UNIVERSITY OF RUHUNA
BACHELOR OF INFORMATION AND COMMUNICATION TECHNOLOGY DEGREE
LEVEL III (SEMESTER I) – Group Assignment

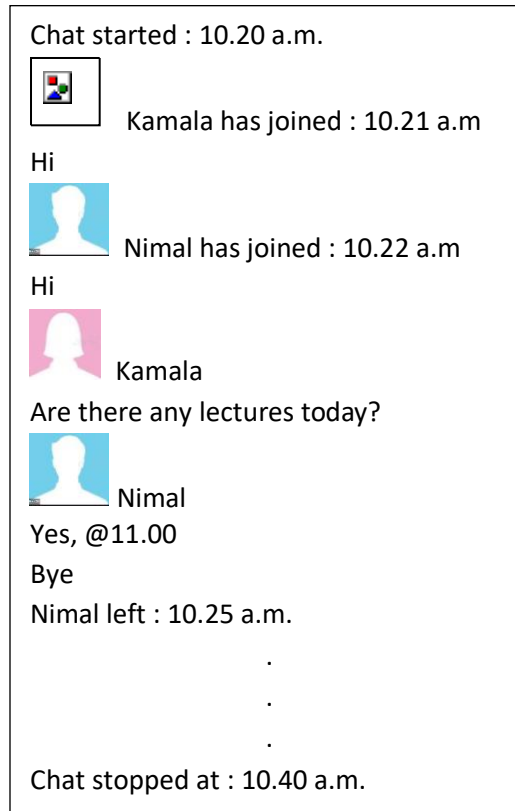**Course unit: ICT3113 – Advanced programming in Java**

Due date: Monday 25th May 2022

You are required to develop a multiuser Chat application according to the requirements given below.

General Requirements

- There are two 02 kind of users for the system
    - Admin – 0nly 01 admin
    - User – Multiple users

- Your application must allow users to
    - Create accounts by providing
        - Email, Username, Password, Nick Name, Profile Picture
    - Update only their Username, Password, Nick Name, Profile Picture
    - Self-subscribe to chats
    - Self-unsubscribe from chats

- Your application must allow Admin to
    - Create chats
    - Subscribe users to chats
    - Unsubscribe users to chats
    - Remove users from the application

- Chat System functionalities
    - When a chat starts by the Admin you must notify it to the subscribed users who have currently log in to the application and who have subscribed for the chat
    - At the beginning of the chat you must display
        - Chat started at : <time>
    - Only subscribed users can chat in the chat
    - During the chat user profile and Nick Name of the user must be displayed
    - When users are joining to the chat you must display that in the chat as follows
        - "<user's Nick Name>" has joined : <time>
    - By typing "Bye" users can leave the chat, when users are leaving from the chat you must display that in the chat as follows
        - "<user's Nick Name>" left : <time>

- o   After the last user leave the chat, chat must be automatically exit by displaying
  - Chat stopped at : <time>
  - Chat must be saved in a ".txt" file in the local file system
  - You must maintain a record about the chat by keeping chat id and link to the ".txt" file in a database table

Chat started : 10.20 a.m.

  Kamala has joined : 10.21 a.m

Hi

  Nimal has joined : 10.22 a.m

Hi

  Kamala

Are there any lectures today?

 Nimal

Yes, @11.00

Bye

Nimal left : 10.25 a.m.

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Chat stopped at : 10.40 a.m.

Sample chat view

Specific Requirements

- You must design and implement a suitable GUI for the Chat application using Java Swing
- You must use a design pattern to implement the subscribe/unsubscribe functionality of your Chat application
- You must use Threads and Java RMI concepts to create and maintain chats
- You must store all the related data in a MySQL backend
- You must use Java Hibernate for all CRUD operations with MySQL backend
- Assume that
  - o   There is only one chat at a time
  - o   users can only present only in a single chat at any given time

Submission

Submit followings to the LMS by 25th May 2022

- Zipped source code (both front and back end)
- An Executable version of your Chat application in windows or Linux environment
- Report (Email a copy to the course coordinator)
  - Design cover page as shown in "Annex A"
  - Class diagrams for your application
  - ER diagram for your MySQL backend
  - GUI designs for your applications
  - Brief description about Tools, Technologies, and Concepts you have used to develop your application
    - Where you have used it
    - Why you have used it
  - Any assumptions you made / Limitations of your application
  - Individual contribution

Evaluation of the assessment

- Date: To be informed
- Each group must present their application
  - 10 minutes presentation + 10 minutes discussion
  - There will be an individual evaluation for each group member on their contribution

Annex A

ICT3113

Advanced programming in Java

Assignment 01

Multiuser Chat Application

Group members

Registration No	Name