

Lab Specifications

- Programming consists of a User Interface, that instantiates the data structure object, which may in turn instantiate other data structure objects.
- Use the NODEELEMENT data structure provided for our labs.
- Do Not Use a PACKAGE statement in any of your submitted code.
- Do the labs in order. Each builds on the prior.
- The name of the lab must be LabX, where X is the lab number.
- Only submit the source code when sending the labwork to me.
- The labs must be well tested and the source code documented.
- I will return the lab to you on the first occurrence of a FAILURE, though more may be lurking.
- The ADDITION of elements to the structure should loop until it detects the ENTER key with no data.
- Provide a DUMP STRUCTURE function that shows all the elements with their node numbers.
- Traversals and dump of structures must be well-formatted and easily readable.
- Create a RANDOM NUMBER function that will provide testing data. The testing data will be integers between 0 and 100.

When displaying the full structure use a loop that shows a single element slot and its content.

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 or CR)
 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
 8 -- Exit

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