First Principles: Data Hiding, Modularity, Abstraction

1. Time: Afternoon
2. Lecture:
   1. No Lecture; hands on programming in Python
3. Activities
   1. Activity: Basic programming in Python [1.5 hours]
      1. Hello World
         1. See hello.py
      2. Hello <user>
         1. Raw input
         2. From command line using sys library
         3. See hello\_name.py
            1. Adapt this to use sys.argv[1]
      3. Control structures
         1. If statements
            1. See if.py
         2. Loops
            1. For loops

See for.py

* + 1. Functions
       1. User defined functions; modularity
       2. See function.py
    2. Sockets
       1. Client-side sockets
       2. Server side sockets
       3. Writing an HTTP client and server
          1. See server\_socket.py
          2. See client\_socket.py
  1. Activity: Writing a transposition cipher program to encrypt and decrypt automatically [1.5 hour]
     1. Inspect this with Wireshark to observe the data being encrypted in transit
     2. See cipher\_client.py and cipher\_server.py