

ArrayList Implementation

Write a program to implement your own ArrayList class. It should contain add(), get(), remove(), size() methods. Use dynamic array logic.
It should increase its size when it reaches threshold.

Create a class called MyArrayList with the following private attributes:

Object[] myStore

int actSize

Include a default constructor and Initialize the value of actSize to 0 and allocate space for storing 10 elements in the Object array.

Include the following public methods . The functionalities of the methods will be the same as in the ArrayList class under collections.

add()

get()

remove()

size()

In the get() and remove() method, ArrayIndexOutOfBoundsException may be thrown. Write logic to deal with the exception. When the exception is thrown, print appropriate messages:

Array Index Out Of Bounds Exception is thrown. The element cannot be retrieved

or

Array Index Out Of Bounds Exception is thrown. The element cannot be removed

Include a private method

increaseListSize() that doubles the size of the Object[].

This method is called from the add method when the difference between the allocated size and the current size of the Object array is less than or equal to 5. The new length of the object array is printed inside this function . The format is

“New length: len” where len is the new length.

Write a main method to test the above class.

Input and Output Format:

Refer Sample Input and Output for formatting specifications.

All text in bold corresponds to input and the rest corresponds to output.

Sample Input and Output:

Enter the data to be inserted

2

Do you want to add another element?Type yes/no

yes

Enter the data to be inserted

4

Do you want to add another element?Type yes/no

yes

Enter the data to be inserted

6

Do you want to add another element?Type yes/no

no

The elements in the list are

2

4

6

Enter the index of the element you want to examine

2

Element at index 2 is 6

List size: 3

Enter the index of the element you want to remove

4

Array Index Out Of Bounds Exception is thrown. The element cannot be removed

The elements in the list are

2

4

6