Task No. 3

The first data structure.

Implement a stack using a static array (n=5) with separate operations.

Basic operations:

- *push()* – add an element,
- *pop()* – remove an element,
- *top()/peek()* – output the last element,
- *isEmpty()* – check if the stack is empty,
- *isFull()* – check if the stack is full.

Additional/derivative operations:

- *display()* – print all element of the stack to the screen (only use stack operations),
- *reverse()* – reverse the order of elements in the stack (it's not enough just to display, use stack operations),
- *clear()* – delete the stack.

The second data structure.

Implement singly circularly linked list (only *tail* pointer) with separate operations.

Basic operations:

- *addNode()/insert()* – add an element to:
  - the beginning,
  - the middle, (flowchart)
  - the end,
- *deleteNode()* – remove an element from:
  - the beginning,
  - the middle,
  - the end,
- *search()* – find the element in the list,
- *isEmpty()* – check if the list is empty.

Additional/derivative operations:

- *display()* – print the list,
- *reverse()* – reverse the order of elements in the list (use pointers),
- *clear()*.