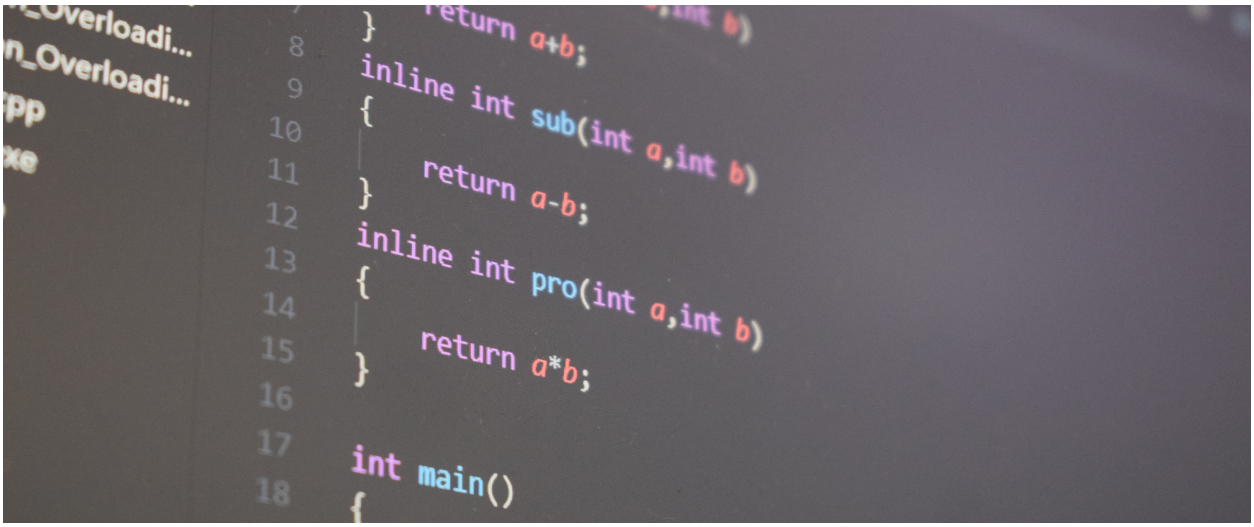

Basic Data Types C++

1. Variables and Data Types

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

int main() {
    // Declare a variable
    string greeting = "Hello, World!";

    // Numbers
    int num1 = 5;
    int num2 = 10;

    // Booleans
    bool isTrue = true;

    // Arrays
    int numbers[] = {1, 2, 3, 4, 5};

    // Structures
    struct Person {
        string name;
        int age;
        bool isStudent;
    };
    Person person = {"John", 25, false};

    return 0;
}
```

2. Conditional Statements

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

int main() {
    int temperature = 25;

    if (temperature > 30) {
        cout << "It's a hot day!" << endl;
    } else if (temperature >= 20 && temperature <= 30) {
        cout << "The weather is pleasant." << endl;
    } else {
        cout << "It's cold outside." << endl;
    }

    return 0;
}
```

3. Loops

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

int main() {
    // For loop
    for (int i = 0; i < 5; i++) {
        cout << "Iteration " << (i + 1) << endl;
    }

    // While loop
    int count = 0;
    while (count < 3) {
        cout << "Count: " << count << endl;
        count++;
    }

    return 0;
}
```

4. Functions

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

// Function declaration
string greet(string name) {
    return "Hello, " + name + "!";
}

int main() {
    // Function call
    string message = greet("Alice");
    cout << message << endl;

    return 0;
}
```

5. File Handling

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

int main() {
    // Writing to a file
    ofstream outFile("example.txt");
    if (outFile.is_open()) {
        outFile << "This is some text in a file." << endl;
        outFile.close();
    } else {
        cout << "Unable to open the file." << endl;
    }

    // Reading from a file
    ifstream inFile("example.txt");
    if (inFile.is_open()) {
        string line;
        while (getline(inFile, line)) {
            cout << line << endl;
        }
        inFile.close();
    } else {
        cout << "Unable to open the file." << endl;
    }

    return 0;
}
```

6. Network (using Boost.Asio)

```cpp
#include <iostream>
#include <boost/asio.hpp>
using namespace std;

int main() {
    // Boost.Asio code for simple TCP client/server communication
    // (Note: You need to install Boost C++ Libraries)

    return 0;
}
```