Lab1
Arrays

Data Structure and Methods:

- Build an array structure to accomodate at least 10 elements. Provide routines for the following:
- An initializer.
- A routine to populate (add an element) to the first available slot,
- A routine to delete (remove an element) from a chosen slot,
- A routine to display the number of filled slots,
- A routine to show the maximum number of slots,
- A routine to query the contents of a slot,
- A routine to update the information in a slot,
- A routine to find the slot that some information appears.
- A routine to show the contents of the entire data structure.
- Test for full and empty conditions of the Array.

Testing:

Write (a) program(s) that tests each of the methods used to manipulate the data structure:

- Construction.
- Populate the available slots until the structure is full, then attempt to add one more.
- Query the contents of a all slots.
- Remove the contents of a given slot.
- Update the contents of a slot.
- Deplete the structure until all slots are empty, then attempt to delete another .

When displaying the full structure use a loop that shows 1 slot and its content, at a time.

Your program should employ a simple menu that repeatedly prompts the user to perform the functions.

Example: Enter an Request Type
1 -- To add elements in to the Array (until -1 or null)
2 -- To remove an element out of the Array
3 -- To display the contents of the entire Array
4 -- To query the count of occupied slots
5 – To query the maximum number of slots
6 -- To update an Array slot with a new information value
7 -- To find the location of a given value
9 – Display the entire data structure
0 -- Exit

Show all inputs, outputs, explanation of return codes, and informational messages.