

## CS330: Programming Language Project (PLP)

### Assignment 1: Language selection and overview

Due before class on Wednesday, January 30,  
2019

For this assignment, choose the programming language that you want to use for the PLP. This is the language that you will use for the remainder of the semester and for your final project, so make sure that **good** documentation is available, either in print or electronic form, otherwise you'll be struggling.

You must check with me to approve your language selection.

Only 2 students can work on the *same* language; signing up is *first-come, first-serve*! Please choose your language within a week of the start of the course. The list of claimed languages is in the [course page](#) on Moodle. I will keep the list updated as choices are approved and confirmed.

Assignment 1 is all about learning the basic properties of your language and what it's used for. Select your language and answer the following questions about it:

1. What is the name of your language?

C++

2. When/where was it created and by whom? Was it developed to address a particular computing problem or need?

It was first released in 1985 by Bjarne Stroustrup. He was working with Stimula, which was helpful for large software development, but too slow to run. The alternative, BCPL, was fast but not advanced enough for the programming he needed. By adding Stimula features to C he created "C with Classes" in 1979, which was renamed to C++ in 1983.

3. Is it primarily procedural, functional, scripted, object-oriented, or a combination of these? Or something else?

C++ has imperative, object-oriented and generic features and procedural, functional, and scripted features.

4. Is it compiled or interpreted, or a combination? Does it use a virtual machine?

C++ is compiled.

5. What types of applications is your language primarily used for (e.g.: web development, video games, mobile devices, back-end services, operations engineering, etc.). If your language is multi-purpose, provide some examples of different applications it has been used for.

C++ is multi purpose and has been used for operating systems, libraries, banking applications, and cloud systems.

6. Search on Github.com for your language: what are the 3 most popular projects (the ones with the most stars) involving your language?

C-based gRPC including C++(19.3k stars), xgboost Scalable, Portable and Distributed Gradient Boosting (GBDT, GBRT or GBM) Library(14.7k stars), and Dear ImGui: Bloat-free Immediate Mode Graphical User interface for C++ with minimal dependencies(13.5k stars).

7. Where will you get information about this language when it's time to start programming in it?

Geeksforgeeks and codecademy to start, I'm looking for a textbook that is not too expensive and will actually be helpful.

At the end of your assignment, provide a list of the names of books, website URLs or any other resources (e.g. style guidelines) that relate to your language in particular. I will review these before approving your selection.

<https://google.github.io/styleguide/cppguide.html>

<https://www.geeksforgeeks.org/c-plus-plus/>

Create a GitHub repository, place your answers to these questions there and email me its link. Make sure that your answers are clear, accurate and fully-formed; remember that these repositories are *public*.

**Creating a GitHub Repository** <https://github.com/>  
<https://git-scm.com/book/en/v2/GitHub-Account-Setup-and-Configuration>

You might also create local git repositories that work in conjunction with your remote GitHub repositories. Since *you* are the only contributor to *your* work, local version control is really not necessary, but the experience will be useful for you as a software engineer, since every company that develops software uses a Version Control System (VCS). Your choice.

**Creating a Local Git Repository**  
<https://git-scm.com/book/en/v2/Git-Basics-Getting-a-Git-Repository>

Explain the reasoning behind your answers as much as possible. If there is no clear-cut answer to a question, explain why. And cite your sources!