

# C++ cheat sheet

Foundation Course SS 2018

Dharmin B.

# Default Program

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    // I am a comment:). FYI, this code is useless!
```

```
    cout << "Hello, I am a bad programmer!" << endl;
```

```
    return 0;
```

```
}
```

# Variables

```
int radius = 5;
```

```
float pi = 3.14;
```

```
string greeting = "hello"; //(needs #include <string>)
```

```
int fibonacci[5] = {0, 1, 1, 2, 3};
```

```
int * pointer = &radius;
```

# Standard Input

```
cin >> variable_name;
```

## For string with whitespaces:

```
getline(cin, string_name);
```

# Functions

```
void print_something () {  
    cout << "Something" ;  
}
```

```
int add_num (int n1, int n2) {  
    int sum = n1 + n2;  
    return sum;  
}
```

# If else statement

```
if (coder == "good") {  
    code();  
    rule_world();  
}  
else if (coder == "Average") {  
    code();  
}  
else {  
    Die();  
}
```

# Switch

```
switch (time) {  
    case "morning" :  
        cout << "Guten Morgen";  
        break;  
    case "evening" :  
        cout << "Guten Abend";  
        break;  
    default :  
        cout << "Hallo";  
}
```

# Logical Operator

`||`      or

`&&`      and

`==`      equal

`!=`      not equal

`<`      less than

`>`      greater than

`<=`      less than or equal

`>=`      greater than or equal

# Increment operators

`++`      increment by one

`--`      decrement by one

`+= 5`      increment by 5

`-= 3`      decrement by 3

# While loop

```
int i = 0;
while (i < 10) {
    if (i % 2 == 0) {
        continue;
    }
    cout << i << endl;
    i++;
}
```

# For loop

```
for (int i = 0; i < 10; i++) {
    cout << i << endl;
}

for(int i = 0; i < 5; i++) {
    for (int j = 0; j < i; j++) {
        cout << "#";
    }
    cout << endl;
}
```

# Class

```
class foundation_course {  
    public:  
        foundation_course() {  
            cout << "Printing from constructor" << endl;  
        }  
        void cpp_lec_feedback() {  
            cout << "Boring. I knew better than him" << endl;  
        }  
    private :  
        string highlight = "Python class rocked!";  
}
```



# Class file and its header file

```
#include "Classname.h"
```

```
#include <iostream>
```

```
using namespace std;
```

```
Class_name :: Class_name() {  
    cout << "Inside constructor";  
}
```

```
void Class_name::print_hello() {  
    cout << "Hello"<< endl;  
}
```

```
#ifndef CLASSNAME_H_
```

```
#define CLASSNAME_H_
```

```
class Class_name {
```

```
public:
```

```
    Class_name();
```

```
    void print_hello();
```

```
};
```

```
#endif /* CLASSNAME_H_ */
```

# Object

```
Class_name fc;
```

```
cout << "Foundation class says " << fc.print_hello() << "\n";
```

Note : Whenever you want to use a class, include its header file. For example, if the above code is in `main`, you should put **#include** `"Classname.h"` at the top.

# Inheritance

```
class Parent {  
    public:  
        int a;  
}  
  
class Child : public Parent{  
    public:  
        void print_a() {  
            cout << a;  
        }  
}
```

# Polymorphism

In parent class :

```
virtual void print_a() {}
```

In child classes:

```
void print_a() { cout << a; }
```

In main (or wherever you are using objs):

```
Child c;  
Parent *p = &c;  
p->print_a();
```

# Writing to text file

```
#include <fstream>

ofstream fileObj;
fileObj.open("myFile.txt");
if (fileObj.is_open()) {
    fileObj << "Hello\n";
    fileObj.close();
}
else {
    cout << "Error!\n";
}
```

# Reading from text file

```
#include <fstream>

string s;
ifstream fileObj;
fileObj.open("myFile.txt");
if (fileObj.is_open()) {
    while (getline(fileObj, s)) {
        cout << s << endl;
    }
    fileObj.close();
}
else { cout << "Error!\n";
}
```

# Pseudo random number

```
#include <cstdlib>
```

```
#include <ctime>
```

```
srand(time(0));
```

```
cout << "Random number is " << rand()%10 << endl;
```

```
// rand() % n gives you a random number between 0 and n
```