

MINISTRY OF SCIENCE AND
EDUCATIONNATIONAL TECHNICAL
UNIVERSITY“KHARKIV POLYTECHNIC INSTITUTE”
DEPARTMENT OF SOFTWARE ENGINEERING AND
MANAGEMENT INFORMATION TECHNOLOGIES

Report from lab#1
Discipline “Fundamentals of Software Engineering”

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Goal: Learn basics C++

Task:

1- Develop the code for the task from previous lab

2- Prepare the report of the work

$$y = \begin{cases} \sum_{i=1}^{n-1} \sum_{j=1}^n \frac{j}{j^2 + j}, x < 0 \\ x - \sum_{i=1}^{n-1} i, x \geq 0 \end{cases}$$

```

1  #include<iostream>
2
3  using namespace std;
4
5  int main() {
6
7      double a, b, step, n, i, j, out = 0;
8
9      cout << "a = ";
10     cin >> a;
11     cout << "b = ";
12     cin >> b;
13     cout << "step = ";
14     cin >> step;
15     cout << "n = ";
16     cin >> n;
17     cout << endl;
18
19     if (b > a && step > 0) {
20         for (double x = a; x <= b; x += step) {
21             if (x<0) {
22                 i = 1;
23                 while (i <= (n - 1)) {
24                     j = 1;
25                     while (j <= n) {
26                         out += j / (j*j + j);
27                         j++;
28                     }
29                     i++;
30                 }
31                 cout << "x=" << x << " y=" << out << endl;
32             }
33             else {
34                 i = 1;
35                 while (i <= (n - 1)) {
36                     out += i;
37                     i++;
38                 }
39                 out = x - out;
40                 cout << "x=" << x << " y=" << out << endl;
41             }
42         }
43     }
44     else {
45         cout << "Wrong input data\n";
46     }
47     cout << endl;
48
49     return 0;
50 }
51

```

Conclusion: During the process of performing the lab I have learned basic principles of C++