

National	University of Computer	and Emerging S	Sciences (Lahore)
Course:	Applied Programming		
Section:	MCS-1A	Semester:	Spring 2024
Duration:	40 minutes	TotalMarks:	20 17
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Question 1: Write a C++ function printFibonacci(int n) which prints the Fibonacci numbers till the nth term inclusively by using FIFO Queue data structure. You may assume that Queue data structure in the prints of the prints o

assume that Queue data structure is already implemented.

Example:
Input: n = 7
Output: 0 112358

Int n = 7:

Int i = 0;

While (i = = p)

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court cc queue [i4, (i+1)]:

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0 (2 3 4 5 6 - 1 1 1 1 - 1 1 1 2 3 5 8 Page 1 0 1 3 5

Question 2: Write a C++ function evalRPN(char tokens[], int n), where n is the size of the 1-D character array tokens of tokens that represents an arithmetic expression in Reverse Polish Notation (RPN) a.k.a. Postfix Notation. The function evaluates the given RPN expression and then returns an integer that represents the value, that is the answer, of that expression. You may use any number of helper functions and may assume the implementation of the LIFO Stack data structure.

Note:

- The valid operators are '+', '-', '*' and '/'.
- · Each operand may be a single-digit integer or another expression.
- The division between two integers always truncates toward zero.
- There will not be any division by zero.
- The input represents a valid arithmetic expression in a reverse polish notation.

Example

Input: tokens[5] = ["2","1","+","3","*"], n = 5

Output: 9

Explanation: ((2 + 1) * 3) = 9

(5/11)

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	void eval RPN (chan tokens[], int n)	rough d
	3 ind i=0	2+1=3
(1)	ind i=0 While (i == or) // traverse till i=size Toprobl (i tokens[i] == operand)	3*3 = 9
	? if (tokens[i] = = operand)	n=513e Tintalaz
else if (operator	13 tack push copping	$2+1=3$ $3\times3=9$ $n=sige$ $chan * a; intai, a; o; o;$
else if (operator	else { stack pop (operad);	will (a == 5/30)
¿ retuino./o [al = operand value;	2 aif (air [a] = = operand) 2 puenstack. push (ope)
3	Stack pop (operand);	3
1	02 = aperound & value;	else & shake pop (ope)
	3 - arator 02' X	stack pop (ope)
	votunio, operator ozi, X	a2 = (0Pe)
you had	if Coperator == "+") vois	orisult = ai (operator) 92
to push of	2 roturn 01+02;	while (2 4:3°) perand) if (toker[x] = operand) Page 2
Iv.s.	else if coperator == "=")	if (toke [x] = Page 2
	{ velon 0,-021}	3 st push (operad)
	else if (operator == "=") / 05 { relun 0, -021} { relun 0, * 023 }	else