

STACK USING ARRAYS

Last In, First Out (LIFO)

Algorithm for Push

1. If $TOP = SIZE - 1$, then:
 - (a) Display "The stack is in overflow condition"
 - (b) Exit
2. $TOP = TOP + 1$
3. $STACK[TOP] = ITEM$
4. Exit

Algorithm for Pop

1. If $TOP < 0$, then:
 - (a) Display "The stack is empty"
 - (b) Exit
2. Else remove the topmost element
3. $DATA = STACK[TOP]$
4. $TOP = TOP - 1$
5. Exit

Algorithm for Top / Peek

1. If $TOP = -1$, then:
 - (a) Display "The stack is empty (underflow condition)"
 - (b) Exit
2. Display $STACK[TOP]$
3. Exit

Algorithm to Check if the Stack is Empty

1. If $TOP = -1$, then:
 - (a) Display "The stack is empty"
 - (b) Exit
2. Else:

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(a) Display "The stack is not empty"

3. Exit

Algorithm to Check if the Stack is Full

1. If $TOP = SIZE - 1$, then:

(a) Display "The stack is full"

(b) Exit

2. Display "The stack is not full"

3. Exit