

LAB 03

EC2010: Computer Programming

Final Lab Report

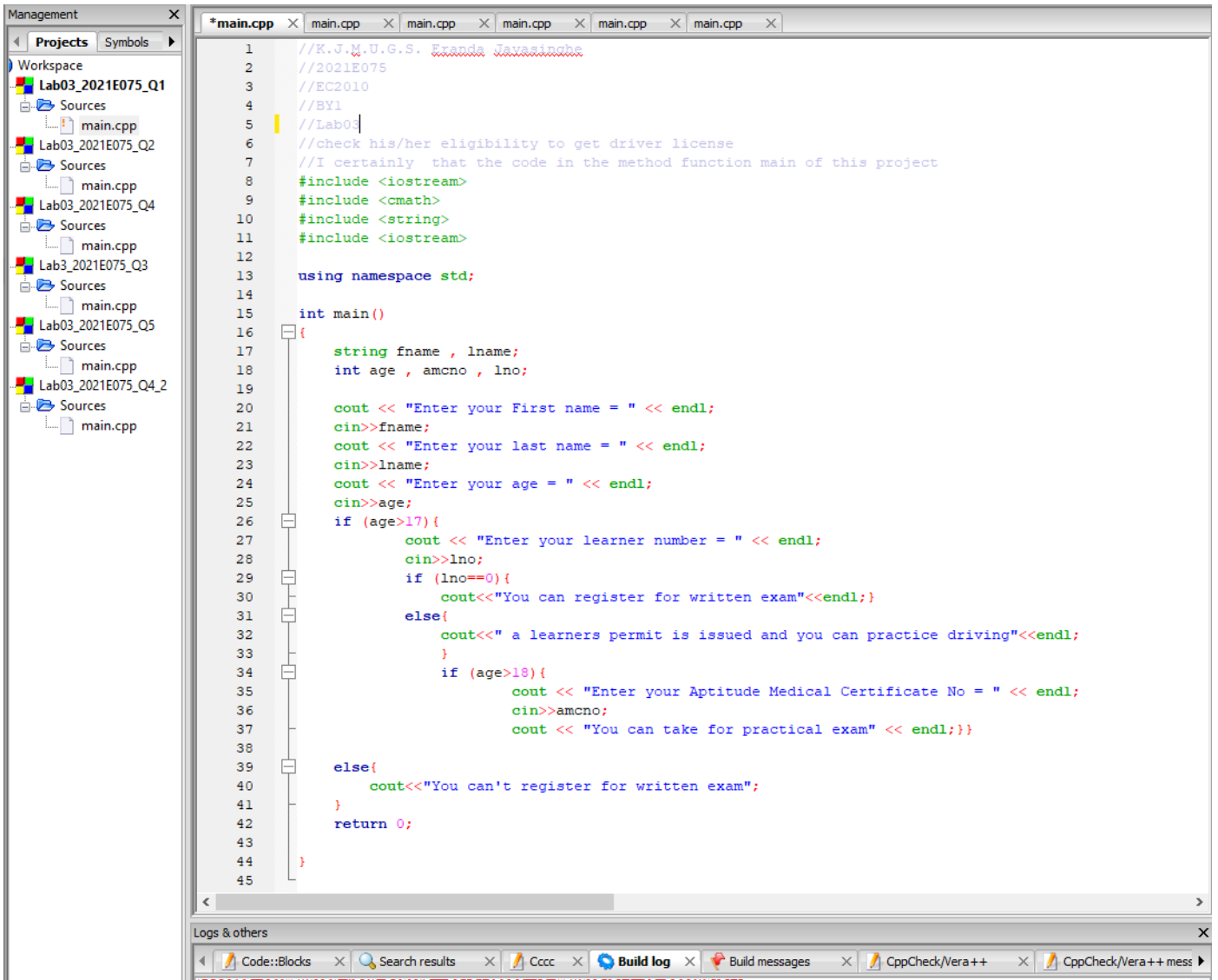
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Reg no : 2021/E/075

SEMESTER 2

Lab 03

Date :03/12/2022



The screenshot shows a C++ IDE interface. On the left, the 'Projects' pane displays a workspace with several lab projects, each containing a 'main.cpp' file. The main editor window shows the code for 'main.cpp'. The code is a C++ program that checks eligibility for a driver license based on age and learner number. It includes headers for iostream, cmath, and string, and uses the std namespace. The main function prompts the user for their first name, last name, age, and learner number. It then checks if the age is greater than 17. If so, it prompts for the learner number. If the learner number is 0, it allows registration for a written exam. Otherwise, it issues a learner's permit and prompts for the aptitude medical certificate number. If the age is greater than 18, it allows taking a practical exam. If the age is 17 or less, it states that the user cannot register for a written exam. The program returns 0 at the end.

```
1 //K.J.U.G.S. Kanda Javasingha
2 //2021E075
3 //EC2010
4 //BY1
5 //Lab03
6 //check his/her eligibility to get driver license
7 //I certainly that the code in the method function main of this project
8 #include <iostream>
9 #include <cmath>
10 #include <string>
11 #include <iostream>
12
13 using namespace std;
14
15 int main()
16 {
17     string fname , lname;
18     int age , amcno , lno;
19
20     cout << "Enter your First name = " << endl;
21     cin>>fname;
22     cout << "Enter your last name = " << endl;
23     cin>>lname;
24     cout << "Enter your age = " << endl;
25     cin>>age;
26     if (age>17){
27         cout << "Enter your learner number = " << endl;
28         cin>>lno;
29         if (lno==0){
30             cout<<"You can register for written exam"<<endl;
31         }
32         else{
33             cout<<" a learners permit is issued and you can practice driving"<<endl;
34             if (age>18){
35                 cout << "Enter your Aptitude Medical Certificate No = " << endl;
36                 cin>>amcno;
37                 cout << "You can take for practical exam" << endl;}}
38         }
39     }
40     else{
41         cout<<"You can't register for written exam";
42     }
43     return 0;
44 }
45
```

The bottom of the IDE shows a 'Logs & others' pane with several tabs: Code::Blocks, Search results, Cccc, Build log, Build messages, CppCheck/Vera++, and CppCheck/Vera++ mess.

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q1\bin\Debug\Lab03_2021E075_Q1.exe"

```
Enter your First name =  
san  
Enter your last name =  
jaya  
Enter your age =  
18  
Enter your learner number =  
0  
You can register for written exam  
  
Process returned 0 (0x0)   execution time : 16.587 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q1\bin\Debug\Lab03_2021E075_Q1.exe"

```
Enter your First name =  
Era  
Enter your last name =  
Nda  
Enter your age =  
18  
Enter your learner number =  
1  
a learners permit is issued and you can practice driving  
  
Process returned 0 (0x0)   execution time : 16.034 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q1\bin\Debug\Lab03_2021E075_Q1.exe"

```
Enter your First name =  
Era  
Enter your last name =  
Nda  
Enter your age =  
19  
Enter your learner number =  
0  
You can register for written exam  
Enter your Aptitude Medical Certificate No =  
6  
You can take for practical exam  
  
Process returned 0 (0x0)   execution time : 44.218 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q1\bin\Debug\Lab03_2021E075_Q1.exe"

```
Enter your First name =  
Era  
Enter your last name =  
Nda  
Enter your age =  
19  
Enter your learner number =  
2  
a learners permit is issued and you can practice driving  
Enter your Aptitude Medical Certificate No =  
3  
You can take for practical exam  
  
Process returned 0 (0x0)   execution time : 19.664 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q1\bin\Debug\Lab03_2021E075_Q1.exe"

Enter your First name =

Eranda

Enter your last name =

Jaysinhe

Enter your age =

15

You can't register for written exam

Process returned 0 (0x0) execution time : 20.962 s

Press any key to continue.

The screenshot shows a C++ IDE with a project workspace on the left and a code editor on the right. The workspace contains a folder named 'Workspace' with several subfolders, each containing a 'main.cpp' file. The code editor displays the content of 'main.cpp', which includes a switch statement for grade eligibility.

```

1 //K.J.M.U.G.S. Eranda Javasinghe
2 //2021E075
3 //EC2010
4 //BY1
5 //Lab03
6 //switch case to check the eligibility of the student to go next level
7 //I certainly that the code in the method function main of this project
8 #include <iostream>
9
10 using namespace std;
11
12 int main()
13 {
14     string name , subject ;
15     int reg_no;
16     char grade;
17
18     cout << "Enter your name = " << endl;
19     cin>>name;
20     cout << "Enter your subject = " << endl;
21     cin>>subject;
22     cout << "Enter your Register no = " << endl;
23     cin>>reg_no;
24     cout << "Enter your grade = " << endl;
25     cin>>grade;
26
27     switch (grade){
28     case 'A':
29         cout << "Excellent, your grade is A." << endl;
30         break;
31     case 'B':
32         cout << "Well done, your grade is B." << endl;
33         break;
34     case 'C':
35         cout << "You passed, your grade is C." << endl;
36         break;
37     case 'D':
38         cout << " Better try again, your grade is D." << endl;
39         break;
40     default:
41         cout << "Invalid grade." << endl;
42         break;
43     }
44
45     return 0;
46 }
47

```

The bottom of the IDE shows a 'Logs & others' panel with tabs for 'Code::Blocks', 'Search results', 'Cccc', 'Build log', 'Build messages', 'CppCheck/Vera++', and 'CppK'. The status bar at the bottom indicates the file path 'C:\Users\2021e075\O\C/C++', the window title 'Windows (CR+LF)', the file name 'WINDOWS-1252', the cursor position 'Line 22, Col 49, Pos 517', and the current mode 'Insert'.

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q2\bin\Debug\Lab03_2021E075_Q2.exe"

```
Enter your name =  
Sanjaya  
Enter your subject =  
History  
Enter your Register no =  
75  
Enter your grade =  
A  
Excellent, your grade is A.  
  
Process returned 0 (0x0)   execution time : 22.728 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q2\bin\Debug\Lab03_2021E075_Q2.exe"

```
Enter your name =  
Eranda  
Enter your subject =  
Maths  
Enter your Register no =  
76  
Enter your grade =  
B  
Well done, your grade is B.  
  
Process returned 0 (0x0)   execution time : 14.268 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q2\bin\Debug\Lab03_2021E075_Q2.exe"

```
Enter your name =  
San  
Enter your subject =  
Sinhala  
Enter your Register no =  
75  
Enter your grade =  
C  
You passed, your grade is C.  
  
Process returned 0 (0x0)   execution time : 20.757 s  
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q2\bin\Debug\Lab03_2021E075_Q2.exe"

```
Enter your name =  
Eran  
Enter your subject =  
English  
Enter your Register no =  
75  
Enter your grade =  
D  
Better try again, your grade is D.  
  
Process returned 0 (0x0)   execution time : 17.288 s  
Press any key to continue.
```


"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q2\bin\Debug\Lab03_2021E075_Q2.exe"

Enter your name =

Sanjaya

Enter your subject =

physics

Enter your Register no =

75

Enter your grade =

S

Invalid grade.

Process returned 0 (0x0) execution time : 27.598 s

Press any key to continue.

The screenshot shows a C++ IDE interface. On the left is the 'Management' pane with a 'Projects' tab. It displays a workspace containing several projects, each with a 'Sources' folder and a 'main.cpp' file. The projects are: Lab03_2021E075_Q1, Lab03_2021E075_Q2, Lab03_2021E075_Q4, Lab3_2021E075_Q3, Lab03_2021E075_Q5, and Lab03_2021E075_Q4_2. The main editor on the right shows the code for 'main.cpp'. The code is a C++ program that calculates the multiplication of 10 numbers. It includes comments at the top identifying the author as K.J.M.U.G.S. Eranda Javasinghe, the year as 2021E075, the course as EC2010, and the lab as BY1/Lab03. The program uses `<iostream>` and `<cmath>` headers and the `std` namespace. The `main` function initializes a variable `t` and a `sum` to 1, then enters a `for` loop from `i=1` to `i=10`. Inside the loop, it prompts the user to 'Enter number = ' and reads the input into `t`, then multiplies it into the `sum`. After the loop, it outputs 'multiplication is = ' followed by the `sum` and returns 0.

```
1 //K.J.M.U.G.S. Eranda Javasinghe
2 //2021E075
3 //EC2010
4 //BY1
5 //Lab03
6 //find the multiplication of all those 10 numbers
7 //I certainly that the code in the method function main
8 #include <iostream>
9 #include <cmath>
10
11 using namespace std;
12
13 int main()
14 {
15     int i , sum = 1 , t ;
16     for(i=1 ; i<=10 ; i++){
17         cout<<"Enter number = ";
18         cin>>t;
19         sum = sum*t;
20     }
21     cout << "multiplication is = " <<sum;
22     return 0;
23 }
24
```

The bottom of the IDE shows a 'Logs & others' pane with tabs for 'Code::Blocks', 'Search results', 'Cccc', 'Build log', and 'Build message'. The status bar at the very bottom indicates the file path 'C:\Users\2021e075\O C/C++', the window title 'Windows (CR+LF)', the window ID 'WINDOWS-1252', the current cursor position 'Line 6, Col 50, Pos 121', and a partial 'Ins' label.

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab3_2021E075_Q3\bin\Debug\Lab3_2021E075_Q3.exe"

```
Enter number = 2
Enter number = 5
Enter number = 3
Enter number = 4
Enter number = 6
Enter number = 2
Enter number = 4
Enter number = 3
Enter number = 2
Enter number = 3
multiplication is = 103680
Process returned 0 (0x0)   execution time : 17.722 s
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab3_2021E075_Q3\bin\Debug\Lab3_2021E075_Q3.exe"

```
Enter number = 1
Enter number = 1
Enter number = 1
Enter number = 1
Enter number = 1
Enter number = 2
Enter number = 2
Enter number = 2
Enter number = 2
Enter number = 2
multiplication is = 32
Process returned 0 (0x0)   execution time : 12.912 s
Press any key to continue.
```

Q4

The screenshot shows a C++ IDE with a project structure on the left and a code editor on the right. The project structure includes a workspace with several lab folders, each containing a 'Sources' folder and a 'main.cpp' file. The code editor displays a C++ program that calculates the sum of numbers from 1 to 10. The program includes comments, a header file, and a main function with a while loop.

```
1 //K.J.M.U.G.S. Eranda Javasinghe
2 //2021E075
3 //EC2010
4 //BY1
5 //Lab03
6 //find the summation of positive numbers
7 //I certainly that the code in the method function main of this project
8 #include <iostream>
9
10 using namespace std;
11
12 int main()
13 {
14     int i=1 , sum = 0 ,t ;
15     while(i<=10){
16         cout<<"Enter number = ";
17         cin>>t;
18         if (t>0)
19         {
20             sum = sum+t;
21             i++;
22         }
23         else{
24             i++;
25         }
26     }
27     cout << "multiplication is = " <<sum;
28     return 0;
29 }
30
31
```

The status bar at the bottom indicates the file path is C:\Users\2021e075\O C/C++, the encoding is Windows (CR+LF), the window title is WINDOWS-1252, the cursor is at Line 7, Col 73, Pos 186, and the keyboard layout is Insert.

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q4\bin\Debug\Lab03_2021E075_Q4.exe"

```
Enter number = 2
Enter number = 5
Enter number = 3
Enter number = 8
Enter number = 7
Enter number = 4
Enter number = 3
Enter number = 8
Enter number = 9
Enter number = 4
multiplication is = 53
Process returned 0 (0x0)   execution time : 14.146 s
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q4\bin\Debug\Lab03_2021E075_Q4.exe"

```
Enter number = 2
Enter number = 5
Enter number = 3
Enter number = 
8
Enter number = 7
Enter number = 4
Enter number = 8
Enter number = 9
Enter number = 4
Enter number = -3
multiplication is = 50
Process returned 0 (0x0)   execution time : 22.411 s
Press any key to continue.
```

Q4 b

The screenshot shows a C++ IDE with a project workspace on the left and a code editor on the right. The workspace contains several projects, each with a 'Sources' folder containing a 'main.cpp' file. The code editor displays the content of one of these 'main.cpp' files, which is a C++ program to calculate the sum of the first 10 positive integers. The program includes comments, a header file, and a main function that uses a do-while loop to prompt the user for a number and calculate the sum.

```
1 //K.J.M.U.G.S. Franda Javasinghe
2 //2021E075
3 //EC2010
4 //BY1
5 //Lab03
6 //find the summation of positive numbers
7 //I certainly that the code in the method function main of this project
8 #include <iostream>
9
10 using namespace std;
11
12 int main()
13 {
14     int i=1 , sum = 0 , t ;
15     do{
16         cout<<"Enter number = ";
17         cin>>t;
18         if (t>0)
19         {
20             sum = sum+t;
21             i++;
22         }
23         else{
24             i++;
25         }
26     }
27     while(i<=10);
28     cout << "multiplication is = " <<sum;
29     return 0;
30 }
31
```

The status bar at the bottom indicates the file path is C:\Users\2021e075\O\C/C++ and the current position is Line 18, Col 17, Pos 355.

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q4_2\bin\Debug\Lab03_2021E075_Q4_2.exe"

```
Enter number = 2
Enter number = 5
Enter number = 3
Enter number = 8
Enter number = 7
Enter number = 4
Enter number = 3
Enter number = 8
Enter number = 9
Enter number = 4
multiplication is = 53
Process returned 0 (0x0)   execution time : 25.607 s
Press any key to continue.
```

"C:\Users\2021e075\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q4_2\bin\Debug\Lab03_2021E075_Q4_2.exe"

```
Enter number = 2
Enter number = 5
Enter number = 3
Enter number = 8
Enter number = 7
Enter number = 4
Enter number = 8
Enter number = 9
Enter number = 4
Enter number = -3
multiplication is = 50
Process returned 0 (0x0)   execution time : 17.227 s
Press any key to continue.
```

Q5

```

1 //K.J.M.U.G.S. Eranda Jayasinghe //2021E075 //EC2010 //BY1 //Lab03
2 //help a customer involving two cases, deposit and withdraw amount
3 //I certainly that the code in the method function main of this project
4 #include <iostream>
5 using namespace std;
6
7 int main()
8 {
9     string p;
10    int acc , wanttoget,wanttodeposit,amount=1000;
11    //Lets get current amount in the bank account is 1000
12    cout << "...Welcome to our Bank..." << endl;
13    cout << "Enter your account number." << endl;
14    cin>>acc;
15    cout << "What is the service do you want today.(withdraw / deposit)" << endl;
16    cin>>p;
17
18    if (p == "withdraw"){
19        cout<<"Enter the value of money do you want to get = ";
20        cin>>wanttoget;
21        while(amount<wanttoget){
22            cout<<"Account balance is not enough"<<endl;
23            cout<<"Enter the value of money do you want to get = ";
24            cin>>wanttoget;
25        }
26        cout<<"You have enough account balance and you successfully withdraw "<< wanttoget;
27    }
28    else if (p=="deposit"){
29        cout<<"Enter balance if you want to deposit = ";
30        cin>>wanttodeposit;
31        while(wanttodeposit<=0){
32            cout<<"Please enter valid positive value to deposit"<<endl;
33            cout<<"Enter balance if you want to deposit = ";
34            cin>>wanttodeposit;
35        }
36        cout<<"you successfully deposit "<<wanttodeposit;
37    }
38    return 0;
39 }

```

Logs & others

Code::Blocks Search results Cccc Build log Build messages CppCheck/Vera++ CppCheck/Vera++ messages Cscope Debugger

C:\pdf\one drive\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q5\main.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 70, Pos 69 Insert

```

"C:\pdf\one drive\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q5\bin\Debug\Lab03_2021E075_Q5.exe"
....Welcome to our Bank....
Enter your account number.
645899
What is the service do you want today.(withdraw / deposit)
withdraw
Enter the value of money do you want to get = 1000
You have enough account balance and you successfully withdraw 1000
Process returned 0 (0x0)   execution time : 22.314 s
Press any key to continue.

```



```
Select "C:\pdf\one drive\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q5\bin\Debug\Lab03_2021E075_Q5.exe"
....Welcome to our Bank....
Enter your account number.
554778
What is the service do you want today.(withdraw / deposit)
withdraw
Enter the value of money do you want to get = 10000
Account balance is not enough
Enter the value of money do you want to get = 2000
Account balance is not enough
Enter the value of money do you want to get = 1001
Account balance is not enough
Enter the value of money do you want to get = 500
You have enough account balance and you successfully withdraw 500
Process returned 0 (0x0)   execution time : 27.169 s
Press any key to continue.
```

```
"C:\pdf\one drive\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q5\bin\Debug\Lab03_2021E075_Q5.exe"
....Welcome to our Bank....
Enter your account number.
224788
What is the service do you want today.(withdraw / deposit)
deposit
Enter balance if you want to deposit = 1000
you successfully deposit 1000
Process returned 0 (0x0)   execution time : 19.019 s
Press any key to continue.
```

"C:\pdf\one drive\OneDrive - University of Jaffna\lab3\Lab03_2021E075_Q5\bin\Debug\Lab03_2021E075_Q5.exe"

....Welcome to our Bank....

Enter your account number.

214987

What is the service do you want today.(withdraw / deposit)

deposit

Enter balance if you want to deposit = -200

Please enter valid positive value to deposit

Enter balance if you want to deposit = -30000

Please enter valid positive value to deposit

Enter balance if you want to deposit = -1

Please enter valid positive value to deposit

Enter balance if you want to deposit = 100

you successfully deposit 100

Process returned 0 (0x0) execution time : 23.466 s

Press any key to continue.