Notice: SNP Lab Batches F6 F7
Lab Projects

The SNP Lab requires the students to undertake a lab project that would be relevant to the lab curriculum. The lab project can be done individually or in groups. The max number of members in a group can be four. However the project **must reflect the effort of ALL** the group members and should be proportional to the size of the group.

The project should be related to Systems and Networking domain problems. Some sample project ideas can be as follows:

- Distributed music player: All the people connected to the same LAN/wifi can share their music with each another. Uses the concepts of Torrents and Distributed Hash Tables.
- Distributed Download Manager: To efficiently use the bandwidth different users can download different parts of a big file in parallel., After downloading they will share the parts amongst them and will join them to get the complete file.
- Linux Kernel Module: A Kernel Module is just a new functionality that can be plugged into a running Linux machine. Your Kernel module can be designed to perform any task you want, an in memory file system, a key logger, a process scheduler etc.
- Low level Network Programming: Implement a toy version of UDP and communicate over it, other options include making a HTTP server, a telnet server, a FTP server amongst others.
- System firewall, HTTP proxy etc.
- Command line clients for Facebook, Twitter etc.
- A SMTP client to send email directly.
- You are encourages to find any other project idea that you want to propose.

Project Submission:

- You have to maintain your project on github.com. GIT is a version control system that allows developers to easily rollback to previous versions of their code.
- You have to submit the names of the group members along with the title of the project by 18th March 2016.

Project Evaluation Criteria:

- All the group members MUST have distinctive role in the project. Each member should be able to point out the part of the project they have done.
- You should regularly commit your code to github.com.
- During evaluation, your commit frequency would also be considered along with individual group member's commit. (DO NOT simply upload your whole code at the last day. You will be penalized heavily)
- Since the subject is related to systems and network programming you are encourage to use C/C++ programming languages. You can also use any other programming language such as Java, Python (Jython/IronPython) but make sure that there is substantial implementation from your side. DO NOT simply use built-in libraries that are present in these HLL. For ex. To implement a network client - server you should use raw sockets. Do not use Client Server classes.

References:

- If you have any doubt about any topic discussed above visit Wikipedia and read the corresponding page.
- For introduction to git, visit [https://git-scm.com/book/en/v1/Getting-Started]
- To setup an account at github, [https://guides.github.com/activities/hello-world/] and start hosting code [https://guides.github.com/introduction/getting-your-project-on-github/]
- If you still have any doubt visit Google still if you are unable to find relevant information use this guide [http://blog.hubspot.com/blog/tabid/6307/bid/1264/12-Quick-Tips-To-Search-Google-Like-An-Expert.aspx]