National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Object Oriented Analysis & Design Lab	**Course Code:**	CS 309
	Program:	BS(CS)	**Semester:**	Spring 2019
	Duration:	2 hr	**Total Points:**	50
	Paper Date:	March, 22nd 2019	**Weight**	25
	Section:	B	**Page(s):**	2
	Exam Type:	Lab Mid		

Instruction/Notes:

➢ Taking some illegal online/offline help (i.e. cheating) might earn you an **F** grade in the entire course. Using mobile phone is strictly prohibited.

➢ Submission path**: Xeon\Spring2019\Maryam Kamal\ ooad\ OOADLabMid**

➢ **Do not submit** your folder as **zip**.

➢ Naming format of folder should be LXX-1234. This pattern should be strictly followed

"Air Fly Ways" usually known as AFW is an international luggage transportation firm/ organization which offer luggage transportation from one city or country to another (via its domestic and international flights) in very reasonable charges.

On daily basis, many people come to AFW for their luggage transportation. People who usually use this service are either customers or staff members. The AFW is a big organization having many departments and the staff works with each department. Due to its increased services, staff is hired in three categories: Administrative staff (manager, assistant, monitor etc.), Technical Staff (technicians, electricians etc.) or Customer Care Staff (receptionist, guiders etc.). The staff is allocated to the each department based on its number of transportation rooms. There are two departments majorly, Luggage_Sending Department and Luggage_Receiving Department. Each department can have many transportation rooms. Further there is special section near each transportation room known as waiting section. Usually waiting section is where most of the customers come initially and get themselves registered for the first time. Once a customer has completed his first time enrollment in the AFW, next time he comes, he co-ordinates directly with Customer Care Staff for his luggage transportation without any enrollment or visit waiting area.

Bonus: If the customer has come three times consecutively to AFW, he gets free premium lunch. Your system should tell if the customer is eligible for free premium lunch (for bonus marks)

Q1. Identify all the classes and make a clear and compact class diagram with well defined relations. *Marks will be deducted if there is a mismatch between design and implementation. Use StarUML for this part* **(15 marks)**

Q2. Develop a java application for the above mentioned system. Your system should be able to:
(25 marks)

• Register Customer

• Refer Department, CustomerID number and Date to each Customer (assign waiting area if the Customer has arrived first time after registration)

• Maintain number of staff members for each department

Implement the complete driver program that takes each and every input from user and shows details accordingly.

SHOW ALL RELATIONS IN CODE WHICH YOU HAVE USED IN DIAGRAM

Q3. Draw a sequence diagram for customer interaction where customer gets registered for the first time and then requests for luggage transportation through customer care staff. *(You don't need to design for entire system).* **(10 marks)**

Good Luck ☺