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LAB WORK 7

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Objectives:

- Stack, Queue

Question 1: Write a program to build Stack data structure using Queue data structure. And write proper functions for the Stack operations. Functions are:

- empty() : Returns whether the Stack is empty or not. If it is empty return true otherwise false.
- size() : Returns the size of the Stack. Means that how many elements in Stack meantime.
- top() : Returns a reference to the top element of the Stack.
- push(i) : Adds the element 'i' at the top of the Stack.
- pop() : Deletes the top most element of the Stack.
- display () : Write Stack element from last in to first in.

You must think how each function can be implemented in order can be to operate correctly. Do a menu representation for function selection. For running stages:

1. Write stack implementation
2. Show the menu for operation selection.
3. Realize the selected operation from menu
4. Return menu (define a key etc. to exit from program)

Question 2: Write a program to build Queue data structure using Stack data structure. And write proper functions for the Queue operations. Functions are:

- empty() : Returns whether the Queue is empty or not. If it is empty return true otherwise false.
- size() : Returns the size of the Queue. Means that how many elements in Queue meantime.
- front() : Returns a reference to the first element of the Queue.
- enqueue (i) : Adds the element 'i' at the end of the Queue.
- dequeue () : Deletes the first element of the Queue.
- display () : Write Queue element from first in to last in.

You must think how each function can be implemented in order can be to operate correctly. Do a menu representation for function selection. For running stages:

1. Write Queue implementation
2. Show the menu for operation selection.
3. Realize the selected operation from menu
4. Return menu (define a key etc. to exit from program)