CS252: Computing Lab II

Course contents

- Linux shell programming
- SSH and other protocols
- Apache server setup and management
  - Web server
  - Email server
- MySQL
- PHP
- JavaScript (MERN stack)
- Android Studio

Course logistics

- Labs MW 1400-1700 (CC Linux Lab)
- Lecture Th 0900-0950 (RM101)
- Course website is https://cse.iitk.ac.in/users/nsrivast/cs252.html
- My office hours Th 1030-1130 (KD303)
- TA office hours
  - Your TA will tell you (min 3 hours per week)

Course workflow

- Thursday lecture will lay out the scope of what to do in lab the coming week
- You will read up material pointed to in the lecture
- You will experiment with the concepts described in the lecture and the material during lab hours
- There will be assignments testing your mastery of these concepts
  - You will demonstrate these to your TA on the lab after each assignment’s deadline
  - You will deposit the code in your personal git repository and give your TA read access to it

Teamwork

- You will work in groups of four
- I have decided the groups already
  - List is posted to the course website
  - First 15 groups will go to lab Monday
  - Final 12 groups will go to lab Wednesday
- Lab attendance will be granted on a teamwise basis
  - If your team member doesn’t come, you lose partial attendance also
- TA will ask each team member to tweak or explain something about the assignment during the demo
  - All team members grades will be reflected by this performance

Grading policy

- 20% marks for attendance
  - 5% per team-member
- 40% marks for assignments
  - 4 assignments, worth 10 points each
  - In each assignment
    - 6 points for demo, shared across team members
    - 4 points for properly documented code in repo, graded individually
- 20% marks for course project
- 20% marks for end-sem
  - Paper-based

Week 1 lab: shell scripting

- Ensure you have a github account
  - That you know how to push code to it from the command line
  - Some reading material to orient you is posted to the course webpage
- Fork the Ubuntu desktop wallpaper project from my github https://github.com/nisheeths
  - This contains a shell script that will change your desktop's wallpaper to NASA's Astronomy Picture of the Day

APOD project

1) Get it to work on your machine
    1) Manipulating variables in the shell
    2) Wget
    3) Grep
    4) Awk
2) Modify it to
    1) Do the same thing but from a different website
    2) Do this selecting randomly from a set of images
        1) shuf
    3) Do this at a set time automatically
        1) Cron
    4) Be creative!

Quick overview of APOD base

```
#!/bin/bash

rm ~/apod/*.jpg ~/apod/*.html ~/apod/*.txt
user=$(whoami)
cd ~/apod
wget http://apod.nasa.gov/apod/astropix.html
a='http://apod.nasa.gov/apod/'
grep 'href="i' astropix.html > temp.txt
b=$(awk -F "\"" '{print $2}' temp.txt)
c=$a$b
wget $c
imname=$(ls *.jpg)
/usr/bin/gsettings set org.gnome.desktop.background picture-uri file:///$(pwd)/$imname
```

Week 1 expectations

- You know how to use the shell to programmatically
  - Read local files, and edit them with a shell-based editor (vim/emacs/nano)
  - Scrape static websites
  - Parse text
  - Dump command output to files
  - Sort, filter and selectively output entries from files