Assignment-10 Questions

1. What is the default value of array for different data types?

Ans: - The default value of an array depends on the data type of the elements stored in the array. In Java, the default values for arrays of different data types are as follows:

For byte, short, int, and long arrays, the default value is 0.
For float and double arrays, the default value is 0.0.
For char arrays, the default value is '\u0000'.
For Boolean arrays, the default value is false.
For reference type arrays (e.g., String, Object, etc.), the default value is null.

2. Can you pass the negative number in array size?

Ans: - No, you cannot pass a negative number as the size of an array in Java. The size of an array must be a non-negative integer. If you try to create an array with a negative size, it will result in a runtime error.

3. Where does array stored in JVM memory?

Ans: - In Java, arrays are stored in the heap memory. The heap memory is a portion of the JVM memory that is used to store objects, including arrays. When you create an array, Java allocates a contiguous block of memory in the heap to store the elements of the array. The size of this block of memory is equal to the size of the array, and it is determined by the length of the array that you specified when creating the array. The elements of the array are stored in this block of memory in contiguous memory locations.

4. What are the disadvantages of array?

Ans: - Arrays have several disadvantages:

- Fixed size: Once an array is created, its size cannot be changed. If you need to store more elements, you must create a new, larger array and copy the elements from the old array to the new array. This can be time-consuming and inefficient.
- Limited data types: Arrays can only store elements of a single data type. If you need to store elements of different data types, you have to use an array of objects, which can be more complex and less efficient.
- Inefficient for inserting or deleting elements: Inserting or deleting an element in the middle of an array can be slow and inefficient because you have to shift all the elements after the insertion or deletion point.
- Complex indexing: Accessing elements in an array requires you to use an index, which can be complex and error-prone, especially if you're working with large arrays.

NAME :- RISHABH AGRAWAL
MBNO:- 9420155354
EMAIL:- agrawaltraders.rishabh@gmail.com

- No built-in search or sorting methods: Arrays do not have any built-in search or sorting methods. If you need to search for an element or sort the elements of an array, you have to write your own code or use a library.

These disadvantages can be overcome by using other data structures, such as linked lists, trees, or hash tables, that are more suited to specific tasks.

5. What is an anonymous array in java? give an example?

Ans: - An anonymous array is an array that is declared and instantiated at the same time, without giving it a name. This type of array is useful when you need to use an array only once and don't need to refer to it again later in your code.

example:

```
public class Main {
  public static void main(String[] args) {
    // Anonymous array
    sum(new int[] { 1, 2, 3 });
  }
  public static void sum(int[] numbers) {
    int total = 0;
    for (int i : numbers) {
      total += i;
    }
    System.out.println("Sum is: " + total);
  }
}
```

In the above example, an anonymous array of integers is created and passed as an argument to the sum method. The array is not given a name, so it is referred to only once in the program.

NAME :- RISHABH AGRAWAL
MBNO:- 9420155354
EMAIL:- agrawaltraders.rishabh@gmail.com

6. What are the different ways to traverse an array in java?

Ans: - There are several ways to traverse an array in Java:

- For loop: This is the most common and simple way to traverse an array. A for loop can be used to iterate over the elements of an array by using an index to access each element in the array.
- For-each loop: This type of loop is also known as the enhanced for loop and is used to traverse arrays and other collections in Java. It provides a simpler way to access each element in an array without having to use an index.
- While loop: A while loop can also be used to traverse an array. The while loop continues to loop as long as the condition is true.
- Iterator: An iterator can be used to traverse an array by calling its next method until there are no more elements to iterate over.

7. What is the difference between length and length () method give an examples?

Ans: - length and length () are two different concepts in Java.

- length is a property of an array in Java and is used to determine the number of elements in the array. The length property is a field that is automatically generated by the Java compiler and is accessed using the dot (.) operator.

For example:

```
int[] numbers = {1, 2, 3, 4, 5};

int arrayLength = numbers.length;

System.out.println("Array length is: " + arrayLength);
```

- length () is a method in Java and is used to determine the length of a string. The length () method is a member function of the String class and returns the number of characters in a string.

For example:

```
String str = "Hello World";

int stringLength = str.length();

System.out.println("String length is: " + stringLength);
```

So, the main difference between length and length () is that length is a property of an array, while length () is a method of a string. The length property is used to determine the number of elements in an array, while the length () method is used to determine the number of characters in a string.

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MBNO:- 9420155354
EMAIL:- agrawaltraders.rishabh@gmail.com