

WHY PYTHON?

I. Excellent Learning Language

1. Simple Syntax (easy to read and write)

C++

```
#include <iostream.h>
int main()
{
    cout << "Hello World!\n";
}
```

Python

```
print "Hello World!\n";
```

(No variable delarations, no worries about pointers, excellent imbedded data structures)

2. OOP: Object-oriented Programming Language

3. Similar in structure to C++, Java - also OOP

(good start before picking up other more complex languages.)

4. More time spent programming/ Less time spent debugging

5. The Interpreter: Test code quickly and easily! No intermediate compiling and linking steps.

II. Useful and Powerful well beyond class

1. Powerful: Has simplicity of scripting languages along with advanced programming tools. (see pg. 5 of Learning Python)
2. Flexible: Huge variety of tasks and very scalable (pg. 7-8).
3. USED by dozens of companies and thousands of programmers.
A vibrant growing language.
4. Mixable: Python programs can easily be glued (and glue together) components written in other languages (C, C++, Fortran, Java)

III. Other Reasons

Free, portable, great for biology and data management. Fast for biologists.

IV. When not to use it?

When speed and security are real issues. Not declaring any variable types and avoiding memory issues is nice, but compiled languages are much faster! Also, no real private variables (you C++ types!).

Chuck will go into more on this.

TIPS: Making Programming Fun!

I. Puzzles and Problem Solving: A constant creative process

II. Avoid Frustration with the Computer

III. YOU are in Control!

A devoted (and obstinate) servant awaits *precise* commands.

IV. WORK TOGETHER

- (1) Work with your neighbors inside and outside of class
- (2) Bang your head against a problem only so long
- (3) Use the reference books often: Learning Python, Web documentation
- (4) If you are kicking Python butt, helping others will reinforce your knowledge.

Note: variety of ability levels in - focused on novices
Starts easy, gets harder from here. Today, get your feet wet. Practice, practice, practice!