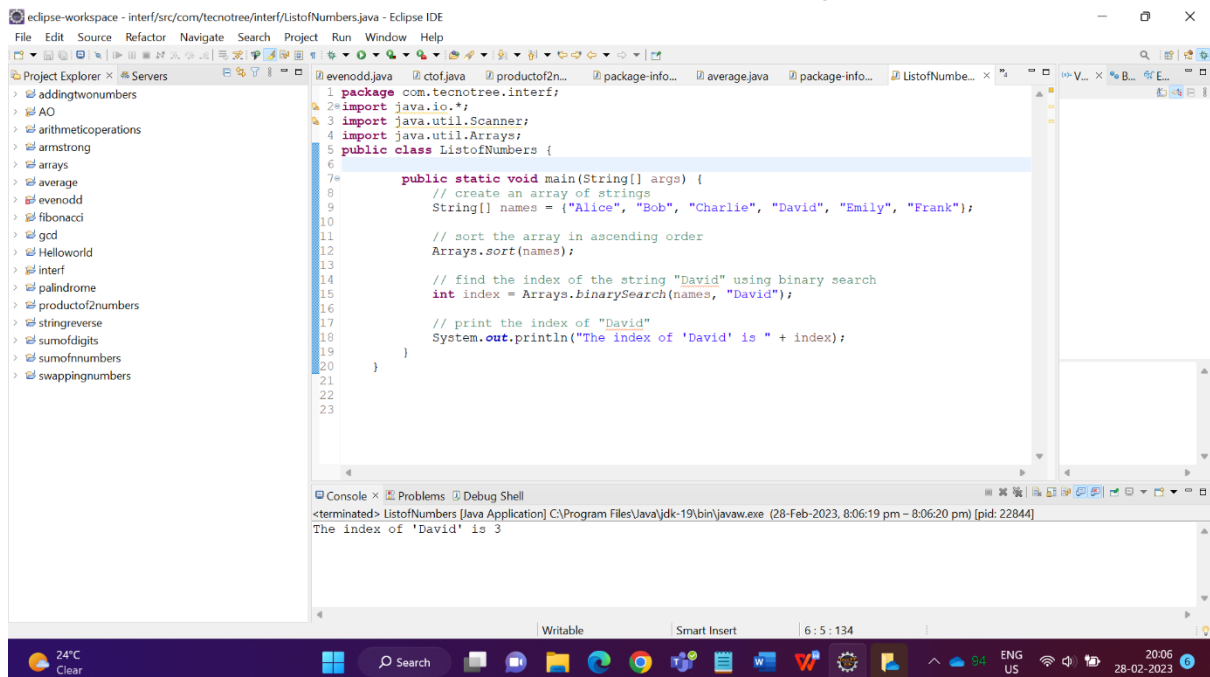
The screenshot shows the Eclipse IDE with a Java project named 'interf'. The 'Project Explorer' on the left lists various Java files, including 'arrays'. The main editor displays the code for 'ListofNumbers.java'. The code imports 'java.io.*', 'java.util.Scanner', and 'java.util.Arrays'. It defines a public class 'ListofNumbers' with a 'main' method. In the 'main' method, an integer array 'myArray' is created with values {5, 2, 8, 1, 4}. The 'Arrays.sort()' method is used to sort the array in ascending order. Finally, the sorted array is printed using 'System.out.println(Arrays.toString(myArray))'. The console at the bottom shows the output: '[1, 2, 4, 5, 8]'.

```
1 package com.tecnotee.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         // Create an array of integers
9         int[] myArray = {5, 2, 8, 1, 4};
10
11         // Sort the array in ascending order using Arrays.sort()
12         Arrays.sort(myArray);
13
14         // Print out the sorted array
15         System.out.println(Arrays.toString(myArray));
16     }
17 }
18
19
20
21
```

Console: <terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:04:09 pm - 8:04:10 pm) [pid: 23760]
[1, 2, 4, 5, 8]

CODESHARE LINK: <https://codeshare.io/YLE4EL>

6. Create an array of strings and use the Arrays class method binarySearch() to find the index of a specific string in the array.



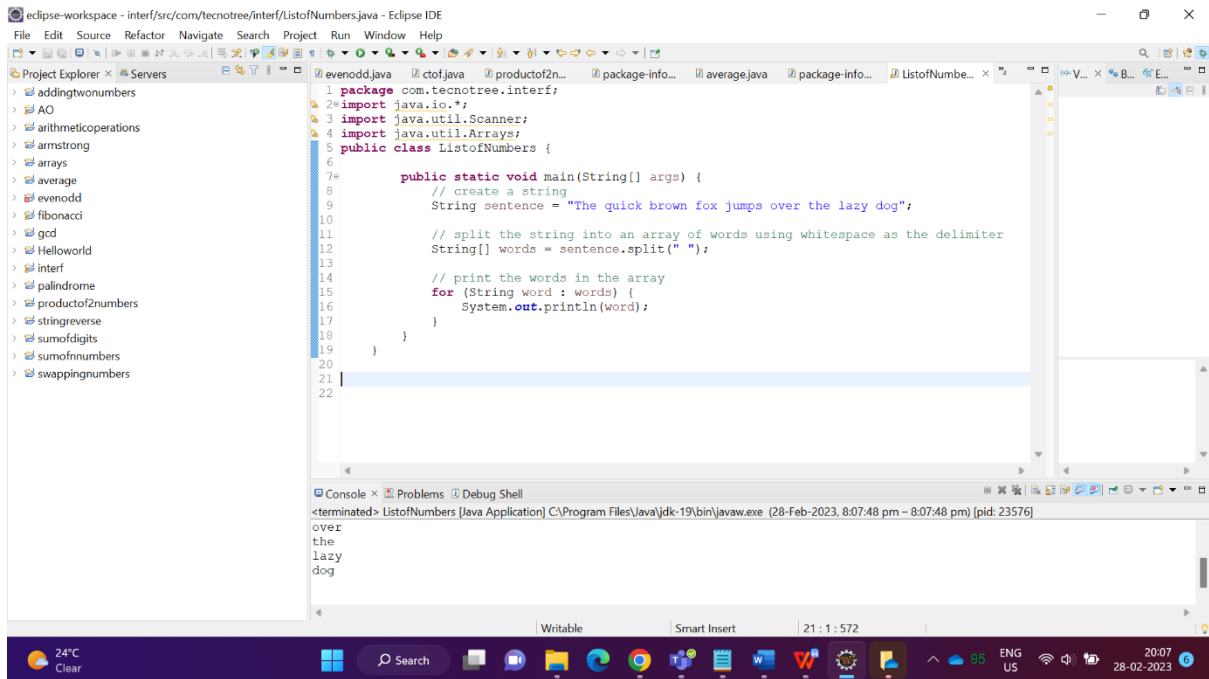
The screenshot shows the Eclipse IDE with the same Java project. The main editor displays the code for 'ListofNumbers.java'. The code imports 'java.io.*', 'java.util.Scanner', and 'java.util.Arrays'. It defines a public class 'ListofNumbers' with a 'main' method. In the 'main' method, a string array 'names' is created with values {"Alice", "Bob", "Charlie", "David", "Emily", "Frank"}. The 'Arrays.sort()' method is used to sort the array in ascending order. Then, the 'Arrays.binarySearch()' method is used to find the index of the string "David". Finally, the index is printed using 'System.out.println("The index of 'David' is " + index)'. The console at the bottom shows the output: 'The index of 'David' is 3'.

```
1 package com.tecnotee.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         // create an array of strings
9         String[] names = {"Alice", "Bob", "Charlie", "David", "Emily", "Frank"};
10
11         // sort the array in ascending order
12         Arrays.sort(names);
13
14         // find the index of the string "David" using binary search
15         int index = Arrays.binarySearch(names, "David");
16
17         // print the index of "David"
18         System.out.println("The index of 'David' is " + index);
19     }
20 }
21
22
23
```

Console: <terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:06:19 pm - 8:06:20 pm) [pid: 22844]
The index of 'David' is 3

CODESHARE LINK: <https://codeshare.io/dwQxQR>

7. Create a string and use the String class method split() to split the string into an array of substrings.



The screenshot shows the Eclipse IDE with a project named 'interf'. The 'Project Explorer' on the left lists various Java files. The main editor displays 'ListofNumbers.java' with the following code:

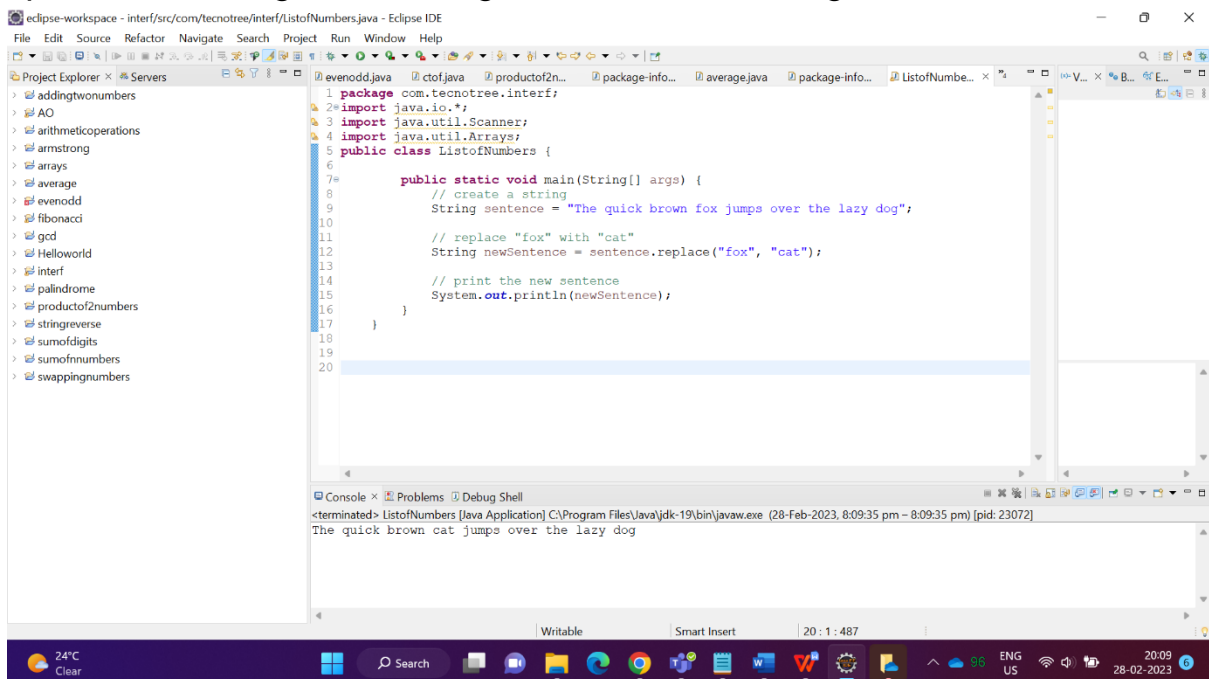
```
1 package com.tecnotree.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         // create a string
9         String sentence = "The quick brown fox jumps over the lazy dog";
10
11         // split the string into an array of words using whitespace as the delimiter
12         String[] words = sentence.split(" ");
13
14         // print the words in the array
15         for (String word : words) {
16             System.out.println(word);
17         }
18     }
19 }
20
21
22
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:07:48 pm - 8:07:48 pm) [pid: 23576]
over
the
lazy
dog
```

CODESHARE LINK: <https://codeshare.io/yo0Y0I>

8.Create a string and use the String class method replace() to replace a specific substring in the string with a new substring.



The screenshot shows the Eclipse IDE with the same project. The main editor displays 'ListofNumbers.java' with the following code:

```
1 package com.tecnotree.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         // create a string
9         String sentence = "The quick brown fox jumps over the lazy dog";
10
11         // replace "fox" with "cat"
12         String newSentence = sentence.replace("fox", "cat");
13
14         // print the new sentence
15         System.out.println(newSentence);
16     }
17 }
18
19
20
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:09:35 pm - 8:09:35 pm) [pid: 23072]
The quick brown cat jumps over the lazy dog
```

CODESHARE LINK: <https://codeshare.io/DZEzxZ>

9.Create a string and use the String class method substring() to extract a portion of the string.

The screenshot shows the Eclipse IDE with a Java project named 'interf'. The 'Project Explorer' on the left lists various Java programs. The main editor displays the file 'ListofNumbers.java' with the following code:

```
1 package com.tecnotree.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         String str = "Hello World!";
9
10        // Extract a portion of the string using the substring() method
11        String substring = str.substring(6, 11);
12
13        // Print the original string and the extracted substring
14        System.out.println("Original String: " + str);
15        System.out.println("Substring: " + substring);
16    }
17 }
18
19
20
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:11:48 pm - 8:11:49 pm) [pid: 21172]
Original String: Hello World!
Substring: World
```

CODESHARE LINK: <https://codeshare.io/pqkxZY>

10. Create a string and use the String class method length() to find the length of the string.

The screenshot shows the Eclipse IDE with the same Java project. The main editor displays the file 'ListofNumbers.java' with the following code:

```
1 package com.tecnotree.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 public class ListofNumbers {
6
7     public static void main(String[] args) {
8         String str = "Hello, world!";
9
10        // Find the length of the string using the length() method
11        int length = str.length();
12
13        // Print the length of the string to the console
14        System.out.println("Length of string: " + length);
15    }
16 }
17
18
19
20
```

The 'Console' at the bottom shows the output of the program:

```
<terminated> ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:13:20 pm - 8:13:21 pm) [pid: 14768]
Length of string: 13
```

CODESHARE LINK: <https://codeshare.io/bvOREO>