I/O and File "Gymnastics"

Q1. Create an ssh tunnel from this computer to a service that is visible from another ssh-capable computer (but, of course, not necessarily visible from the computer you're using). Then, access that service from your computer through localhost and the tunneled port number.
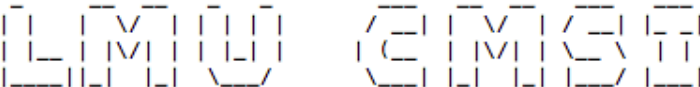
A1.

```
Abduls-MacBook-Pro:~ AbdulZaid$ ssh aalzaid1@my.cs.lmu.edu
aalzaid1@my.cs.lmu.edu's password:
Welcome to Ubuntu 11.10 (GNU/Linux 3.0.0-12-server x86_64)

 * Documentation:  https://help.ubuntu.com/11.10/serverguide/C

   System information as of Tue Feb  4 22:27:11 PST 2014

   System load:   0.0            Processes:           139
   Usage of /home: 1.4% of 45.83GB  Users logged in:     5
   Memory usage:  25%            IP address for eth0: 157.242.71.21
   Swap usage:    0%

 Graph this data and manage this system at https://landscape.canonical.com/
New release '12.04 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

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                    Rule #1: Read The Manual.
                    Rule #2: Google Is Your Friend.

             - Manage Your Account: https://secure.cs.lmu.edu
             - Change Password via Command Line: yppasswd
             - BASH Quick Reference: http://www.cs.lmu.edu/bash.pdf
             - VIM  Quick Reference: http://www.cs.lmu.edu/vim.pdf
             - Printer Drivers:      http://www.cs.lmu.edu/drivers
             - How To List Files: ls, ls -la
             - How To Change Directories: cd [directory-name]
             - How To Edit Files: nano, vim, emacs
             - (Win) How To Transfer Files: WinSCP, Filezilla
```

```
aalzaid1@ab201:~$ python -m SimpleHTTPServer 8080
Traceback (most recent call last):
  File "/usr/lib/python2.7/runpy.py", line 162, in _run_module_as_main
    "__main__", fname, loader, pkg_name)
  File "/usr/lib/python2.7/runpy.py", line 72, in _run_code
    exec code in run_globals
  File "/usr/lib/python2.7/SimpleHTTPServer.py", line 220, in <module>
    test()
  File "/usr/lib/python2.7/SimpleHTTPServer.py", line 216, in test
    BaseHTTPServer.test(HandlerClass, ServerClass)
  File "/usr/lib/python2.7/BaseHTTPServer.py", line 598, in test
    httpd = ServerClass(server_address, HandlerClass)
  File "/usr/lib/python2.7/SocketServer.py", line 408, in __init__
    self.server_bind()
  File "/usr/lib/python2.7/BaseHTTPServer.py", line 108, in server_bind
    SocketServer.TCPServer.server_bind(self)
  File "/usr/lib/python2.7/SocketServer.py", line 419, in server_bind
    self.socket.bind(self.server_address)
  File "/usr/lib/python2.7/socket.py", line 224, in meth
    return getattr(self._sock,name)(*args)
socket.error: [Errno 98] Address already in use
aalzaid1@ab201:~$ python -m SimpleHTTPServer 8070
Serving HTTP on 0.0.0.0 port 8070 ...
localhost - - [04/Feb/2014 22:33:25] "GET / HTTP/1.1" 200 -
localhost - - [04/Feb/2014 22:33:26] code 404, message File not found
localhost - - [04/Feb/2014 22:33:26] "GET /favicon.ico HTTP/1.1" 404 -
```

```
Abduls-MacBook-Pro:~ AbdulZaid$ ssh -L 9000:localhost:8070 aalzaid1@my.cs.lmu.edu
aalzaid1@my.cs.lmu.edu's password:
Welcome to Ubuntu 11.10 (GNU/Linux 3.0.0-12-server x86_64)

 * Documentation:  https://help.ubuntu.com/11.10/serverguide/C

   System information as of Tue Feb  4 22:31:45 PST 2014

   System load:    0.0            Processes:           145
   Usage of /home: 1.4% of 45.83GB  Users logged in:     6
   Memory usage:   26%            IP address for eth0: 157.242.71.21
   Swap usage:     0%

   Graph this data and manage this system at https://landscape.canonical.com/
New release '12.04 LTS' available.
Run 'do-release-upgrade' to upgrade to it.
```

localhost:9000

google
http://www.google.com/   Twitter   TtansG   F   IG   Y   clasicoo   Flickr   Riyadh   John David N. Dionis   Ray Toal   adslG

Directory listing for /

- .adobe/
- .bash_history
- .bash_logout
- .bashrc
- .cache/
- .config/
- .dbus/
- .esd_auth
- .evolution/
- .gconf/
- .gconfd/
- .gnome2/
- .gnome2_private/
- .gtk-bookmarks
- .gvfs/
- .ICEauthority
- .local/
- .macromedia/
- .mission-control/
- .mozilla/
- .nautilus/
- .openoffice.org/
- .pki/
- .profile
- .pulse/
- .pulse-cookie
- .recently-used.xbel

Q2. Run something lengthy (ping, vm_stat/vmstat loooooong download, finding the quadrillionth prime number…) inside screen; logout of that computer entirely, login again, and reconnect to screen to prove to yourself that the process has continued to run without interruption. Submit screenshots of your long-running command before you logged out, then after you reconnected to it.

```
Abduls-MacBook-Pro:~ AbdulZaid$ ssh aalzaid1@my.cs.lmu.edu
aalzaid1@my.cs.lmu.edu's password:
Welcome to Ubuntu 11.10 (GNU/Linux 3.0.0-12-server x86_64)

 * Documentation:  https://help.ubuntu.com/11.10/serverguide/C

  System information as of Tue Feb  4 00:00:27 PST 2014

  System load:    1.9              Processes:          140
  Usage of /home: 1.4% of 45.83GB  Users logged in:    3
  Memory usage:   28%              IP address for eth0: 157.242.71.21
  Swap usage:     0%

  Graph this data and manage this system at https://landscape.canonical.com/
New release '12.04 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


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    |_____|_|  |_| \___/     \____||_|  |_|___/|__|

            Rule #1: Read The Manual.
```

```
aalzaid1@ab201:~$ cd Desktop
aalzaid1@ab201:~/Desktop$ ls
a.out          Die.class         ks.o             Q6.scd
Coin.java      Echo.class        ks.s             Quad
Coins          fib.s             Ks.s             QuadSolver.java
Dicce.java     GoodDate (1).java LeapYear.java    RecursiveFibs.class
Dice           GoodDate.class    max3.s           RecursiveFibs.java
DiceApp.class  GoodDate.java     maxofthree.c     SetOfCoins.class
DiceApp.java   hi.c              NextDate.class   SetOfCoins.java
Dice.class     hi.s              NextDate.java    SetOfCoinsTester.java
Dice.java      homework          Q6.s             untitled folder
aalzaid1@ab201:~/Desktop$ screen
```

```
Screen version 4.00.03jw4 (FAU) 2-May-06

Copyright (c) 1993-2002 Juergen Weigert, Michael Schroeder
Copyright (c) 1987 Oliver Laumann

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the terms of the GNU General Public License as published by the Free Software
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ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with
this program (see the file COPYING); if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Send bugreports, fixes, enhancements, t-shirts, money, beer & pizza to
screen@uni-erlangen.de


            [Press Space for next page; Return to end.]
```

```
aalzaid1@ab201:~/Desktop$ java RecursiveFibs 140
```

```
Last login: Mon Feb  3 23:57:56 2014 from cpe-23-241-186-214.socal.res.rr.com
aalzaid1@ab201:~$ cd Desktop
aalzaid1@ab201:~/Desktop$ ls
a.out           Die.class        ks.o           Q6.scd
Coin.java       Echo.class       ks.s           Quad
Coins           fib.s            Ks.s           QuadSolver.java
Dicce.java      GoodDate (1).java LeapYear.java RecursiveFibs.class
Dice            GoodDate.class   max3.s         RecursiveFibs.java
DiceApp.class   GoodDate.java    maxofthree.c   SetOfCoins.class
DiceApp.java    hi.c             NextDate.class SetOfCoins.java
Dice.class      hi.s             NextDate.java  SetOfCoinsTester.java
Dice.java       homework         Q6.s           untitled folder
aalzaid1@ab201:~/Desktop$ screen
[detached from 26758.pts-6.ab201]
aalzaid1@ab201:~/Desktop$
```

```
Last login: Mon Feb  3 23:57:56 2014 from cpe-23-241-186-214.socal.res.rr.com
aalzaid1@ab201:~$ cd Desktop
aalzaid1@ab201:~/Desktop$ ls
a.out           Die.class        ks.o           Q6.scd
Coin.java       Echo.class       ks.s           Quad
Coins           fib.s            Ks.s           QuadSolver.java
Dicce.java      GoodDate (1).java LeapYear.java RecursiveFibs.class
Dice            GoodDate.class   max3.s         RecursiveFibs.java
DiceApp.class   GoodDate.java    maxofthree.c   SetOfCoins.class
DiceApp.java    hi.c             NextDate.class SetOfCoins.java
Dice.class      hi.s             NextDate.java  SetOfCoinsTester.java
Dice.java       homework         Q6.s           untitled folder
aalzaid1@ab201:~/Desktop$ screen
[detached from 26758.pts-6.ab201]
aalzaid1@ab201:~/Desktop$ logout
Connection to my.cs.lmu.edu closed.
Abduls-MacBook-Pro:~ AbdulZaid$
```

```
aalzaid1@ab201:~/Desktop$ screen
[detached from 26758.pts-6.ab201]
aalzaid1@ab201:~/Desktop$ logout
Connection to my.cs.lmu.edu closed.
Abduls-MacBook-Pro:~ AbdulZaid$ ssh aalzaid1@my.cs.lmu.edu
aalzaid1@my.cs.lmu.edu's password:
Welcome to Ubuntu 11.10 (GNU/Linux 3.0.0-12-server x86_64)

 * Documentation:  https://help.ubuntu.com/11.10/serverguide/C

  System information as of Tue Feb  4 00:03:00 PST 2014

  System load:    1.89           Processes:          139
  Usage of /home: 1.4% of 45.83GB  Users logged in:    3
  Memory usage:   28%            IP address for eth0: 157.242.71.21
  Swap usage:     0%

  Graph this data and manage this system at https://landscape.canonical.com/
New release '12.04 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

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```

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            Rule #1: Read The Manual.
            Rule #2: Google Is Your Friend.

     - Manage Your Account:  https://secure.cs.lmu.edu
     - Change Password via Command Line: yppasswd
     - BASH Quick Reference: http://www.cs.lmu.edu/bash.pdf
     - VIM  Quick Reference: http://www.cs.lmu.edu/vim.pdf
     - Printer Drivers:      http://www.cs.lmu.edu/drivers
     - How To List Files: ls, ls -la
     - How To Change Directories: cd [directory-name]
     - How To Edit Files: nano, vim, emacs
     - (Win) How To Transfer Files: WinSCP, Filezilla
     - (Win) How To SSH Remotely: Putty, Cygwin
     - (Mac) How To Transfer Files: Filezilla, Cyberduck, Fugu
     - (Mac) How To SSH Remotely: Terminal

Last login: Tue Feb  4 00:00:27 2014 from cpe-23-241-186-214.socal.res.rr.com
aalzaid1@ab201:~$ screen -r
```

```
aalzaid1@ab201:~/Desktop$ java RecursiveFibs 150
```

Q3. Learn how to use du, which tells you how much disk space you're using in a given directory
(a) Which first-level subdirectory in ~ is taking up the most space? Submit the command that includes this information in as little output as possible.
(b) Submit a command that displays only the disk usage of directories matching some regular expression. Hint: l.

A.
(a) As shown below the subdirectory that's using the most space is Movies = 156G

```
Abduls-MacBook-Pro:~ AbdulZaid$ du -d 1 -h
8.0K    ./.adobe
4.0K    ./.config
4.0K    ./.cups
 11M    ./.dropbox
4.0K    ./.eclipse
 36K    ./.filezilla
8.0K    ./.idlerc
  0B    ./.m2
 58M    ./.npm
8.0K    ./.putty
 12K    ./.ssh
 20K    ./.titanium
1.7M    ./.Trash
1.2M    ./Applications
 16K    ./Conduit
262M    ./Desktop
 18G    ./Documents
5.4G    ./Downloads
303M    ./Dropbox
140K    ./GoideProjects
6.8M    ./Google Drive
du: ./Library/Saved Application State/com.adobe.Installers.Setup.savedState: Permission denied
 15G    ./Library
156G    ./Movies
 26G    ./Music
 32G    ./Pictures
 52K    ./project
  0B    ./Public
 28K    ./R Console
  0B    ./tmp
254G    .
Abduls-MacBook-Pro:~ AbdulZaid$
```

(b)

```
Abduls-MacBook-Pro:~ AbdulZaid$ du -d 1 -h | grep "d"
du: ./Library/Saved Application State/com.adobe.Installers.Setup.savedState: Permission denied
8.0K    ./.adobe
 11M    ./.dropbox
8.0K    ./.idlerc
 16K    ./Conduit
5.4G    ./Downloads
140K    ./GoideProjects
Abduls-MacBook-Pro:~ AbdulZaid$
```