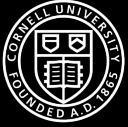# ECE 5725
Embedded Operating Systems
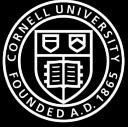# Lecture 8

Prof. Joseph F. Skovira

News

Lab1 Week 2

Lab1 Week 2: Notes

Important lab topics

Secure Shell and Secure Copy

Shell Scripts

Input/output redirection
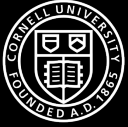
Background

Special FS objects (FIFO)

Python coding

Subprocess

GPIO and Rpi.GPIO library

piTFT documentation (schematic…)

Mplayer options

ssh and scp

scp : secure copy

provide secure encrypted file transfer between two
   untrusted hosts over an insecure network

Example1: logged in to the RPI, transfer files **to** ece5725-f21 server

scp –p –r /home/pi/lab1_files jfs9@132.236.79.64:/home/Lab1

                Source   signon@destIP: destination folder
               "dot"
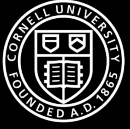
-p preserve file properties
-r recursively copy directories

Example2: logged in to the RPI, transfer files **from** ece5725-f21 server

scp –p –r my_netid@132.236.79.64:/home/jfs9/lab1_files_s21 /home/pi

          Source: signon @ destIP   destination folder
                                                         "dot"

-p preserve file properties
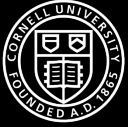-r recursively copy directories

Top Ten List: Linux Commands

Processes
htop
top
ps
kill

Command Line Interface
Console
Shell

Command Line Interface
Console
Shell

```
echo 'run ls'
ls –l
```

```
#!/bin/bash
# shell script: run ls

echo 'run ls'
ls –l
```
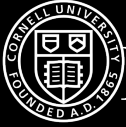
test_fifo

cat test_fifo

echo 'hello' > test_fifo

File System:
/home/jfs9
    shell script
    test_fifo

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Python subprocess

Allows python to execute commands in the shell

Command line	Shell Script	Subprocess

```
echo 'hello'
echo "hello" > test_file
```

```
./test_script

  test_script
```
```
#!/bin/bash
# shell script: run echo

echo "hello" > test_file
```
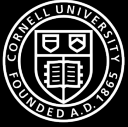
```
python test_code.py

  test_code.py
```
```
my_cmd =
echo "hello" > test_file

subprocess call using
my_cmd
```

Command line   Shell Script   Subprocess

Command Line Interface
Console
Shell

Command Line Interface
Console
Shell

```
python  test.py

python  test.py > test_fifo
```

```
#!/bin/bash
# shell script: run python

python  test.py > test_fifo
```

test_fifo

File System:
  /home/jfs9
    test.py
    test_fifo
    shell script

cat test_fifo