Top IDEs for C or C++ Developers in 2020

* Visual Studio Code
* Eclipse
* NetBeans
* Sublime Text
* Atom
* Code::Blocks
* CodeLite
* CodeWarrior
* Dev-C++
* MinGW

IDE

* Visual studio code
* <https://code.visualstudio.com/download>

Compiler

* MinGW gcc compiler
* <https://sourceforge.net/projects/mingw-w64/>

Extensions

* C/C++ IntelliSense

Installations

* Install visual studio code
* Install MinGW
* Install C/C++ IntelliSense

Add the path of gcc to Environment Variables

* Right click on ‘This PC’ -> click on ‘Properties’ -> click on ‘Advanced system settings’ -> click on ‘Environment variables’ -> click on ‘Path’ -> click on ‘Edit’ -> put a semicolon in the end and add the below path after the semicolon
* C:\Program Files (x86)\mingw-w64\i686-8.1.0-posix-dwarf-rt\_v6-rev0\mingw32\bin

Visual studio code

* Explorer
* Search
* Source control
* Run
* Extensions

hello.c

#include <stdio.h>

int main()

{

    printf("Hello World");

    return 0;

}

Commands to run the program

gcc hello.c

.\a.exe

**Exercise:** Write a program that prints your name and address

**Exercise:** Write a program that finds the circumference and area of a circle

**Exercise:** Write a program to declare an integer, float, a character variable and also a character array. Initialize the numeric and character variable

Escape sequences

|  |  |  |  |
| --- | --- | --- | --- |
| **Character**  | **Escape sequence** | **ASCII value** | **Result**  |
| Bell alert | \a | 007 | Beep sound |
| Backspace | \b | 008 | Moves previous position |
| Horizontal tab | \t | 009 | Moves next horizontal tab |
| Vertical tab | \v | 011 | Moves next vertical tab |
| New line | \n | 010 | Moves next line |
| Form feed | \f | 012 | Moves initial position of next page |
| Carriage return | \r | 013 | Moves beginning of the line |
| Quotation mark | \” | 034 | Present double quotes |
| Apostrophe  | \’ | 039 | Present apostrophe |
| Question mark | \? | 063 | Present question mark |
| Back slash | \\ | 092 | Present back slash |
| Null  | \0 | 000 | Null  |

C Data Types

|  |
| --- |
| **C Data Types** |
| Primary | User Defined | Derived | Empty |
| charintfloatdouble  | typedef  | arrayspointerstructuresunion  | void  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **Memory byte** | **Range**  | **Control string**  | **Example**  |
| int | 2 bytes | -32,768 to +32,768 | %d or %i | int a=39; |
| char | 1 byte | -128 to +127 | %c | char s=’n’; |
| float | 4 bytes | 3.4E-38 to 3.4E+38 | %f or %g | float f=29.77; |
| double  | 8 bytes | 1.7E-308 to 1.7E+308 | %lf | double d=2767888; |

**Unsigned** Integers are always non-negative (zero or positive).

|  |
| --- |
| **INTEGER TYPE** |
| signed | unsigned |
| int | unsigned int |
| short int | unsigned short int |
| long int | unsigned long int |
| **CHARACTER TYPE** |
| char | signed char | unsigned char |
| **FLOAT TYPE** |
| float | double | long double |
| **EMPTY DATA TYPE** |
| void |

|  |  |  |  |
| --- | --- | --- | --- |
| **Type**  | **Size (bytes)** | **Range**  | **Control string**  |
| char or signed char | 1 | -128 to 127 | %c |
| unsigned char | 1 | 0 to 255 | %c |
| int or signed int | 2 | -32,768 to 32,767 | %d or %i |
| unsigned int | 2 | 0 to 65,535 | %u |
| short int or signed short int | 1 | -128 to 127 | %d or %i |
| unsigned short int | 1 | 0 to 255 | %d or %i |
| long int or signed long int | 4 | -2,147,483,648 to 2,147,483,647 | %ld |
| unsigned long int | 4 | 0 to 4,294,967,295 | %lu |
| float | 4 | 3.4E-38 to 3.4E+38 | %f or %g |
| double | 8 | 1.7E-308 to 1.7E+308 | %lf |
| long double | 10 | 3.4E-4932 to 1.1E+4932 | %lf |