Debugging
Profiling
Parallel Computing

Practical Introduction to Programming for Scientists - Lecture 14

The Last Lecture
Debugging

- print statements?
- traceback module: print_exc()
Debuggers

- http://wiki.python.org/moin/PythonDebuggers
- Built in IDLE (broken on Mac 10.6 system python)
- http://www-pcmdi.llnl.gov/svn/repository/cdat/trunk/Packages/pydebug/Lib/pydebug.py
Profiling

- 3 built-in profilers
  - profile, cProfile, hotshot
  - python -mcProfile script.py
- 'C' level profilers
  - valgrind/cachegrind (linux)
  - dtrace (mac)
Parallel Processing

- http://wiki.python.org/moin/ParallelProcessing
- Shared Memory (SMP)
  - Threads
  - OpenMP (in C)
- Distributed Processing (clusters)
  - MPI
More on Threads

- import threading
- thr=threading.Thread(target=fn,args=(...))
- thr.start()
- thr.join()
- Python threads share global namespace
- Beware the global interpreter lock