



# 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)*

*Presented by*

*Steve Arnold\*, Principal Scientist VCT Labs*

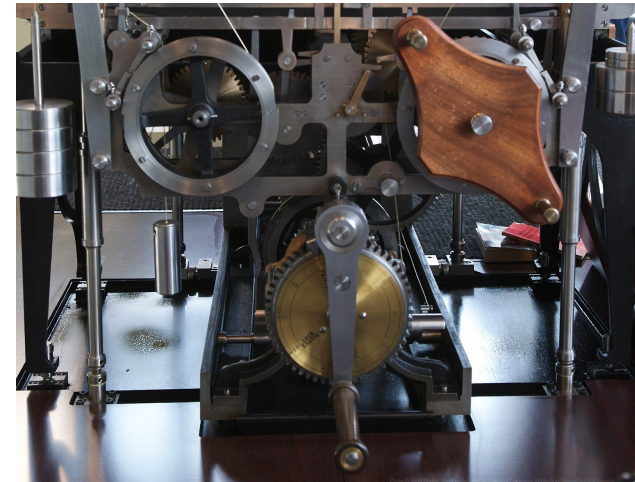
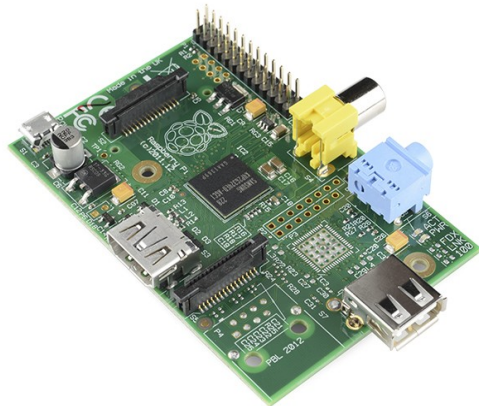
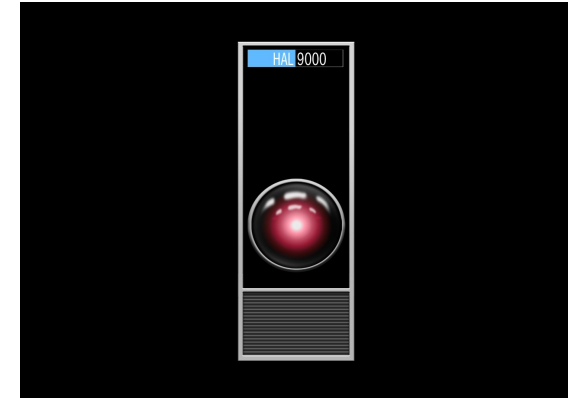
*Stephanie Lockwood-Childs\*, President VCT Labs*

*Nick Lockwood, Senior Engineer, VCT Labs*

*(\* also open source Gentoo Linux / Yocto developers)*



# Which of these is a computer?





# Can Computers 'Talk'?



## *Computers and Languages*

**Number systems and  
representations**

**Bits and bytes,**

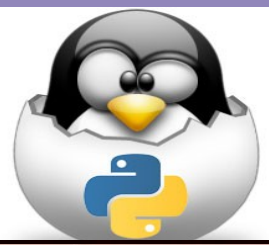
**Text and binary**

**Machine Languages**

**Programming Languages**



# The Binary Language of Moisture Vaporators





# Computers and Languages cont.



## **Machine and Assembly Languages**

Processors and Architecture

## **High Level Languages**

Compilers and Interpreters

FORTRAN

ALGOL, LISP

Then A, B, C, D, C++, C#, Perl, Java,  
etc

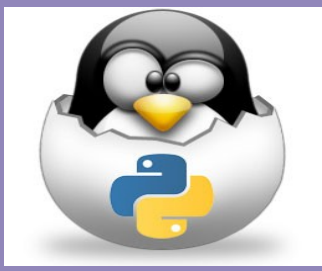
## **“Human” Programming Languages**

Ada

Python



# Can Computers Think?



*What do you think?*  
*Are computers intelligent?*



# Programming Language Tools



## **The Language Files**

Compiler/interpreter, libraries, other components

## **Programmer's Editor**

Text editor with special features for software development (not a word processor!)



# Programming Language Tools



## **Shell / Terminal Emulator**

A place to type commands

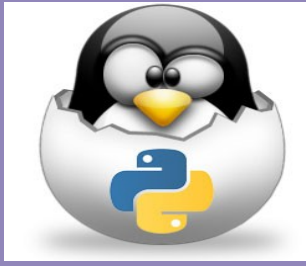
Like a DOS prompt only better

Special shells, eg: python, pycrust





# Programming Language Tools



## **Integrated Development Environment (IDE)**

Like a fancy editor, with project interface,  
compilers

Can provide useful language-sensitive features

Can also require lots of system resources



# Writing Your First Program in Python



Login and launch Terminal Emulator (bash shell)

At the “\$” prompt, type:

```
$ python <enter>
```

At the “>>>” prompt, type:

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

You should see the following:

```
Hello, world!
```



# Now, as a Python program



Open your editor and type:

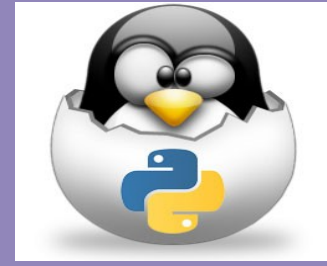
```
print ("Hello, world!")
```

Save the file as “hello.py”

At the “\$” prompt, type”

```
$ python hello.py
```

Congratulations, you just wrote a Python program!



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