

Java Assignment – 4

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

<https://codeshare.io/VZE4rz>

The screenshot shows a Java IDE interface. The code editor window displays the following Java code:

```
arrayofint.java
Step Into package assignment4;
1
2
3 public class arrayofint {
4
5•     public static void main(String[] args) {
6
7             int[] myArray = {1, 2, 3, 4, 5};
8             for (int i = 0; i < myArray.length; i++) {
9                 System.out.println("Element " + i + ": " + myArray[i]);
10            }
11        }
12    }
13
```

The console window below shows the output of the program:

```
Console × Problems × Debug Shell
<terminated> arrayofint [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 9:24:28 pm – 9:24:28 pm) [pid: 3504]
Element 0: 1
Element 1: 2
Element 2: 3
Element 3: 4
Element 4: 5
```

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

<https://codeshare.io/WdE47d>

The screenshot shows a Java IDE interface. The code editor window displays the following Java code:

```
arraytostr.java
1 package assignment4;
2
3 public class arraytostr {
4
5•     public static void main(String[] args) {
6
7             String[] myArray = {"Vishwas", "Sanjana", "Rohan", "Rachana", "Hema"};
8             for (String s : myArray) {
9                 System.out.println(s);
10            }
11        }
12    }
13
```

The console window below shows the output of the program:

```
Console × Problems × Debug Shell
<terminated> arraytostr [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 9:29:26 pm – 9:29:27 pm) [pid: 21024]
Vishwas
Sanjana
Rohan
Rachana
Hema
```

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

<https://codeshare.io/eV6xQx>

The screenshot shows a Java code editor with the file 'arraytodouble.java'. The code defines a class 'arraytodouble' with a main method that prints five double values (1.2, 2.5, 3.8, 4.6, 5.3) to the console using a while loop. Below the editor is a terminal window titled 'Console' showing the execution of the program and its output.

```
arraytodouble.java
1 package assignment4;
2
3 public class arraytodouble {
4
5     public static void main(String[] args) {
6
7         double[] numbers = { 1.2, 2.5, 3.8, 4.6, 5.3 };
8         int i = 0;
9
10        while (i < numbers.length) {
11            System.out.println(numbers[i]);
12            i++;
13        }
14    }
15
16
17
```

Console

```
<terminated> arraytodouble [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 9:38:08 pm - 9:38:08 pm) [pid: 1056]
1.2
2.5
3.8
4.6
5.3
```

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

<https://codeshare.io/zyAY0W>

The screenshot shows a Java code editor with the file 'arrayofchar.java'. The code defines a class 'arrayofchar' with a main method that prints five character values ('a', 'b', 'c', 'd', 'e') to the console using a do-while loop. Below the editor is a terminal window titled 'Console' showing the execution of the program and its output.

```
arrayofchar.java
1 package assignment4;
2
3 public class arrayofchar {
4
5     public static void main(String[] args) {
6
7         // create an array of characters
8         char[] charArray = {'a', 'b', 'c', 'd', 'e'};
9
10        // print out each element of the array using a do-while loop
11        int i = 0;
12        do {
13            System.out.println(charArray[i]);
14            i++;
15        } while (i < charArray.length);
16    }
17
18
19 }
```

Console

```
<terminated> arrayofchar [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 9:51:54 pm - 9:51:54 pm) [pid: 12728]
a
b
c
d
e
```

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

<https://codeshare.io/LwE8mk>

The screenshot shows a Java development environment. In the top panel, there is a code editor with a file named "sortmethod.java". The code creates an integer array [5, 3, 9, 1, 7], sorts it using Arrays.sort(), and prints the sorted array [1, 3, 5, 7, 9]. Below the code editor is a terminal window titled "Console" which displays the output of the program: [1, 3, 5, 7, 9].

```
sortmethod.java
1 package assignment4;
2 import java.util.Arrays;
3
4 public class sortmethod {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8
9
10        // create an array of integers
11        int[] intArray = {5, 3, 9, 1, 7};
12
13        // sort the array in ascending order using Arrays.sort()
14        Arrays.sort(intArray);
15
16        // print out the sorted array
17        System.out.println(Arrays.toString(intArray));
18    }
19 }
20
21
```

Console x Problems Debug Shell
<terminated> sortmethod [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 9:54:35 pm – 9:54:36 pm) [pid: 1356]
[1, 3, 5, 7, 9]

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

<https://codeshare.io/LwE8mk>

The screenshot shows a Java development environment with two tabs open: "sortmethod.java" and "binarysearch.java". The "binarysearch.java" tab is active and contains code that creates a string array ["Vishwas", "Rachana", "Sanjana", "Hema", "Rohan"], sorts it, and then uses Arrays.binarySearch() to find the index of "Sanjana". The terminal window below shows the output: "Index of Sanjana in the array: 3".

```
sortmethod.java binarysearch.java
1 import java.util.Arrays;
2
3 public class binarysearch {
4
5     public static void main(String[] args) {
6         // TODO Auto-generated method stub
7
8
9        // create an array of strings
10       String[] stringArray = {"Vishwas", "Rachana", "Sanjana", "Hema", "Rohan"};
11
12       // sort the array in ascending order using Arrays.sort()
13       Arrays.sort(stringArray);
14
15       // use binarySearch() to find the index of "date" in the array
16       int index = Arrays.binarySearch(stringArray, "Sanjana");
17
18       // print out the index of "date" in the array
19       System.out.println("Index of "+stringArray[0]+ " in the array: " + index);
20
21    }
22 }
```

Console x Problems Debug Shell
<terminated> binarysearch [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 10:00:20 pm – 10:00:21 pm) [pid: 8696]
Index of Sanjana in the array: 3

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

<https://codeshare.io/j0dxK3>

The screenshot shows a Java development environment with multiple tabs at the top: 'sortmethod.java', 'binarysearch.java', 'split.java', and 'Console'. The 'split.java' tab is active, displaying the following code:

```
1 package assignment4;
2
3 public class split {
4
5     public static void main(String[] args) {
6
7         // create a string
8         String myString = "This is a sample string.";
9
10        // split the string into an array of substrings using split()
11        String[] stringArray = myString.split(" ");
12
13        // print out the array of substrings
14        for (String s : stringArray) {
15            System.out.println(s);
16        }
17    }
18
19
20 }
```

The 'Console' tab shows the output of the program:

```
This
is
a
sample
string.
```

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

<https://codeshare.io/4eo4Z7>

The screenshot shows a Java development environment with multiple tabs at the top: 'sortmethod.java', 'binarysearch.java', 'split.java', and 'replace.java'. The 'replace.java' tab is active, displaying the following code:

```
1 package assignment4;
2
3 public class replace {
4
5     public static void main(String[] args) {
6
7         // create a string
8         String myString = "The quick brown fox jumps over the lazy dog.";
9
10        // replace the substring "fox" with "cat" using replace()
11        String newXString = myString.replace("fox", "cat");
12
13        // print out the new string
14        System.out.println(newXString);
15    }
16
17 }
```

The 'Console' tab shows the output of the program:

```
The quick brown cat jumps over the lazy dog.
```

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

<https://codeshare.io/DZEzer>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'substring.java' with the following content:

```
1 package assignment4;
2
3 public class substring {
4
5     public static void main(String[] args) {
6
7         // create a string
8         String myString = "Hello, World!";
9
10        // extract the substring "World" using substring()
11        String substring = myString.substring(7, 12);
12
13        // print out the substring
14        System.out.println(substring);
15    }
16}
17
18
```

The terminal window below the code editor shows the output of the program:

```
<terminated> substring (1) [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 10:13:01 pm – 10:13:02 pm) [pid: 11920]
World
```

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

<https://codeshare.io/PdE3rP>

The screenshot shows an IDE interface with a code editor and a terminal window. The code editor contains a Java file named 'length.java' with the following content:

```
1 package assignment4;
2
3 public class length {
4
5     public static void main(String[] args) {
6
7         // create a string
8         String myString = "Hello, World!";
9
10        // find the length of the string using length()
11        int length = myString.length();
12
13        // print out the length of the string
14        System.out.println(length);
15    }
16}
17
18
```

The terminal window below the code editor shows the output of the program:

```
<terminated> length [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 10:15:29 pm – 10:15:29 pm) [pid: 8420]
13
```