

C++ Programming

Reading Variables

Mostafa S. Ibrahim

Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher

PhD from Simon Fraser University - Canada

Bachelor / Msc from Cairo University - Egypt

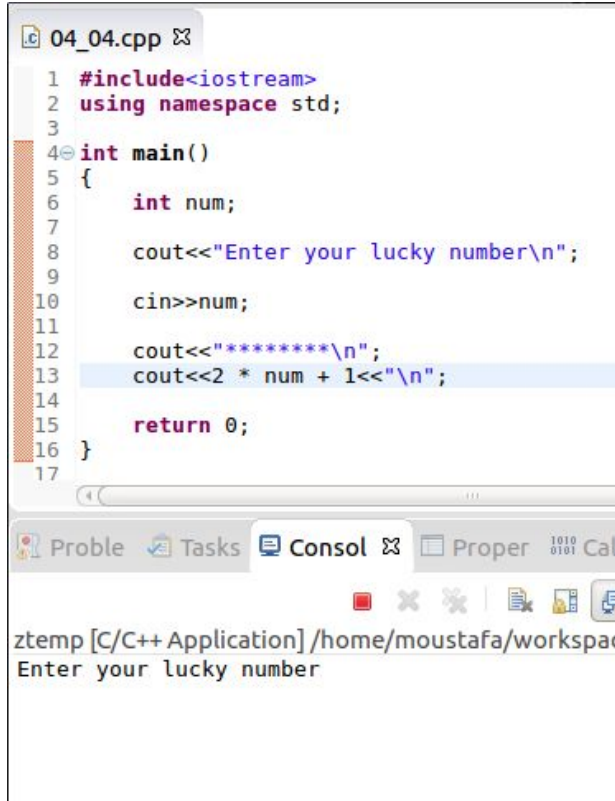
Ex-(Software Engineer / ICPC World Finalist)



Reading variables

- In previous times we learned how to print
 - We used `cout<<`
 - Remember: C = Console - Out = Output
- To read we use `cin>>`
 - C = console, in = Input
- Steps
 - Define a variable
 - Read it
 - Wait user enter input from the console

Reading an integer



```
04_04.cpp
1 #include<iostream>
2 using namespace std;
3
4 int main()
5 {
6     int num;
7
8     cout<<"Enter your lucky number\n";
9
10    cin>>num;
11
12    cout<<"*****\n";
13    cout<<2 * num + 1<<"\n";
14
15    return 0;
16 }
17
```

Problem Tasks Console Proper 1010 0101 Cal

ztemp [C/C++ Application] /home/moustafa/workspac
Enter your lucky number

- The compiler behaviour:
 - Line 6: Declare variable in memory: num
 - Line 8: Print Enter your lucky number
 - Line 10: Trying to read number
 - Compiler here FREEZES
 - It waits you enter a number

Reading an integer

```
04_04.cpp
1 #include<iostream>
2 using namespace std;
3
4 int main()
5 {
6     int num;
7
8     cout<<"Enter your lucky number\n";
9
10    cin>>num;
11
12    cout<<"*****\n";
13    cout<<2 * num + 1<<"\n";
14
15    return 0;
16 }
17
```

Problems Tasks Console

```
<terminated> ztemp [C/C++ Application] /
Enter your lucky number
10
*****
21
|
```

- Let's input 10
- So num in memory assigned 10
- Print $2 * 10 + 1 \Rightarrow 21$
- Remember
 - Don't enter value low or more than min/max values

Reading multiple numbers

```
04_05.cpp
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int a, b;
6
7     cout << "Enter 2 numbers\n";
8
9     cin >> a >> b;
10
11     cout << a * b << " " << a + b << "\n";
12
13     return 0;
14 }
15
```

Problems Tasks Console Properties

<terminated> ztemp [C/C++ Application] /home/moustafa/v

Enter 2 numbers

2 5

10 7

|

- Remember we print multiple things
- We can also read multiple things using a single command
- Here we read 2 numbers and do 2 operations
 - We input 2 and 5

Reading different data types

- We can read several types

```
04_06.cpp
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int age;
6     cout<<"Enter age: ";
7     cin>>age;
8
9     double weight;
10    cout<<"Enter weight: ";
11    cin>>weight;
12
13    char group;
14    cout<<"Enter group: ";
15    cin>>group;
16
17    string name;
18    cout<<"Enter name: ";
19    cin>>name;
20
21    cout<<"I am "<<name<<" belongs to group "<<group<<"\n";
22    cout<<"My weight "<<weight<<" and age "<<age;
23
24    return 0;
25 }
```

Problems Tasks Console Properties Call Graph Search

<terminated> ztemp [C/C++ Application] /home/moustafa/workspaces/eclips
Enter age: 55
Enter weight: 92.5
Enter group: D
Enter name: mostafa
I am mostafa belongs to group D
My weight 92.5 and age 55

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”