

National University of Computer and Emerging Sciences, Lahore Campus



Course:	Object Oriented Analysis & Design Lab	Semester:	Spring 2018
Program:	BS (Computer Science)	Total Marks:	70
Duration:	150 Minutes	Weight	35%
Paper Date:	11 May 2018	Page(s):	2
Section:	A	Reg. No	
Exam:	Final Term		

Instruction/Notes:

1. Understanding the question paper is also part of the exam, so do not ask any clarification.
 2. Make sure to switch off your mobile phones before the Exam starts.
 3. No USB's are allowed. Please see that the area in your threshold is clean. You will be charged for any material which can be classified as 'helping in the paper' found near you.
 4. Talking/Discussion is not allowed. It is your responsibility to protect your code and save it from being copied. If you don't protect it all matching codes are considered copy/cheating cases.
 5. You are not allowed to use internet for any purpose.
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Consider a scenario where FAST is launching its pizza shop called FAST_PizzaShop within its cafés. The FAST_PizzaShop will be launching not only in Lahore Campus but also Karachi Campus, Islamabad Campus and Faisalabad Campus. The FAST_PizzaShop will be operating on two functions i.e. OrderPizza and CreatePizza, where students will use OrderPizza function to book and order and chef will use the function CreatePizza to create pizza according to the orders received, more precisely, the first function, OrderPizza, is used by "customers" to place orders for a particular type of pizza (cheese, clam, veggie, or Pepperoni). Each branch of FAST_PizzaShop (Lahore_FASTPizzaShop, Karachi_FASTPizzaShop, Islamabad_FASTPizzaShop and Faisalabad_FASTPizzaShop) must then override the virtual method function CreatePizza() in order to create its own particular style of cheese, clam, veggie, or Pepperoni pizza. Moreover, each city branch of FAST_PizzaShop has offered few special and unique services for its student, for example, Lahore campus offers 20% discount to the students of CS Dept and 10% discount to Management students, while there is 10% extra charges added to the bill of Civil Engg. students. Similar is the ratings/ billing for Islamabad campus, however, other two campuses do not offer discount to anyone other than the students of Linguistics. Note that Each Campus has many departments (CS, Civil Engg. Management, Electrical Engg and Linguistics). Further, all Campuses is associated with one governing entity (committee), named "Inspection Committee", the inspection committee visits every campus and sees if they are following the rates and proposed discounts. While PizzaShops have common attributes like No.Of_Flavors, No.Of_Drinks, OrdersDelivered, OrdersPending etc, each specific PizzaShop has its own unique ID as well. The committee marks the performance of each pizzaShop against its unique ID, and maintains a List of all the PizzaShops Fast has. The Committee holds record of its members by keeping in their names, designation and department.

(10)

Q1: Identify the strategy/ Patterns used and map the entities. Also list the relations (Composition/ Aggregation/ Association).

(15)

Q2: identify the classes and draw pattern specific class diagram.

(25)

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

(20)

Q4: Draw a sequence diagram that shows the interaction of visit of “Inspection Committee” to a PizzaShop. Note that Committee examines each PizzaShop and records its feedback in PizzaShop_ReviewRegister, which is an automated register that requires authentication of members as well. The System then acknowledges the committee that their feedback has been recorded successfully or not.

Good Luck 😊