CMP2204 Introduction to Computer Networks

Spring 2020, Term Project

Goal: The goal is to apply the concepts learned in class, through programming and hands-on practice. At the end of this project, you will have a better understanding of how a networked application operates and what are the technologies behind it.

Task: Design and implement a peer-to-peer file sharing application. The shared design document specifies the necessary protocols that you need to implement. Please follow the design doc closely (in fact, verbatim) in your implementation.

Requirements: The application should;

1. Have 4 processes: Service_Listener, Service_Announcer, P2P_Downloader, P2P_Server. These processes should work as outlined in their respective specifications.
2. Successfully detect all available users in the Local Area Network.
3. Successfully exchange files with any available user in the Local Area Network.
4. Display an error dialog if a download is in error.
5. Output a download log, containing timestamps and names of all downloaded files.

Important Notes: Deadline for the project is 23:59 on **Sunday, May 10**. Please commit all material under the "Term Project" assignment under Resources on itslearning. Your commits should include:

- All pieces of codes that you wrote. (Service_Listener, Service_Announcer, P2P_Downloader, P2P_Server).
- A README file describing how your program works, and known limitations of your program (so that I run your code correctly).
- A 1-page document describing which platform (Windows/Linux) you've used to develop your code, faced challenges, group members' names and division of workload within the group.

Please name all your files as [XXX]_[filename] where XXX is your team members' initials.

You may work in groups of size **2 or 3**. You should determine a partitioning of responsibilities so that group members can work effectively in parallel.

Grading: Your commit is complete (includes 4 executables, 1 README, 1 report) **(20 pts)**. Your code can correctly discover available users and note their chunks **(15 pts)**, can periodically and correctly announce its local files **(10 pts)**, can download a content from the network **(20 pts)**, can serve chunks of other users' content **(10 pts)**, can correctly output a download log under the same directory **(15 pts)**, seamless user interactions **(10 pts)**. Anything else is a bonus (*e.g.,* displaying available users, displaying the available chunks in the network, etc.).

Please note that only the students who present their work in the demo session on Week 14 will get a grade out of their term project.