ASSIGNMENT

Course: Computer Network, Semester 1, 2022-2023

Objectives

Build a chat application according to the communication protocols defined by each group, using the TCP / IP protocols.

Application Description

a)   The application allows two or more users on different machines to chat with each other

b)   The chat client is built on the hybrid model between the Client-Server and P2P models. The system has a central server for user registration and online user management, but clients chat directly with each other. (Students can refer to Napster for an illustration).

c)   One person has a list of friends retrieved from the central server. He/she can start some chats with different people at the same time. Each conversation is a P2P connection.

d)   Application allows file transfer during chats between clients through P2P connection.

e)   The application must use communication protocols already pre-defined by each group.

Working plan

Work in a team.

- Each group has up to 4 members.
- Phase 1 (First 2 weeks):
  - Define specific functions of the chat application
  - Define the communication protocols used for each function
- Phase 2 (Next 2 weeks)
  - Implement and refine the application according to the functions and protocols defined in Phase 1

Results

a.   Phase 1 (softcopy):
- Submit the report file of the first phase to BKeL in the predefined section as announced on BKeL.
- File format (pdf): ASS1_P1_**<<Group_Name>>**.pdf
- This report includes:
  - Define and describe the functions of the application
  - Define the protocols used for each function

b.   Phase 2 (hard and softcopy):

c.   Submit the report file of the assignment to BKeL

d.   File format (.rar): ASS1_**<<Group_name>>**.rar

e.   This report includes:

- Phase 1 content
- Describe each specific function of the application
- Detailed application design (architecture, class diagrams, main classes ...)
- Validation (sanity test) and evaluation of actual result (performance)
- Extension functions of the system in addition to the requirements specified in section 2
- Participants' roles and responsibilities
- Manual document
- Source code (softcopy)
- Application file (softcopy) compiled from source code

Evaluation

Assignment 1 is worth 15% of the course grade.

Deadline for submission

3 weeks from the assignment announcement.