

1. Can this language be installed on any operating system? Which ones (Windows, Mac, Unix/Linux)? If not, what are its limitations?

C++ is not installed on any operating system. This is due to the fact that C++ is a compiled language, and thus, as long as you have a compiler for C++ you will have the ability to compile, run, and even debug your program from your computer's command line. It should be noted that you can choose to use an IDE that will essentially "encompass" the compiler and provide you with the ability to write, edit, test, etc. your C++ programs.

Reference:

<https://www.cs.odu.edu/~zeil/cs250PreTest/latest/Public/installingACompiler/>

2. Give instructions for how to install the language.

Since this language is not installed, there are no instructions to give.

3. Where do you write programs in this language (e.g. in a text editor, a special editor just for that language, or something else?)

You can write C++ programs in a text editor, which is a program that you can use to write and edit text. However, you must remember to save the file with the .cpp extension, which is what tells the compiler that you are giving it a file that has a C++ program written inside. Additionally, this language can also be written in an IDE(or Integrated Development Environment).

Reference:

<https://www.geeksforgeeks.org/setting-c-development-environment/>

a. Related: Does this language come with a recommended programming environment? What is it? If not, how did you pick the one that you'll be using?

There are a few recommended programming environments for C++. These are as follows: Eclipse, Code::Blocks, Netbeans, Qt Creator, Dev C++, C++ Builder, Visual Studio, CLion, Vim, and CodeLite. Out of this list, I chose to download and use Visual Studio 2017. I made this decision based on the recommendation of another programmer I am acquainted with. Additionally, I liked that it was a Microsoft product because I trust that brand and use almost all of their software on my personal computer.

References:

<https://www.slant.co/topics/796/~best-ides-for-c-on-windows>

<https://codecondo.com/top-10-ide-for-c-and-cplusplus-for-programmers/>
<https://en.softonic.com/solutions/what-are-the-best-ide-for-c-and-c>

4. How do you run programs that you write?

You can compile and run your C++ program in Visual Studio 2017 by clicking on the green triangle that appears in the tool bar. This is called the Local Windows Debugger. Alternatively, you can also press the F5 key on your keyboard.

Reference:

<https://smallbusiness.chron.com/execute-cpp-file-windows-28480.html>

5. Is there a lot of boiler-plate code needed to write a program (e.g. Java)? Or can you just start writing (e.g. Python and Perl)?

There is not a lot of boiler-plate code needed to write a program in C++, thus, for the most part, you are able to just start writing. With that said, you should always include an `int main() { }` function in your program, as this is what is executed when it is run.

Additionally, if you decide to use precompiled headers, which can help reduce the time it takes to compile your code, you will need to also write `"#include "pch.h"` at the top of your program. This can be disabled if you wish by right-clicking on your project name, selecting "Properties" from the drop-down menu, choosing "C/C++", and then selecting "Precompiled Headers" from the given options. Next, you can use the little arrow next to the "Precompiled Header" option to select "Not Using Precompiled Headers", then you simply need to click "Apply" and then "OK". You should note that you will need to do this for each individual project you create.

References:

http://www.cplusplus.com/doc/tutorial/program_structure/

<http://www.drdobbs.com/cpp/precompiled-headers-normal-c-semantics/184404800>

6. How do you write comments in your language?

To write single-line comments in C++ you use `"//"`, which lets the compiler know that everything that comes after, up until the end of the line, is to be ignored. It is good practice to use this kind of comment to make a quick comment about a line of code. To do multi-line comments in C++ you use `"/* */"`, placing your comment between the two. This will tell the compiler to ignore everything between the symbols. Additionally, when writing comments you should keep in mind that they should be used to describe what the code is trying to accomplish and how it is going to accomplish it.

Reference:

<https://www.learncpp.com/cpp-tutorial/comments/>