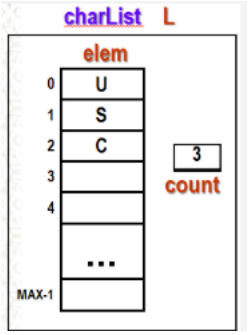
Array Implementation:

Given an illustration of an array representation:



Notation: If there are 2 names, the first name is a data type and the second is a variable name.
If there is only 1 name, it represents a variable name, you determine the data type of the variable based on the illustration.

Activity:

A] Write an appropriate definition of datatype charList. In addition, define MAX as a macro name for the maximum size of the array.

B] **Function specification:** Given a list and an element X, function findElem() will return true if element X is in the list; otherwise return false.

Note: The header file stdbool.h has a bool data type with values: true and false
Constraints: Only 1 return statement
No break and continue statements

Do the following steps to better understand functions and how to create them:

1) Write an appropriate function header of function findElem().
2) Write an appropriate function call. Before the call, declare the variable/s used in the call and initialize the variable/s if necessary.
   Note: Do not pass garbage values to the called function.
3) Assume that the function call in #2 is in main() function, draw the execution stack (or call stack) representing the function call. For each variable, draw a box and label it with name, value, and address.
   Note: You can use arbitrary addresses such as A100, B100, etc.
4) Write the code of the function findElem().
5) Simulate the function using the following test cases:
   a) the list is empty
   b) the list is not empty and element X is in the list
   c) the list is not empty and element X is not in the list