

FAST

National University of Computer and Emerging Sciences Peshawar

OOP Lab # 2.5

C++ Local and Global Variables

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Programming



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Contents



1. Local Variables
2. Global Variables



Local and Global Variables

A scope is a region of the program and broadly speaking there are three places, where variables can be declared –

- Inside a function or a block which is called local variables.
- In the definition of function parameters which is called formal parameters.
- Outside of all functions which are called global variables.



Local Variables

- ❖ Local variables can be used only by statements that are inside that function or block of code.
- ❖ Local variables are not known to functions on their own.



Local Variable Example

```
#include <iostream>
using namespace std;
int main () {
    // Local variable declaration:
    int a, b;
    int c;

    // actual initialization
    a = 10;
    b = 20;
    c = a + b;

    cout << c;
    return 0;
}
```

Output

This will give the output:

30



Global Variable

- ❖ Global variables are defined outside of all the functions, usually on top of the program.
- ❖ The global variables will hold their value throughout the lifetime of your program.
- ❖ A global variable can be accessed by any function.



Global Variable Example

```
#include <iostream>
using namespace std;
// Global variable declaration:
int g;
int main () {
    // Local variable declaration:
    int a, b;

    // actual initialization
    a = 10;
    b = 20;
    g = a + b;

    cout << g;
    return 0;
}
```

Output

This will give the output:

30



Note

- ❖ A program can have the same name for local and global variables but the value of a local variable inside a function will take preference.
- ❖ For accessing the global variable with same name, you'll have to use the scope resolution operator.



Example

```
#include <iostream>
using namespace std;
// Global variable declaration:
int g = 20;
int main () {
    // Local variable declaration:
    int g = 10;

    cout<<"Local variable g: "<<g<<endl;    // Local
    cout<<"Global variable g: "<<::g<<endl; // Global
    return 0;
}
```

Output:

Local variable g: 10
Global variable g: 20

THANK YOU

