C++ Programming
More on Printing

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Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
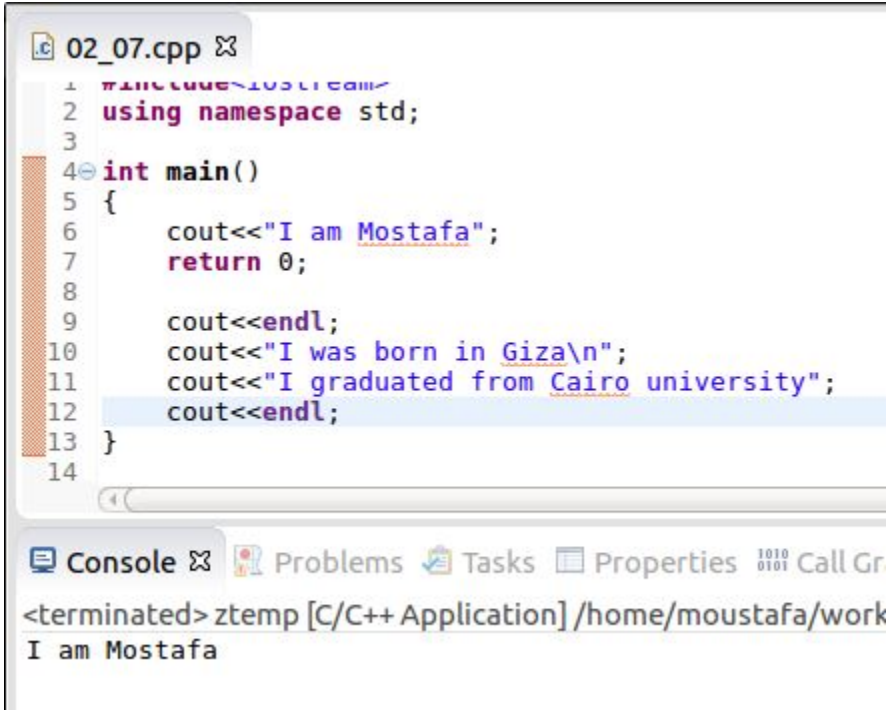*PhD* from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
Ex-(Software Engineer / ICPC World Finalist)

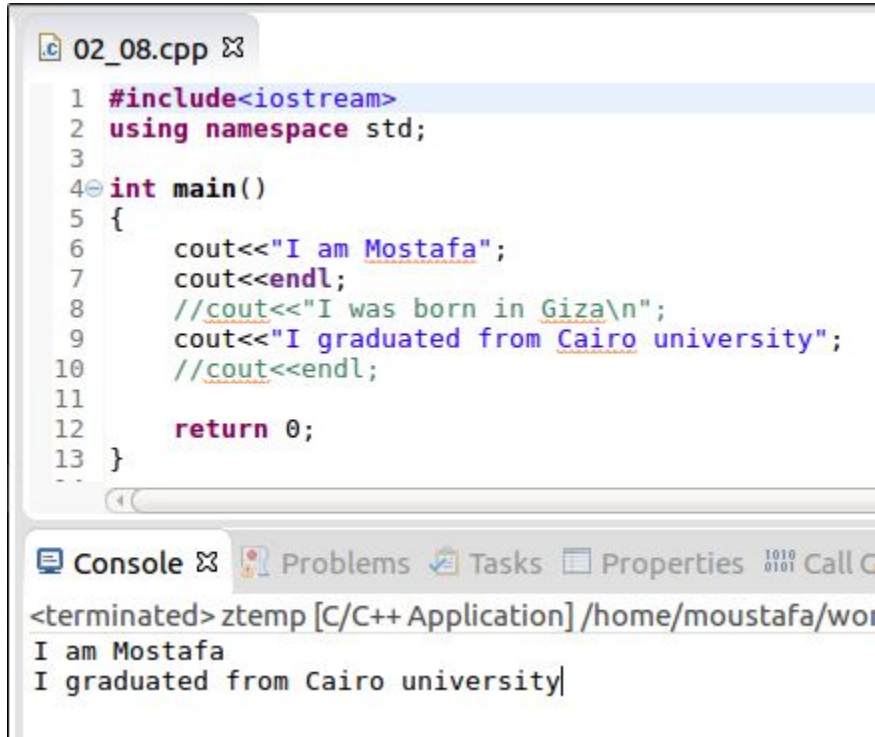# Don't write after return line!


```cpp
1  #include<iostream>
2  using namespace std;
3
4  int main()
5  {
6      cout<<"I am Mostafa";
7      return 0;
8
9      cout<<endl;
10     cout<<"I was born in Giza\n";
11     cout<<"I graduated from Cairo university";
12     cout<<endl;
13 }
14
```

Console ⊠ Problems Tasks Properties Call Gr

\<terminated\> ztemp [C/C++ Application] /home/moustafa/work
I am Mostafa

- Why other lines not printed?
- Return 0 tells compiler we are done.
- Lines after it are **ignored**!
- Be careful!

Code comments: Using //


```cpp
02_08.cpp

1  #include<iostream>
2  using namespace std;
3
4  int main()
5  {
6      cout<<"I am Mostafa";
7      cout<<endl;
8      //cout<<"I was born in Giza\n";
9      cout<<"I graduated from Cairo university";
10     //cout<<endl;
11
12     return 0;
13 }
```

Console Problems Tasks Properties Call (

\<terminated\> ztemp [C/C++ Application] /home/moustafa/wor
I am Mostafa
I graduated from Cairo university

- Any thing in same line after // will not be executed
- So comment what you want when you need so

Code comments: Using /*   */

```cpp
02_09.cpp ⊠
 1  #include<iostream>
 2  using namespace std;
 3
 4⊖ int main()
 5  {
 6      cout<<"I am Mostafa";
 7⊖      /*
 8      cout<<endl;
 9      cout<<"I was born in Giza\n";
10      cout<<"I graduated from Cairo university";
11      cout<<endl;
12      */
13
14      return 0;
15  }
```
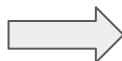
Console ⊠   Problems Tasks Properties Call Gr

<terminated> ztemp [C/C++ Application] /home/moustafa/work
I am Mostafa

- If you have many consecutive lines and won't compiler ignore, put them between /* */

Numbers

```cpp
#include<iostream>
using namespace std;

int main()
{
    cout<<1<<"\n";
    cout<<12<<"\n";
    cout<<123<<" is a number\n";
    cout<<"123"<<" is NOT a number\n";
    cout<<endl;

    cout<<15.7<<"\n";
    cout<<-12.52<<"\n";
    cout<<endl;

    cout<<1234<<"\n";
    cout<<4321<<"\n\n";

    cout<<43211234<<"\n";
    cout<<4321<<1234<<"\n";

    cout<<"\nMy luck number is: "<<17<<"\n";

    return 0;
}
```

```
1
12
123 is a number
123 is NOT a number

15.7
-12.52

1234
4321

43211234
43211234

My luck number is: 17
```

Math on numbers!

```cpp
02_11.cpp
 1  #include<iostream>
 2  using namespace std;
 3
 4  int main()
 5  {
 6      cout<<1<<"\n";
 7      cout<<1+2<<"\n";
 8      cout<<1+2+3<<"\n";
 9      cout<<1+2+3+4<<"\n";
10      cout<<"1+2+3+4"<<"\n";
11      cout<<"1+2+3+4="<<1+2+3+4<<"\n\n";
12
13      cout<<1+2+3+4-10<<"\n";
14      cout<<17-10<<"\n\n";
15
16      cout<<"2*3*4 = "<<2*3*4<<"\n";
17      cout<<"12/2 = "<<12/2<<"\n";
18      cout<<"12/2/3 = "<<12/2/3<<"\n\n";
19
20      cout<<"6/2 = "<<6/2<<"\n";
21      cout<<"7/2 = "<<7/2<<"\n";
22      cout<<"7.0/2.0 = "<<7.0/2.0<<"\n\n";
23
24      cout<<10*10*10*10*10*10*10*10*10<<"\n";
25      cout<<10*10*10*10*10*10*10*10*10*10<<"\n";
26
27      return 0;
28  }
29
```

```
Problems   Tasks   Console    Pr
<terminated> ztemp [C/C++ Application] /ho
1
3
6
10
1+2+3+4
1+2+3+4=10

0
7

2*3*4 = 24
12/2 = 6
12/2/3 = 2

6/2 = 3
7/2 = 3
7.0/2.0 = 3.5

1000000000
1410065408
```

Code Tracing

```cpp
02_12.cpp ⊠
 1  #include<iostream>
 2  using namespace std;
 3
 4  // Go over code line by line!
 5
 6  int main()
 7  {
 8      cout<<"If your dream only includes you, it's too small\n\n";
 9
10      cout<<30+20+10-10-20-30<<endl;
11      cout<<"70/10"<<"\n";
12      cout<<80/10/2<<"\n";
13
14      cout<<"\nOpportunities don't happen. "
15          <<"You create them"
16          <<endl;
17
18      // All progress takes place outside the comfort zone.
19
20      /*
21          Character cannot be developed in ease and quiet. Only through
22              experience of trial and suffering can the soul be strengthened,
23                  ambition inspired, and success achieved
24      */
25
26      return 0;
27
28      cout<<"\n\nDo one thing every day that scares you";
29  }
30
```

- Pass over the code line by line
- Execute the line

```
<terminated> ztemp [C/C++ Application] /home/mousta
If your dream only includes you, it's too small

0
70/10
4

Opportunities don't happen. You create them
```

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."