

Assignment # 4

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Section:

E-14

Assignment # 4 (Deadline 17/1/2026-11:59pm)

Note:

1. Assignment should be hand written and converted to pdf or word before submitting it in MS teams.
 2. Typed assignment will get -2.5 marks as penalty.
 3. Assignment submitted after deadline but within 24 hours will get -2.5 marks as penalty.
 4. Assignment submitted after 24 hours but before 48 hours will get -5 marks as penalty.
 5. Assignment submitted after 48 hours will get 00 marks.
 6. Plagiarized assignments will get 00 marks.
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Q1. Draw an Entity-Relationship diagram for the following scenario.

A DVD store wants to keep track of all its musical albums.

- A musical album has a title, price, and a unique identifier as albumId.
- Some artists create albums. We save the artist's name and CNIC for our record.
- One artist can create multiple albums. But one album can only belong to a single artist.
- One album can be of a single genre.
- The genre has genreID, name, and description.
- Multiple albums can have the same genre.

Q2. Consider the following scenario and draw Context level Data Flow Diagram.

- Buses come to a garage for repairs.
- A mechanic and helper perform the repair, record the reason for the repair and record the total cost of all parts used on a Shop Repair Order.
- Information on labor, parts and repair outcome is used for billing by the Accounting Department, parts monitoring by the inventory management computer system and a performance review by the supervisor.

Q3. Create a use case diagram of a Restaurant management system. The diagram can have many actors but it must have the staff, admin, receptionist and customers.

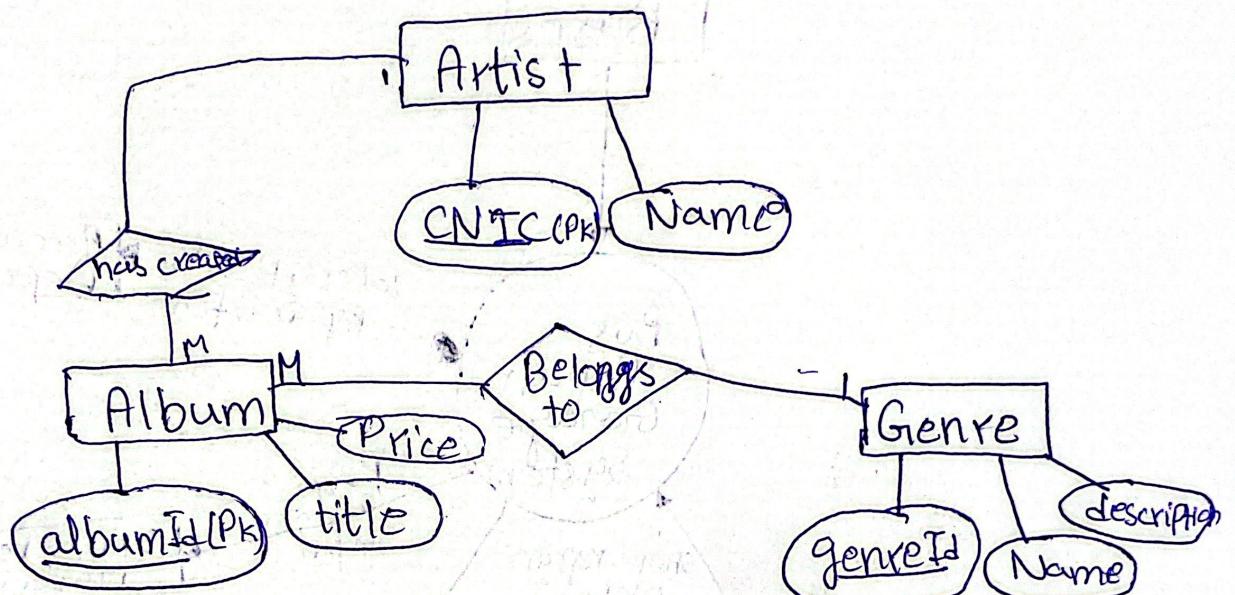
Q4. Consider the following scenario and draw class diagram for it.

- All Vehicles have some common attributes (speed and color) and common behaviors/methods (turnLeft, turnRight)
- Bicycle and MotorVehicle are both kinds of Vehicle and are therefore shown to inherit from Vehicle. To put this another way, Vehicle is the superclass of both Bicycle and MotorVehicle
- Bicycle has behavior/method of ringbell along with inherited attributes and behaviors/methods
- MotorVehicle have engines and license plates as attributes and behavior/methods having same name have been added accordingly to examine the attributes
- MotorVehicle is the base class of both MotorBike and Car, therefore these classes not only inherit the speed and color properties from Vehicle, but also the additional attributes and behaviors/methods from MotorVehicle
- Both MotorBike and Car have additional attributes and behavior which are specific to those kinds of object

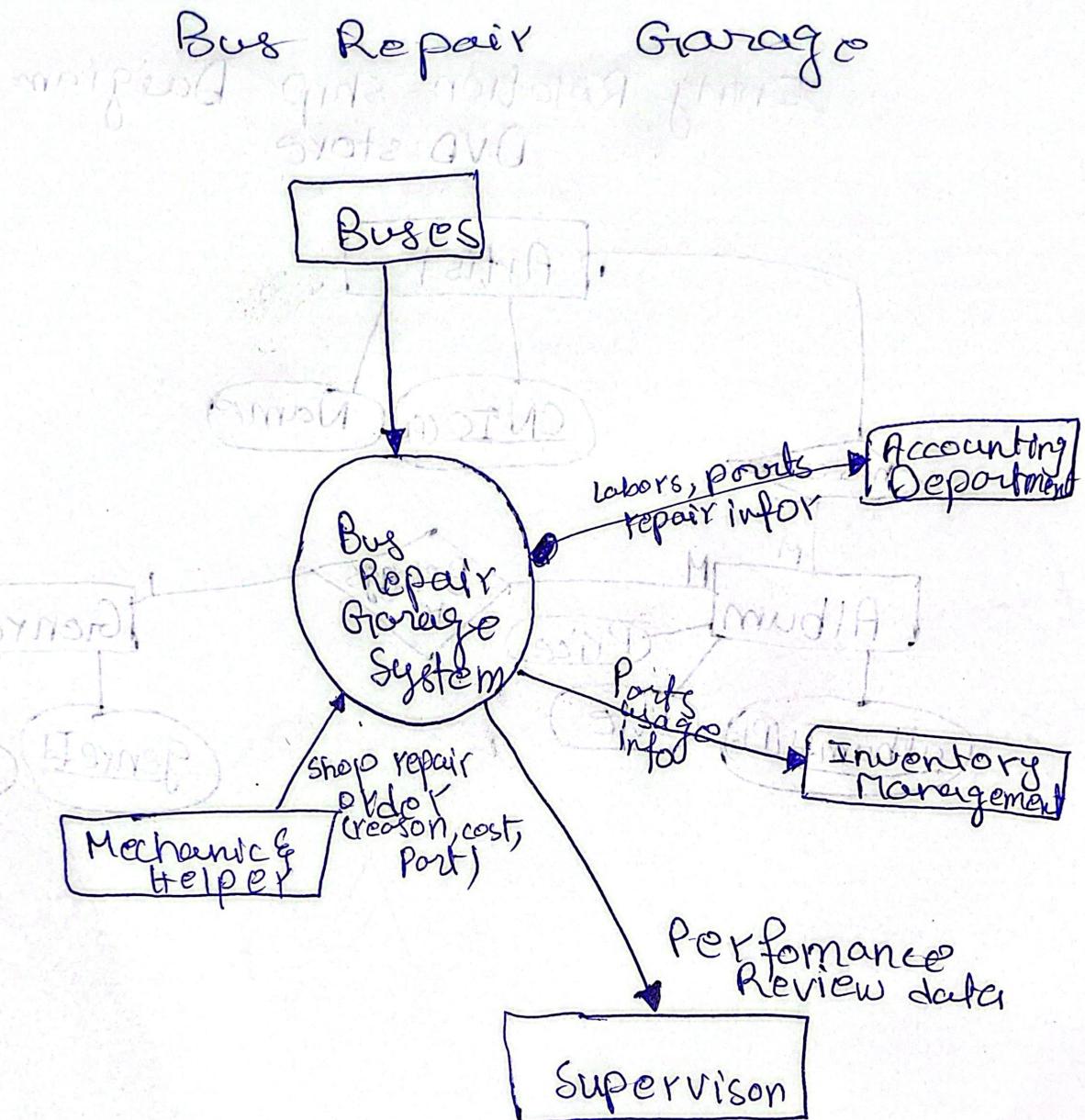
~~~~~BEST OF LUCK~~~~~

# Question #1:

Entity Relationship Diagram  
DVD store

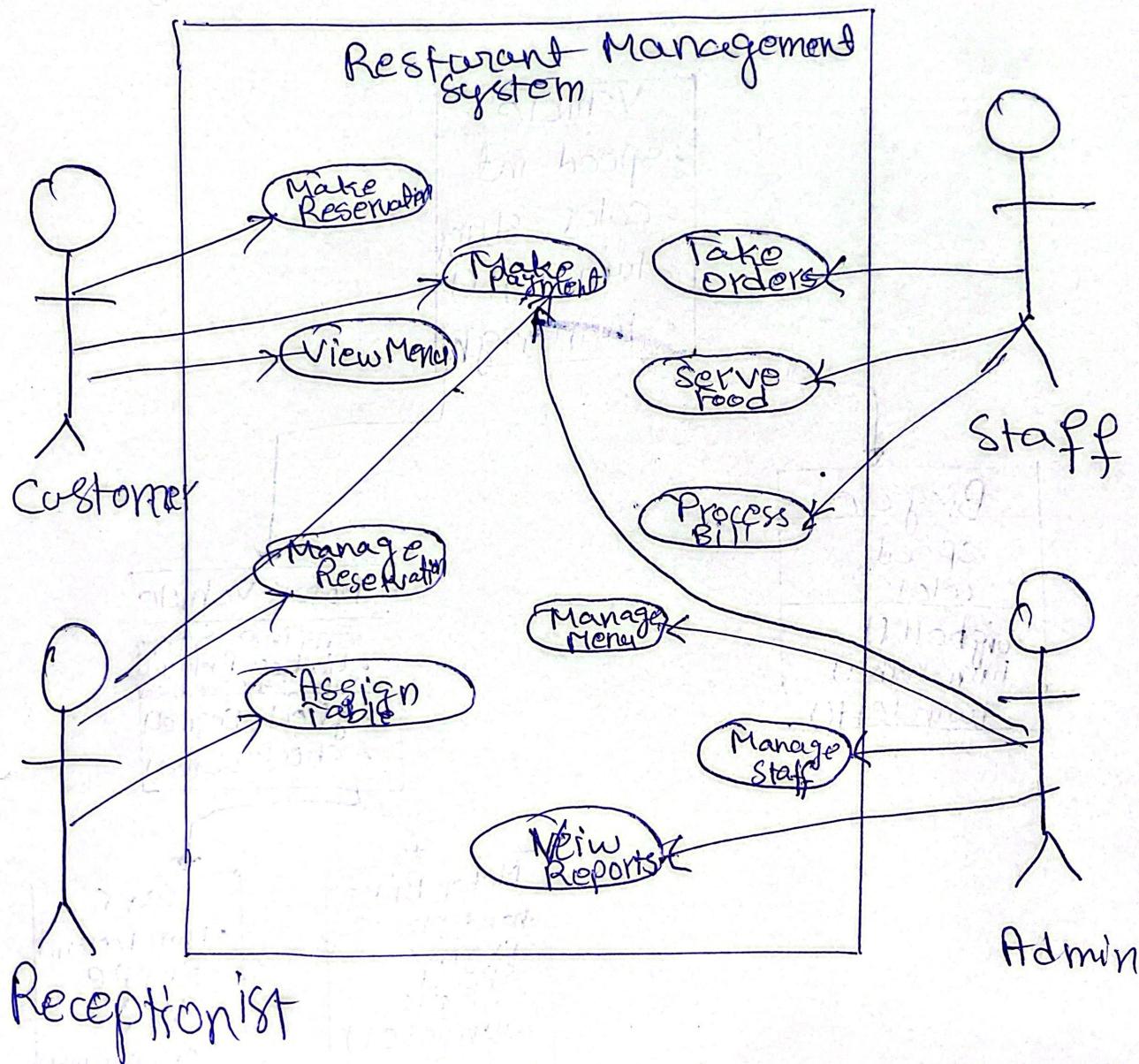


## Question #2



# Question # 3

Use Case Diagrams.



# Question # 4:

## Vehicle Hierarchy

