



Learning to Program With Python – Part 1



Computers, Languages, and Tools: Saying “Hello”

Based on the book:

Snake Wrangling for Kids, Learning to Program with Python
by Jason R. Briggs

(Version 0.7.7-python2.7, modified by SJL)

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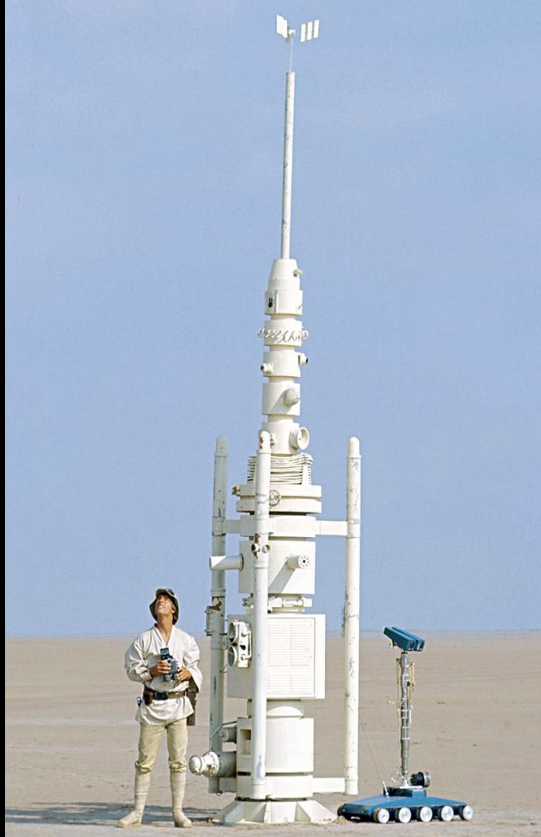
Computers and Languages



- What is a computer?
 - Abacus? Calculator? Watch? Phone? Tablet?
 - Game Console? Laptop? Desktop? HAL 9000?
- Languages
 - Humans and Computers
 - Binary language of moisture “vaporators”
 - Number systems and representations
 - Bits and bytes, text and binary
 - Machine and Programming Languages
- Computers and Intelligence
 - Can animals think?
 - Can computers think?

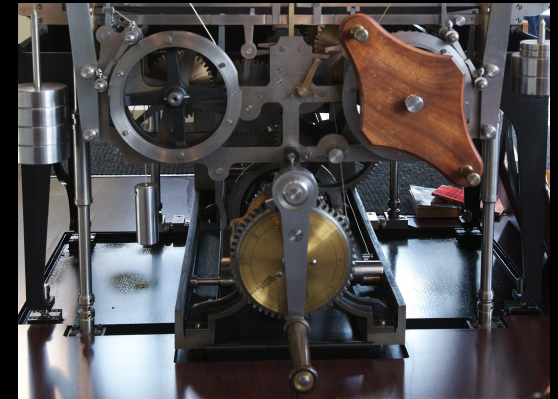
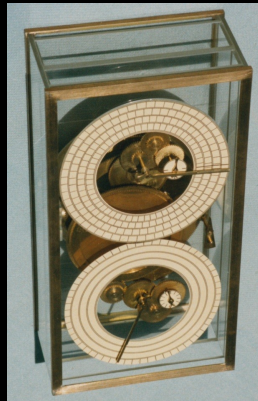
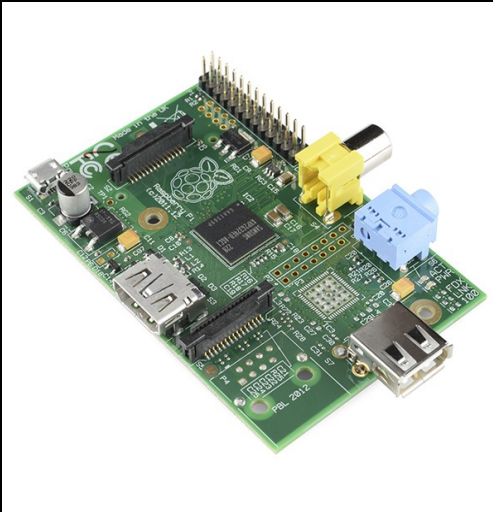
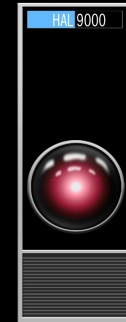


Moisture Vaporators



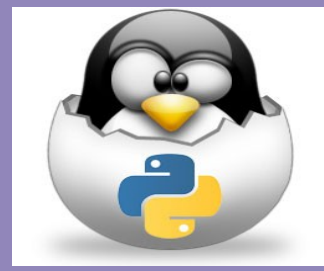


Which of these is a computer?





Computers and Languages cont.



- Files and Encodings
 - ASCII, Binary, Octal, Decimal, Hexadecimal
- Computer Languages and “Flavors”
 - Machine and Assembly Languages
 - Processors and Architecture
 - High Level Languages
 - Compiled vs. Interpreted
 - 1st “modern” language: FORTRAN (1954)
 - ALGOL, LISP (1958)
 - Then A, B, C, D, C++, C#, perl, Java, SmallTalk
 - COBOL, SNOBOL, ruby, lua, vala, scala, clojure...
 - “Human” Programming Languages
 - Ada (1st standard published 1983)
 - Python (1st implementation 1989)



Programming Language Tools



- The Language Files
 - Compiler/interpreter, libraries, other components
 - /usr/lib/python/... (core python, site-packages, etc)
- Programmer's Editor
 - Text editor with special features for software development (not a word processor)
 - Examples: **gedit**, nano, kate, gvim, emacs, nedit, scite
- Shell / Terminal Emulator
 - A place to type commands, like a DOS prompt only better (some shells are special, eg: python, pycrust)
 - Open **Terminal Emulator**, type "python" then Ctrl-D
- Integrated Development Environment (IDE)
 - Like a fancy editor, with project interface, object browsing
 - Examples: **geany**, code-blocks, eclipse, anjuta



Writing Your First Program in Python



- Open Terminal Emulator (bash shell)

- At the “\$” prompt, type:

```
$ python <enter>
```

- At the “>>>” prompt, type:

```
>>> print ("Hello, world!") <enter>
```

```
Hello, world!
```

- Now write it as a Python program

- Open your editor and type:

```
print ("Hello, world!")
```

- Save the file as “hello.py”
 - At the “\$” prompt, type”

```
$ python hello.py
```

- Congratulations, you just wrote a Python program!



What Does /. Say?



What programming language will earn you the best salary over time?

- According to Burning Glass and a Brookings Institution economist, Ruby on Rails, Objective-C, and **Python** are all programming skills that will earn you more than \$100,000 per year.
- Tech-industry analyst firm RedMonk's list of most-used languages: Java/JavaScript, PHP, **Python**, C#, and C++/Ruby
- **Python** was the one programming language to appear on Dice's recent list of the fastest-growing tech skills
- **Python** is a staple language in college-level computer-science courses, and has repeatedly topped the lists of popular programming languages as compiled by TIOBE Software and others.

<http://developers.slashdot.org/story/14/12/03/177214/which-programming-language-pays-the-best-probably-python>



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