National University of Computer and Emerging Sciences, Lahore Campus

Course:	Object Oriented Analysis & Design - Lab	Time	170 mins	
Program:	BS (Computer Science)	Semester:	Spring 2019	
Code	CL309	Total Marks:	80	
Paper Date:	3rd-May- 2019	Weight	-	
Section:	A & B	Page(s):	2	
Exam:	FINAL TERM	Reg. No.		

Instructions:

- "Final Submission" folder is located at the following path. (**\\cactus\Xeon\Spring 2019\Maryam Kamal\ooad\FinalTermSubmissionX(A or B)**

- Your submission must contain 1 notepad file, 2 .jpg files and 1 java project), <u>do not submit your work in compressed form</u>. Name your submission folder in following format LXX-XXXX

- If you find any confusion in the statement, make suitable ASSUMPTIONS.

- "Final Submission" folder is located in your respective lab folders.

- Submit complete project folder

- Your **mobile phones are not allowed**

- You are not allowed to borrow anything.

- **You are immediately disqualified and awarded F in entire course from the exam if:**

  - You are seen talking, whispering, borrowing or looking at someone's PC.

  - A USB is found attached to your PC.

  - You are seen using cell phone.

  - You are caught using internet.

- F grade will be awarded on plagiarism.

Best of luck for the exam. ☺

Consider a news agency named "TrueNews" that operates within our country. It is a private agency that delivers latest news notifications to its subscribers after different intervals. It has about 4 types of subscribers i.e. Email subscriber, SMS subscribers, Voicemail subscribers and NewsPaper subscribers. The interval of notification sent is simple. Email subscribers are sent news email after every 6 hours, SMS subscribers are sent news SMS after every 4 hours, Voicemail subscribers are sent news voicemail after every 12 hours and NewsPaper subscribers are sent newspaper after every 24 hours (once in a day). All these mediums are to send notification of important news to the registered list of subscribers. The Admin of TrueNews first takes registration and then after successful registration, he starts sending notifications. A subscriber is registered one time and has to provide his name, cnic, fees and medium (i.e. email ID / mobile number or address) according to his choice of subscription. Note that one person can register for _only one_ type of subscription.

One other important facility of TrueNews is that it notifies its subscribers whenever an exciting cricket match is going to be held, so that all the subscribers may update/alter their working schedule if they do not want to miss it. This service is free of cost and allows all the subscribers to manage their schedules in advance.

Q1: Identify the strategy(ies)/ Pattern(s) used and map the entities (class-entity mapping). (Use Notepad)   *(15 marks)*

Q2: Identify the classes and draw pattern specific class diagram. Mention all important functions and attributes (Use StarUML)   *(20 marks)*

Q3: Write Java code such that an application corresponding to above mentioned requirements is created. Note that the application must not deviate much from your suggested diagram. (Use Netbeans)   *(35 marks)*

Q4: Draw a detailed and well-designed sequence diagram for the complete admin-subscriber interaction, where registration is done and notifications are sent respectively to different type of subscribers. (Use StarUML)   *(10 marks)*