Kathmandu University

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COMP 202

Lab Report 2

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About the program

The program demonstrates the implementation of Stack and Queue with generic data, meaning any types of data can be used to implement Stack and Queue. In line 9, of main.cpp popping of data is rejected as the Stack is empty and the maximum size for the Stack is 4 so line 14 is not allowed. The Stack is FILO data with only front variable. The top of the data is 40 for this

Top→ 40
30
20
10

Fig: Stack till line 16
The pop function pops the top of the stack thus popping 40 from the stack

Top→ 30
20
10

Fig : Stack till line 18
Line 19 allows the pushing of 60 hence displays the output successfully pushed:60

Top→ 60
30
20
10

but cant push 70 as the stack is full now and displays Arrays is Full

The Character Stack demonstrates that the program is generic program and as the maximum size is declared 2 ‘c’ cant be pushed

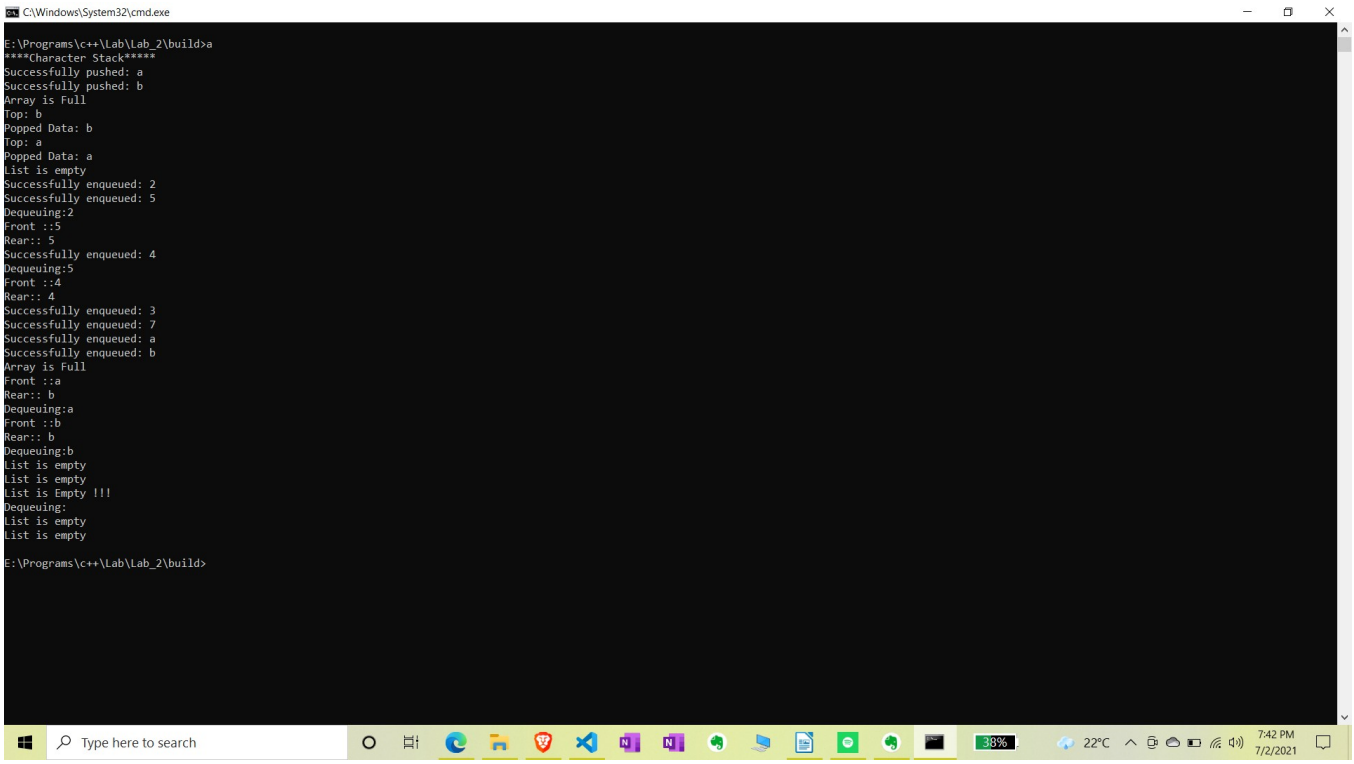
Top→ b
a

After pop is called twice the stack is empty thus line 40 displays List is empty

Circular Queue is implemented after line 41.

	0	1	2	3	Front	Back
					0	0
enqueue(2)	2				0	1
enqueue(5)	2	5			0	2
dequeue()		5			1	2
enqueue(4)		5	4		1	3
dequeue()			4		2	3
enqueue(3)			4	3	2	0
enqueue(7)	7		4	3	2	1

Here only n-1 space is used
Similarly char Queue has also been implemented


C:\Windows\System32\cmd.exe
E:\Programs\c++\Lab\Lab_2\build>a
****Character Stack*****
Successfully pushed: a
Successfully pushed: b
Array is Full
Top: b
Popped Data: b
Top: a
Popped Data: a
List is empty
Successfully enqueued: 2
Successfully enqueued: 5
Dequeuing:2
Front ::5
Rear:: 5
Successfully enqueued: 4
Dequeuing:5
Front ::4
Rear:: 4
Successfully enqueued: 3
Successfully enqueued: 7
Successfully enqueued: a
Successfully enqueued: b
Array is Full
Front ::a
Rear:: b
Dequeuing:a
Front ::b
Rear:: b
Dequeuing:b
List is empty
List is empty
List is Empty !!!
Dequeuing:
List is empty
List is empty
E:\Programs\c++\Lab\Lab_2\build>
Type here to search
38%
22°C
7:42 PM
7/2/2021

Output