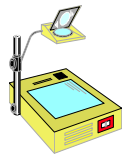
CpSc 372
Getting started with Python



Introduction

Summary

- It's OO: polymorphism, operator overloading, multiple inheritance, dynamic typing
- It's free, but supported
- It's portable: Linux, Windows, Mac, Amiga, etc.
- Powerful: large toolset
- Lots of library utilities
- Automatic memory management
- Mixable: C, C++ or Java
- Easy to use
- Easy to learn

Python on the job

- System utilities
- GUIs: TK, Tkinter, Qt
- Rapid prototyping
- Internet scripting: use with CGI
- Numeric programming: NumPy
- Database programming: Pickle module & SQL

Python in Commercial Products

- Red Hat uses Python in its install tools
- Microsoft has shipped a product partially written in Python
- Infoseek uses Python in web search products
- Yahoo uses Python in internet services
- NASA uses Python for mission-control system implementation
- Lawrence Livermore Labs for numeric processing
- Industrial Light & Magic for commercial grade animation

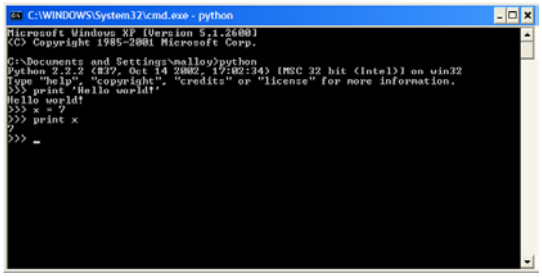
Compared to other languages

- Perl, Tcl, Java, C++:
  - Cleaner syntax than perl and much easier to read
  - More powerful than Tcl
  - Doesn't compare to Java & C++:
    - They are general purpose systems languages
    - Python is for scripting & rapid prototyping

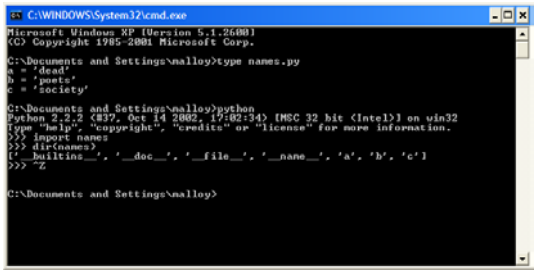
How to run Python

- Interactively (it's interpreted)
- As unix-style script files
- Embedded in another system
- Platform-specific launching methods

Interactive command line

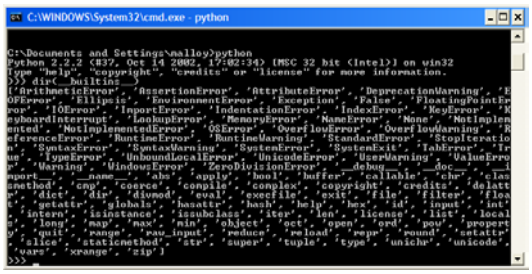


dir() function



dir() is a system function that returns all the names in the Current namespace. E.g., __name__ is current module.

__builtins__



Environment variables

- **PATH**: lists a set of directories that the operating system searches for executable programs. Should include directory where python interpreter lives
- **PYTHONPATH**: where the module files live when you import them into a program. Directories that Python searches
- **PYTHONSTARTUP**: code that gets executed automatically when start python interpreter