

# INTRODUCTION

Compilers, IDEs, Hello World

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Name	OS	License	C++11	C++14	C++17
Intel	Most	Proprietary	Partial	Partial	No
MS Visual C++	Most	Proprietary	Yes	Partial	Partial
Clang	All	MIT-like	Yes	Yes	Partial
GCC	All <sup>1</sup>	GPLv3	Yes	Yes	Partial
Source					

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<sup>1</sup>Using external software for Windows

Name	OS	License	Autocomplete	Tools
Visual Studio	Windows	Proprietary	Complex	Most <sup>2</sup>
Eclipse CDT	Java	EPL	Complex	Most <sup>2</sup>
Xcode	OS X	Proprietary	Complex	Most <sup>2</sup>
CLion	Java	Proprietary	Complex	Many <sup>3</sup>
Qt Creator	All	LGPL	Complex	Many <sup>4</sup>
Geany	All	GPL	Simple	Class Browser
Source				

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<sup>2</sup>GUI builder, class browser, toolchain, debugger, profiler, refactoring, code coverage

<sup>3</sup>Except for code coverage, GUI builder, profiler

<sup>4</sup>Except for code coverage

# HELLO WORLD

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```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     cout << "Hello World!" << endl;
6     return 0;
7 }
```

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Compile with:

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```
g++ -std=c++14 -Wall -Wextra hello_world.cpp
```

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```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 int main() {
6     cout << "Please enter your name: ";
7     string name;
8     cin >> name;
9     cout << "Hello " << name << "!" << endl;
10    return 0;
11 }
```

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```
1 // string
2 string a = "abcde";
3 char b = a[4];
4 char c;
5 c = 'e';
6
7 // integer
8 int d = 42;
9
10 // float
11 float e = 13.37;
```

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```
1 // similar to int
2 short f = 5;
3 long g = 58123745931245832458L;
4
5 // similar to double
6 double h = 123456789.123456789;
7
8 // int again...
9 unsigned int i = 1337U;
```

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