DevClub Lecture 1

Linux/Bash and Git

COL100 (I Semester 2017-18) included an introduction to the basics of bash commands, which serve as a more in depth tutorial -
http://www.cse.iitd.ernet.in/~akashdeep/col100/Lab1.pdf
http://www.cse.iitd.ernet.in/~akashdeep/col100/Lab2.pdf

A list of commands used in the lecture along with some other commonly used commands follows. The reader is encouraged to read about these commands and their functionalities, preferably by skimming through their man pages.

- cd - Changes directory
- ls - Lists directory contents
- mkdir - Creates new directory
- rm - Removes file(s)
- sudo - Is run before other commands to provide admin privileges
- cat - Reads contents of the give
- apt - Used to manage packages
- chmod - Edits permissions
- | (pipes) - Transfers output to next command
- echo - Prints to screen
- grep - Finds text matches in files
- ranger - Terminal file browser
- tree - Lists directory structure as a tree
- youtube-dl - Downloads videos/playlists
- lolcat - Rainbow coloured cat
- sl - Steam Locomotive
- cowsay - Prints a cow echoing text
- cmatrix - Matrix screen saver
- netcat - Network manager
- wget - Powerful download manager
- ssh - allows remote login

The python3 server used may be replicated by running -

```
python3 -m http.server
```

Further documentation may be found at https://docs.python.org/3/library/http.server.html
The server allows access to the filesystem at point of running on the port 8000, which may be accessed by locally connected devices by navigating to http://*ip-address*:8000/ in a web browser, eg. http://172.18.0.1:8000/

Users with valid kerberos login id can ssh into IITD server with -

`ssh userid@ssh1.iitd.ac.in`

For file transfer, scp is used instead.

Most difficulties can be easily resolved by a few web searches, and using the native man pages (In bash, enter man *CommmandName* to view).

Some tips-
Tab key autocompletes in bash
Paste and copy are ctrl+shift+v and ctrl+shift+c in bash

For a more thorough and slower paced introduction to git and GitHub, the following are recommended -

- https://www.howtogeek.com/180167/htg-explains-what-is-github-and-what-do-geeks-use-it-for
- https://www.codeacademy.com/learn/learn-git
- https://try.github.com

The reader is encouraged to follow any tutorial that they feel matches their own pace. A familiarity should be built with basic concepts of git, along with basic commands like init, add, commit, push, and pull, as well as pushing to a centralised repository at GitHub.
In addition, students can use their IITD email id's to request a student account at GitHub, which allows for free private repositories. GitHub repositories are public by default.