Arrays in Java

Assignment

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

Ans 1. In Java, the default values of an array for different data types are ➖

- For numeric types(int, double, float, etc.) is 0.
- For boolean type it is false.
- For char type:'\u0000'(null character)
- For reference types (objects): null

Keep in mind that these default values are assigned to array elements if the array is initialized but not explicitly populated with values.

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

Ans 2. In most programming languages, the size of an array cannot be a negative number. Array sizes must be non-negative integers, as a negative size would not make sense since it represents the number of elements the array can hold. If you try to use a negative number as the array size, it would result in an error.

3. Where does array stored in JVM memory?

Ans 3. In JVM memory, arrays are stored in the heap memory. The heap is a region of memory allocated during the program's execution to store objects, including arrays. This allows dynamic memory allocation and deallocation, making it easier to manage memory in Java applications.

4. What are the disadvantages of Array?

Ans 4. Disadvantages of Arrays:

- Fixed Size:- Arrays have a fixed size, meaning you must specify the number of elements during declaration, and it cannot be changed afterwards. This inflexibility can be problematic when the number of elements needs to vary dynamically.
- Insertion & Deletion :- Inserting or deleting elements in an array can be inefficient because it requires shifting other elements to accommodate the change, especially to accommodate the change, especially in large arrays.
- Wasted Memory:- If an Array is declared with a large size but not fully utilized, it can result in wasted memory space.
- Contiguous Memory Allocation: Arrays require contiguous memory allocation, which can lead to fragmentation and make it challenging to allocate large arrays.
- Multidimensional Arrays:- Working with multidimensional arrays can be complex and less intuitive compared to other data structures like matrices or lists.

5. What is an Anonymous Array in Java? Give an example?

Ans 5. In Java, an anonymous array is an array without a specified name. It is created and initialized in a single line of code and is used when you need an array for a short period without needing to assign it to a variable. You can directly use it as an argument or as part of an expression.

E.g. int sum = calculateSum(new int[ ] {1,2,3,4,5});

In this example, an anonymous integer array containing the elements 1,2,3,4,and 5 is passed as an argument to the method 'calculateSum( )'.

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

Ans 6. In Java, there are several ways to traverse an array:

1. Using a for loop: The most common method is to use a for loop with the array's length as the upper bound to iterate through each element.

E.g. int[ ] array = {1,2,3,4,5};

for (int i=0 ; i< array.length; i++)

{

// Access each element using array[i]

}

1. Using the Arrays.stream() method (Java 8 and later): You can convert the array to a stream and use forEach to process each element.

Code:-

```
int[ ] array = {1,2,3,4,5};
Arrays.stream(array).forEach(element -> {
                                        // Process each element here
});
```

2. Using the Arrays.asList() method:For traversing an Array of objects, you can convert it to a List and use the enhanced for Loop or other List-specific traversal methods.

Code:-

```
String[ ] array = {“A”, “B” , “C”};
List<String> list = Arrays.asList(array);
for (String element : list) {
    // Process each element here
}
```

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

Ans 7. The term “length” typically refers to the size or extent of something, such as the distance from one end to another. In programming, “length()” is a method used to determine the number of elements in a data structure or the number of characters in a string.

For example:

1. If we have an array called “numbers,” the length of the array would be the number of elements in it. In Java, you can find it using “numbers.length”.

2. If we have a string called “text,” the length of the string would be the number of characters in it. In Java, you can find it using “text.length()”.

Example:-

```
// Array Example

int[ ] numbers = {1,2,3,4,5};
int arrayLength = numbers.length;

// String example

String text = “Hello , world!”;
int stringLength = text.length();
```