Lecture 1

What we discussed in the last class

- **Engineers Job**
  - **Computer Science** and **Computer engineering** are separate fields, each requiring a different type of expertise. Just like a bridge researcher cannot build bridges only a civil engineer can build it.
  - Similarly a computer scientist would not be able deploy an application for public use, only a computer engineer who is experienced with designing & deploying applications would be able to quickly take years of computer science research and deploy the application.
  - If you love creating stuff instead being inquisitive about researching it then you are probably bent towards engineering than research.
  - This course sheds a little bit of light on how to engineer applications.

- **Why Web Applications**
  - The whole world is shifting towards cloud based services instead of using application that reside on their computers.
  - As Internet speeds grow and internet connections become cheaper this is very likely to continue.
  - You if you wish to have the skillset of the future then web applications is for you.
  - Even if you do not wish to pursue a career in web application development still you want to total control over your blog or wish to sell your mom's handicrafts on an online platform then stop being at some developers mercy learn the basics of web.

- **Push over mental block (<u>Important, Please do read</u>)**
  - My teaching methodology is centered around removing your mental block that you cannot learn some 'xyz' technology, it is not about spoon feeding you some particular coding syntax.
  - So please put in work from your side too, to get the full benefit of this course.
  - Also stop self doubting yourself, I am not just saying this but I am 100% sure that each one you can easily grasp everything that I am teaching, it is just matter of confidence.
  - Every Bitsian has an 120+ IQ and that includes you, so please don't tell yourself that you cannot do it.

Code snippets of what we did in the last class

- Make your directory in the home folder with your id
  - mkdir <Your ID Number>
    - Eg:- mkdir 2015ABPS831P

- Install vim editor
    - sudo apt-get install vim
- Short introduction to vim
    - Press <i> to start inserting text
    - When done editing
        - Press “Esc” Key
        - Then type <:wq> to save and exit
- Ssh and how ssh works
    - ssh is a protocol stands for secure shell and is used to enter a shell as the name suggests
    - To enter a virtual secure shell, type:
        - ssh <user>@<I.P. of the server>
            - ssh root@192.168.23.14
        - Then enter the respective password
- Scp
    - scp is the command to copy a file on a remote server from localhost or vice-versa
    - scp <file path of the local machine> <user of remote server>@<I.P. of the remote server>:<path of the remote server>
        - Eg:- scp contact.txt root@192.168.23.14:/home/contact/
    - http://www.hypexr.org/linux_scp_help.php (Please follow this link for some more trivial commands of scp)
- Installing git
    - sudo apt-get update
    - sudo apt-get install git
- Install Sublime 3
    - `sudo add-apt-repository ppa:webupd8team/sublime-text-3`
    - `sudo apt-get update`
    - `sudo apt-get install sublime-text-installer`
- Make account on github
- Configure git : git init and git set remote
    - To initialize an empty git repository type: git init (in the folder you want to initialize the git repo)
    - To configure your git account on local machine
        - git config --global user.email <Your email>
            - Eg:- git config --global user.email jainamritanshu@gmail.com
        - git config --global user.name <Your name>
            - Eg:- git config --global user.name “jainamritanshu”
    - To save your credentials
        - `git config --global credential.helper cach`
    - To add/change a remote in the local repository
        - git remote add <remote name (usually origin)> <remote git repo path or git repository link>
            - Eg:- git remote add origin https://github.com/jainamritanshu/contact/

        - git remote set-url <remote name> <new remote git repo path or git repository link>
            - Eg:- git remote set-url origin https://github.com/jainamritanshu/contact/
- Add/Commit and Push your local changes to the remote repository
    - git add <file path> (use **'*'** to add all the files)
        - Eg:- git add contact.txt
    - git commit -m "<commit message>"
        - Eg:- git commit -m "Changed my contact details"
    - git push <remote name> <branch name>
        - Eg:- git push origin master
    - git pull <remote name> <branch name> (To pull the changes and make your local repo up to date with the remote repo>
        - Eg:- git pull origin master

- How to merge

```
1   <<<<<<< HEAD
2
3   Here is the original change.
4   =======
5   Here is the modified change.
6   >>>>>>> 58326c301d09b58f3ac23d616e73f7b478424cc5
7
```

    - These conflicts generally occur when two or more developers are working on the same module. Now you have to manually merge the changes by selecting the desired blocks of code and save the file
    - Now continue as the general steps to push to the remote repository(GIven above).

Assignment to submitted before Thursday 11PM, 16th February (5 Marks)

- Assignment Pull request
    - Everyone has to send a pull request to the repo : https://github.com/jainamritanshu/contact
    - The steps to do so are the following,
        - Create a new Repo on Github
        - Create a new Repo on your home pc using git init
        - Update the remote of your local repository to your new repository

            - Example : git remote add origin https://github.com/ishan28mkip/contact
        - Creating a new file named contact.txt and add your **Name**, **ID**, **Email**, **Whatsapp Number** and finally your **Server IP Address** that you got from Digital Ocean using github student developer pack.
        - Create a pull request on https://github.com/jainamritanshu/contact to merge your changes

Quiz in the next class (5 marks)

- **Syllabus :**
    - Git mooc video & Git documentation & Try git with your friends
        - https://www.youtube.com/watch?v=0fKg7e37bQE
        - https://git-scm.com/documentation
        -
    - Basic ssh and scp command syntax
    - Basic Vim Syntax

Next class snapshot

- Starting a node server and creating your first API
- Making your first form using HTML5 and making it cool using CSS3
- Be on time and get ready for the quiz.