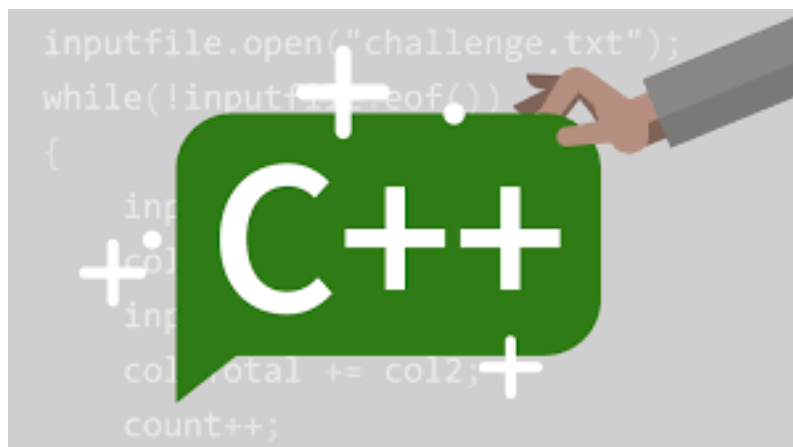# C++ STUDENT GUIDE

HANDS ON 1: My First Program

1. Get your hand dirty by following the code below!

```cpp
1   //We are writing a simple C++ program that prints "Hello World!" message.
2   /*
3   * Multiple line
4   * comment
5   */
6   #include<iostream>
7
8   //Single line comment
9   using namespace std;
10
11  //This is where the execution of program begins
12  int main()
13  {
14      // displays Hello World! on screen
15      cout<<"Hello World!";
16
17      return 0;
18  }
```

HANDS ON 2: Variable

2. Let us understand variable in c++,! Learn how to declare or "register"a variable.

```cpp
#include<iostream>

using namespace std;


int main()
{

    int num1=20, num2=100;
    /**********************************/
    //int num1,num2;
    //num1=20;
    //num2=100;
    cout<< num1;

    return 0;
}
```

HANDS ON 3: Global Variable

```cpp
1   #include <iostream>
2   using namespace std;
3   // This is a global variable
4   char myVar = 'A';
5   int main()
6   {
7       cout <<"Value of myVar: "<< myVar<<endl;
8       myVar='Z';
9       cout <<"Value of myVar: "<< myVar;
10      return 0;
11  }
12
```

HANDS ON 4: Local Variable

```cpp
1   #include <iostream>
2   using namespace std;
3
4   char myFuncn() {
5   // This is a local variable
6   char myVar = 'A';
7   }
8   int main()
9   {
10      cout <<"Value of myVar: "<< myVar<<endl;
11      myVar='Z';
12      cout <<"Value of myVar: "<< myVar;
13      return 0;
14  }
15
```

HANDS ON 5: Can local & global variable have the same name? Try to see what happen!

```cpp
1   #include <iostream>
2   using namespace std;
3   // This is a global variable
4   char myVar = 'A';
5   char myFuncn() {
6       // This is a local variable
7       char myVar = 'B';
8       return myVar;
9   }
10  int main()
11  {
12      cout <<"Funcn call: "<< myFuncn()<<endl;
13      cout <<"Value of myVar: "<< myVar<<endl;
14      myVar='Z';
15      cout <<"Funcn call: "<< myFuncn()<<endl;
16      cout <<"Value of myVar: "<< myVar<<endl;
17      return 0;
18  }
```

HANDS ON 6: Example of Arithmetic Operators

```cpp
#include <iostream>
using namespace std;
int main(){
    int num1 = 240;
    int num2 = 40;
    cout<<"num1 + num2: "<<(num1 + num2)<<endl;
    cout<<"num1 - num2: "<<(num1 - num2)<<endl;
    cout<<"num1 * num2: "<<(num1 * num2)<<endl;
    cout<<"num1 / num2: "<<(num1 / num2)<<endl;
    cout<<"num1 % num2: "<<(num1 % num2)<<endl;
    return 0;
}
```

HANDS ON 7: Example of Assignment Operators

```cpp
1   #include <iostream>
2   using namespace std;
3   int main(){
4     int num1 = 240;
5     int num2 = 40;
6     num2 = num1;
7     cout<<"= Output: "<<num2<<endl;
8     num2 += num1;
9     cout<<"+= Output: "<<num2<<endl;
10    num2 -= num1;
11    cout<<"-= Output: "<<num2<<endl;
12    num2 *= num1;
13    cout<<"*= Output: "<<num2<<endl;
14    num2 /= num1;
15    cout<<"/= Output: "<<num2<<endl;
16    num2 %= num1;
17    cout<<"%= Output: "<<num2<<endl;
18    return 0;
19  }
```