Due on 2020-02-12, 23:59 IST

Solve problem 5 of chapter 4.

As input, you are given an integer n, a double x, followed by n+1 doubles a_n, a_{n-1}, ..., a_0. You are to print the value of the polynomial a_0 + a_1x+a_2x^2+...+a_nx^n.

Here is the manual algorithm. At the beginning you just have read a_n. Next you read a_{n-1} and calculate a_nx+a_{n-1}. Next you read a_{n-2} and calculate (a_nx+a_{n-1})x+a_{n-2}. So after n iterations you will have the value of the polynomial above. Note that in each iteration you need to use the values calculated earlier.

Check that you understand the method by calculating manually for small values of n. This is not to be submitted, nor put in a program.

Write the program. You will need to decide what variables to use, what to store in them. Test your program as much as you can before submitting it.

Sample Test Cases

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 1</td>
<td>4 3 2 3 4 5 6</td>
<td>300</td>
</tr>
<tr>
<td>Test Case 2</td>
<td>2 3 3 2 1</td>
<td>34</td>
</tr>
</tbody>
</table>

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.
Sample solutions (Provided by instructor)

```cpp
#include <iostream>
#define repeat(x) for(int _iterator_i = 0, _iterator_limit = x; _iterator_i < _iterator_limit; ++_iterator_i) 
#define main_program int main()
#include <cmath>
using namespace std;

main_program {
  int n;
  double x;
  double poly=0, coeff=0;
  cin >> n;
  cin >> x;
  repeat(n+1){
    cin >> coeff;
    poly = poly*x + coeff;
  }
  cout << poly << endl;
}
```

https://onlinecourses.nptel.ac.in/noc20_cs53/progassignment?name=169