

Networked Programs

Chapter 12



Python for Everybody www.py4e.com

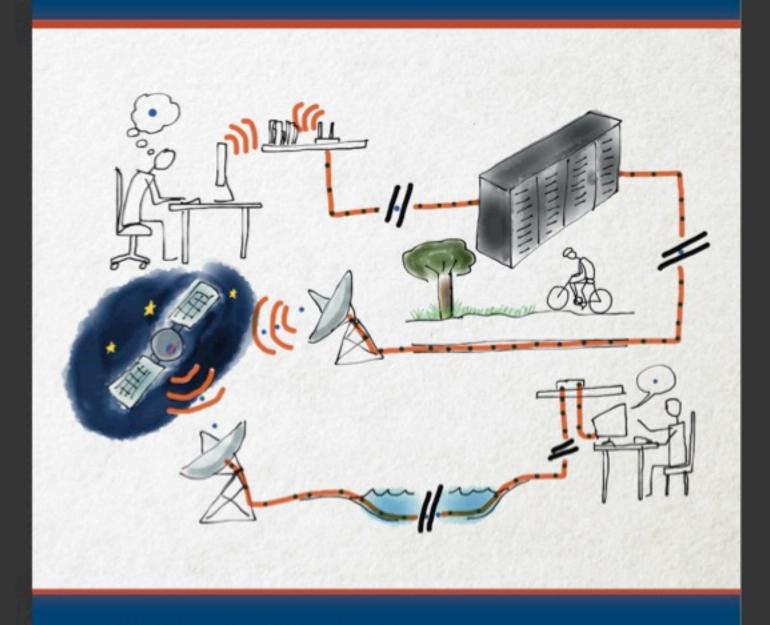




A Free Book on Network Architecture

If you find this topic area interesting and/or need more detail www.net-intro.com

Introduction to Networking HOW THE INTERNET WORKS

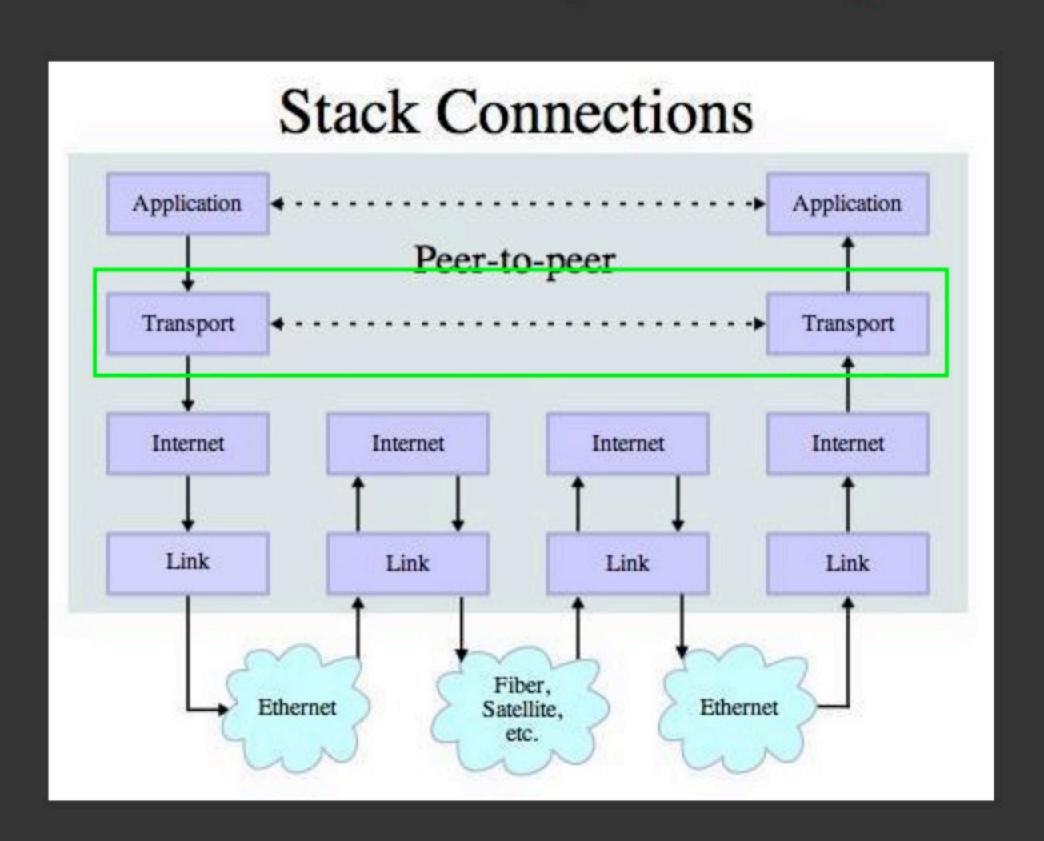


BY Charles R. Severance
ILLUSTRATIONS BY: MAURO TOSELLI

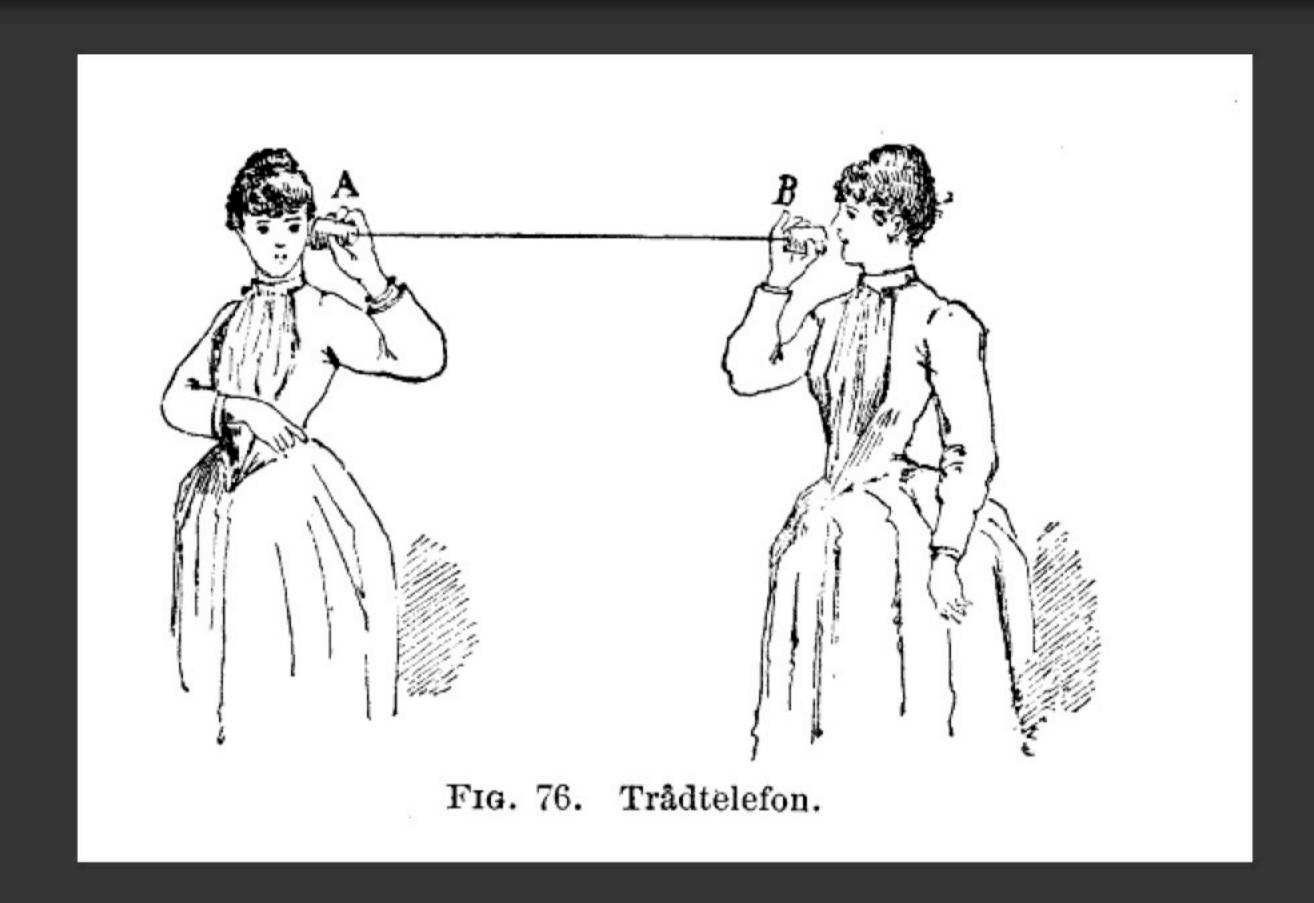


Transport Control Protocol (TCP)

- Built on top of IP (Internet Protocol)
- Assumes IP might lose some data stores and retransmits data if it seems to be lost
- Handles "flow control" using a transmit window
- Provides a nice reliable pipe



Source: http://en.wikipedia.org/wiki/Internet_Protocol_Suite







http://www.flickr.com/photos/kitcowan/2103850699/



TCP Connections / Sockets

"In computer networking, an Internet socket or network socket is an endpoint of a bidirectional inter-process communication flow across an Internet Protocol-based computer network, such as the Internet."



http://en.wikipedia.org/wiki/Internet_socket

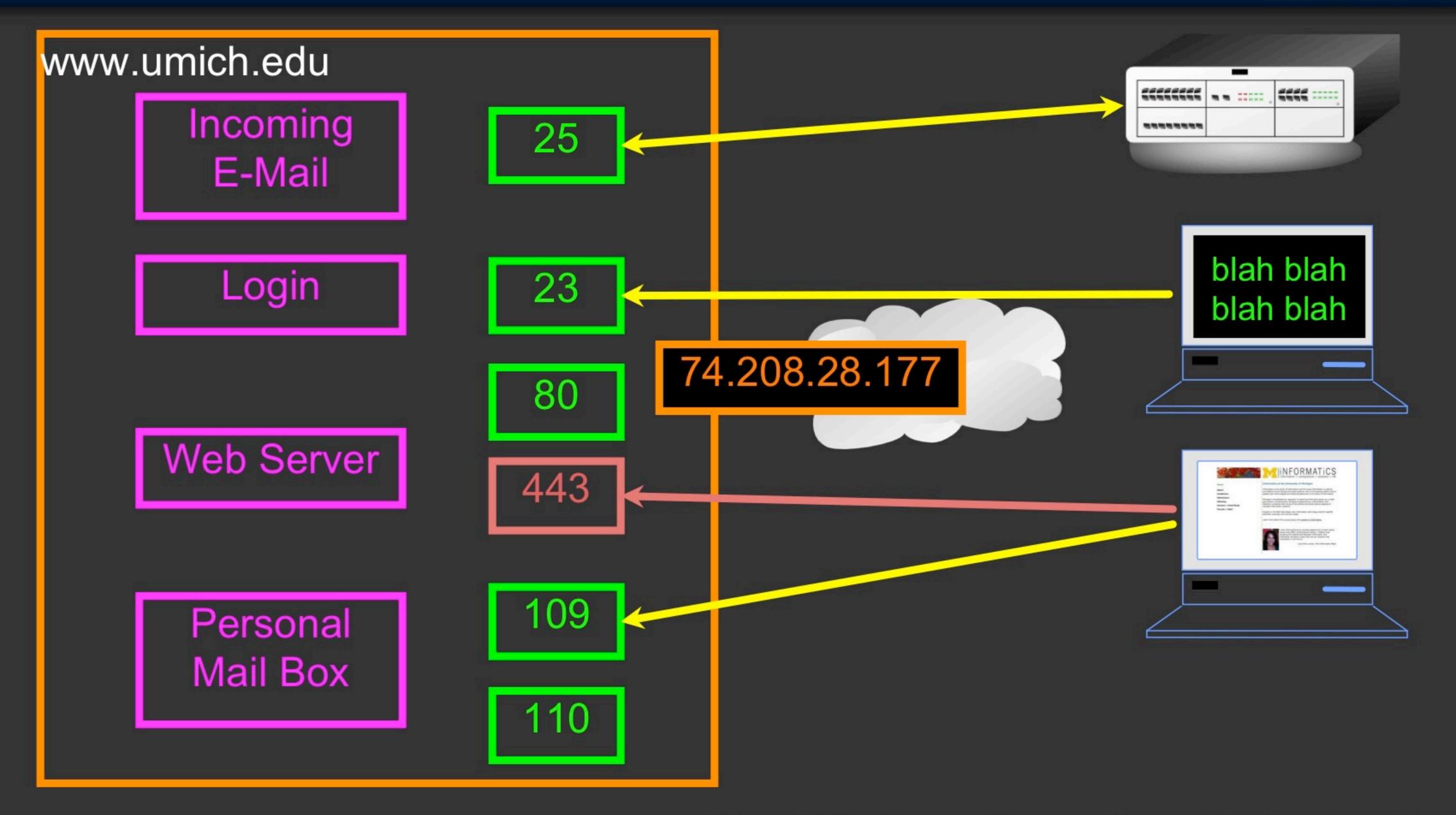


TCP Port Numbers

- A port is an application-specific or process-specific software communications endpoint
- It allows multiple networked applications to coexist on the same server.
- There is a list of well-known TCP port numbers

http://en.wikipedia.org/wiki/TCP and UDP port





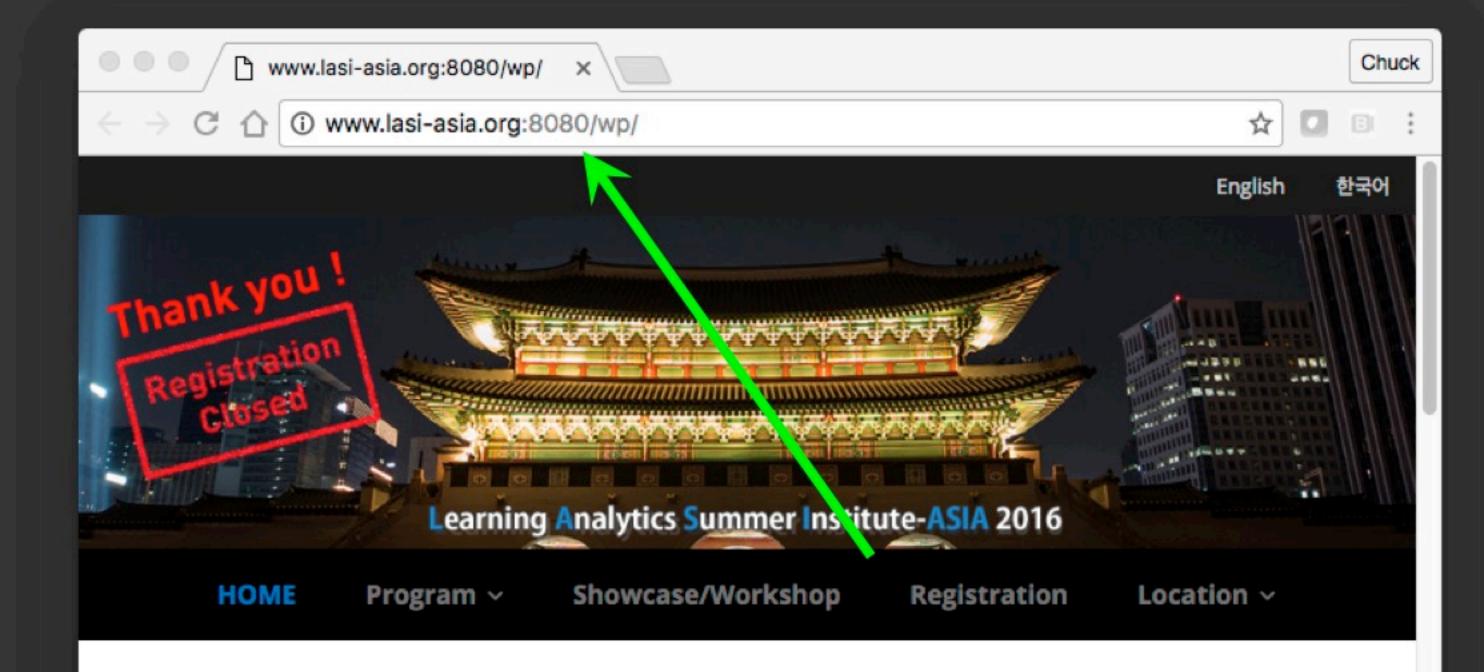


Common TCP Ports

- Telnet (23) Login
- SSH (22) Secure Login
- HTTP (80)
- HTTPS (443) Secure
- SMTP (25) (Mail)

- IMAP (143/220/993) Mail Retrieval
- POP (109/110) MailRetrieval
- DNS (53) Domain Name
- FTP (21) File Transfer

http://en.wikipedia.org/wiki/List of TCP and UDP port numbers



The increasing amount of data being generated from learning environments provides new opportunities to support learning, education and training (LET) in a number of new ways through learning analytics. International organizations and societies, such as ISO/IEC JTC1 SC36 (Information Technology for Learning, Education and Training), IMS Global Learning Consortium, LACE (Learning Analytics Community Exchange) project, and SoLAR (Society of Learning Analytics Research), have conducted research and development emerging technologies and educational models related to learning analytics. Thanks to efforts of global communities data APIs for learning analytics almost reach matured stage, but there is still concern learning analytics model and scale of the services.

Sometimes we see the port number in the URL if the web server is running on a "non-standard" port.



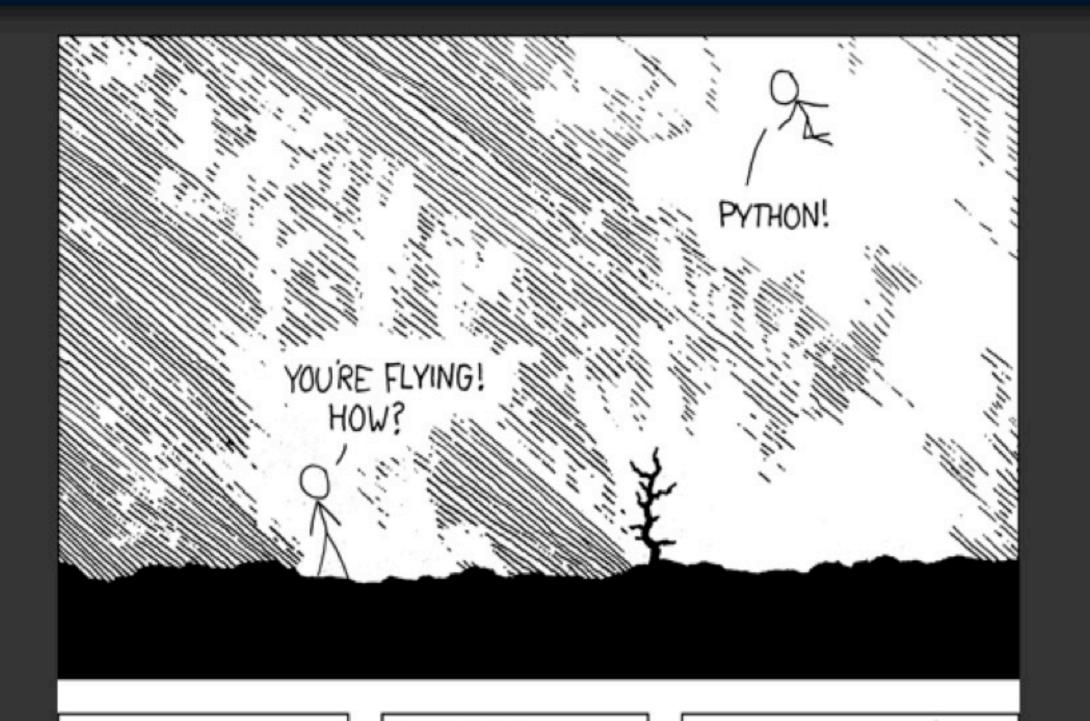
Sockets in Python

Python has built-in support for TCP Sockets

```
import socket
mysock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
mysock.connect( ('data.pr4e.org', 80) )
Host
Port
```

http://docs.python.org/library/socket.html

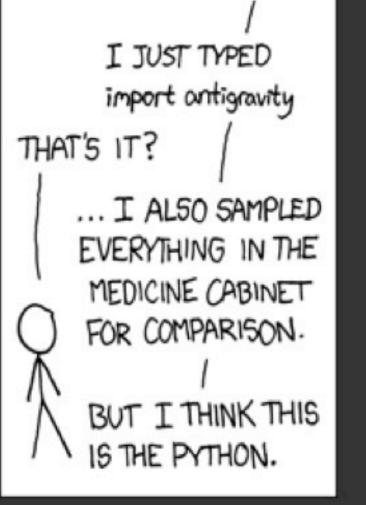




http://xkcd.com/353/









Communicating on Sockets in Python





Acknowledgements / Contributions



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