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

int main (int argc, char** argv){
    //Declearing variable
    char letter;

    //initializing variable
    letter = 'C';

    //declearing and initializing varibale
    int age = 28;

    //printing to the screen
    cout<<age;

    //Declearing more than one variables of the same data type
    int height, width, depth;

    // Variable Scope: global and local scope
    //Any variable inside certain block {}, is local to that block
    {
        float weight = 62.3;
        cout<<weight;//This perfectly print 62.3
        //Lets try accessing variable outside this block
        //which is basically global to this block, but local to main
        cout<<letter;   //This perfectly print C
     }
    //cout<<weight; this creates compile time error, because weight is
    //local  scope to the above block
}
```

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

int main (int argc, char** argv){
    //lets set long text using string type
    string text = "This is long text to be displayed on single line";
    cout<<text<<endl; //this prints one line

    //lets modify the string to display two lines
    text = "This is long text \n to be displayed on single line";
    cout<<text<<endl; //but this prints two lines because of \n

    //using \t for spacing one tab
    text = "This displays text with \t one tab space in between";
    cout<<text;
}
```

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Computer Science

Computer Programming Cheat Sheet **C++ Basics**

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

int main (int argc, char** argv){
    //Operators
        //Assignment Operators
        int x = 7; //assigning integer number to x
        int y = x; //assigning the value of x to y
        //Others
        x += 1; //This adds 1 to x, now x = 8
        x *= 2; //this multiplies x by two, x = 16
        //
        y %= 2; //puts the remainder of y/2 back to y.
        cout<<y<<endl;

    //Relational Operators: <, >, <=, >=, ==, !=
        bool isTrue = (5<=6); //checks if 5 is less or equal to 6 and assigns the result to isTrue
        cout<<isTrue<<endl; //prints 1, which means true

    //Logical Operators; !, ||, &&
        cout<<!isTrue<<endl;    //This nogates isTrue to false, which is 0
        //what is true and true ?
        bool checker = (true && true);  //True and true is always true
        cout<<checker<<endl;    //this prints 1, which is true
    //try another way
        checker = (10 > 6 && 6 < 5);
        cout<<checker<<endl;    //this prints 0, which means false because 6 is not less than 5
    //try using or
        checker = (10 > 6 || 6 < 5);
        cout<<checker<<endl;    //prints 1, because one of them is true
}
```

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

int main (int argc, char** argv){
    //increment Operators
        int counter = 0;
        counter++; //post-incremant
        cout<<counter<<endl; //prints 1
        //
        ++counter; //pre-incremant
        cout<<counter<<endl; //prints 2
        //
        //how about
        cout<<counter++ <<endl; /* What is the result???
            This is special because, it displays before incremanting
            It prints 2, again.
        */
        //Now,
        cout<<counter<<endl;    //This prints 3 because of the above incremant
    //The same is true for
    //decremants
    counter--; //which makes a counter 2
    cout<<counter;
}
```

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```cpp
#include <iostream>
#include <string>

using namespace std;

int main (int argc, char** argv){

    //Conditional operator using ? and :
    char sex = 'F';
    /*
        lets check this condition
        Check if sex is F or not
        */
    string result = (sex == 'F') ? "It is Female" : "It is Male";

    //
    cout<<result<<endl;
}
```

```cpp
#include <iostream>

using namespace std;

int main (int argc, char** argv){
    //sizeof Operator
    //This one is nice keywork in C++
    //Used to find the size of given value in number of bytes

    int x = 5;
    cout<<sizeof(x)<<endl; //This prints 4, which means 4 bytes where used to store the
                           //value of x in the memory
    //remember sizeof may returns different result based on the computer type

    cout<<sizeof(4.5)<<endl; //This returns 8
}
```

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