Course Name:	Advanced Programming	Course Code:	CS 4043
Program:	BS (CS)	Semester:	Spring 2023
Total Marks:	5	Weight	5%
Assigned:	03/ 03/ 2023	Due	02/ 04/ 2023
Section:	A		

Instructions:
You might work in groups of at most three members to complete this assignment
Discussion with your class fellows is encouraged but remember that plagiarism in all forms (copy someone's code or sharing your code with others) is strictly prohibited and will result in non-positive (negative) marks.

A SIMPLE CLOCK

In this simple assignment we are going to implement a simple clock application using core Java functionality. The interface of the clock will be built using UI components of swing.

Following is the main functionality of this application.

i) A clock that will show the present date/time information on screen with the time represented either using your own class or built in classes available in core Java. The interface will allow to show time either in digital format or as a wall-clock or both.

ii) The clock must frequently become in sync with a known time server to adjust time drifts if any. The frequency of sync will be a value ranging from 1 minute to few minutes. The client will use UDP datagrams to communicate with client and update the time on client end if the server responds.

iii) Allow to select a time zone as primary and adjust the time accordingly by getting the present time from a time server.

iv) The clock will provide options to set a number of alarms with each alarm having options for alarm tone/sound and repeat frequency/options.

v) During the alarm the user must be able to either snooze for a fixed amount of time within a reasonable bound. The number of time system will snooze must be a parameter in the system.

vi) Provide an option for starting multiple timers and alert the user when a timer expires.

vii) Design a simple time server communicating with the clients using the UDP datagrams. The server must serve the present time of day to the clients using the time-zone information of the clients.