# DataBase Assignment #1
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CS-G used Lucid Chart
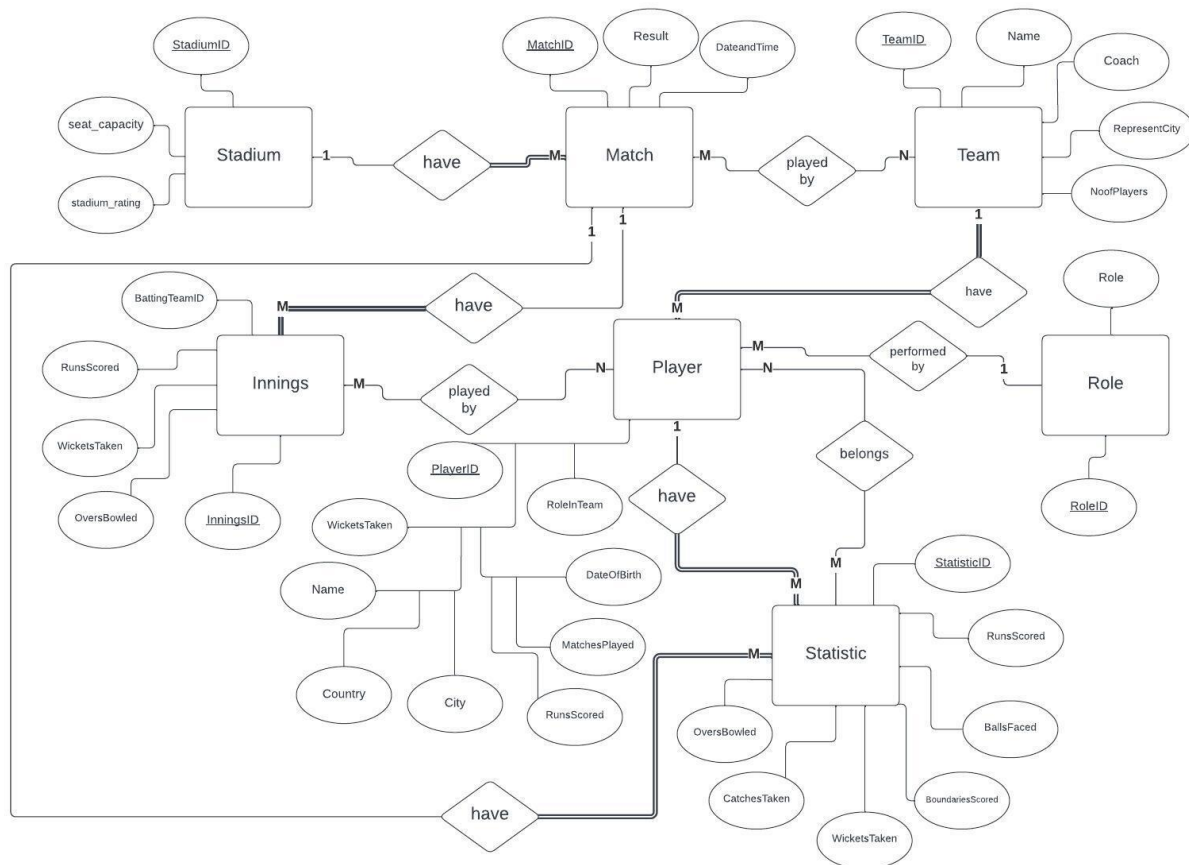
Case Study 1.
NaSCon

The ERD for NaSCon Management System should efficiently manage all event records. The system should have a management hierarchy with a president, VP, and departmental executives. Each event category should have an event head, and details should include time, date, registration, prizes, and participants from FAST and other universities. Teams should also be managed. Sponsor organizations should have a name, representative, CNIC, and event/category of sponsorship. Each sponsor can sponsor multiple events, and events can have multiple sponsors. The focus should be on efficiency and organization for easy tracking and management of all aspects of the event.
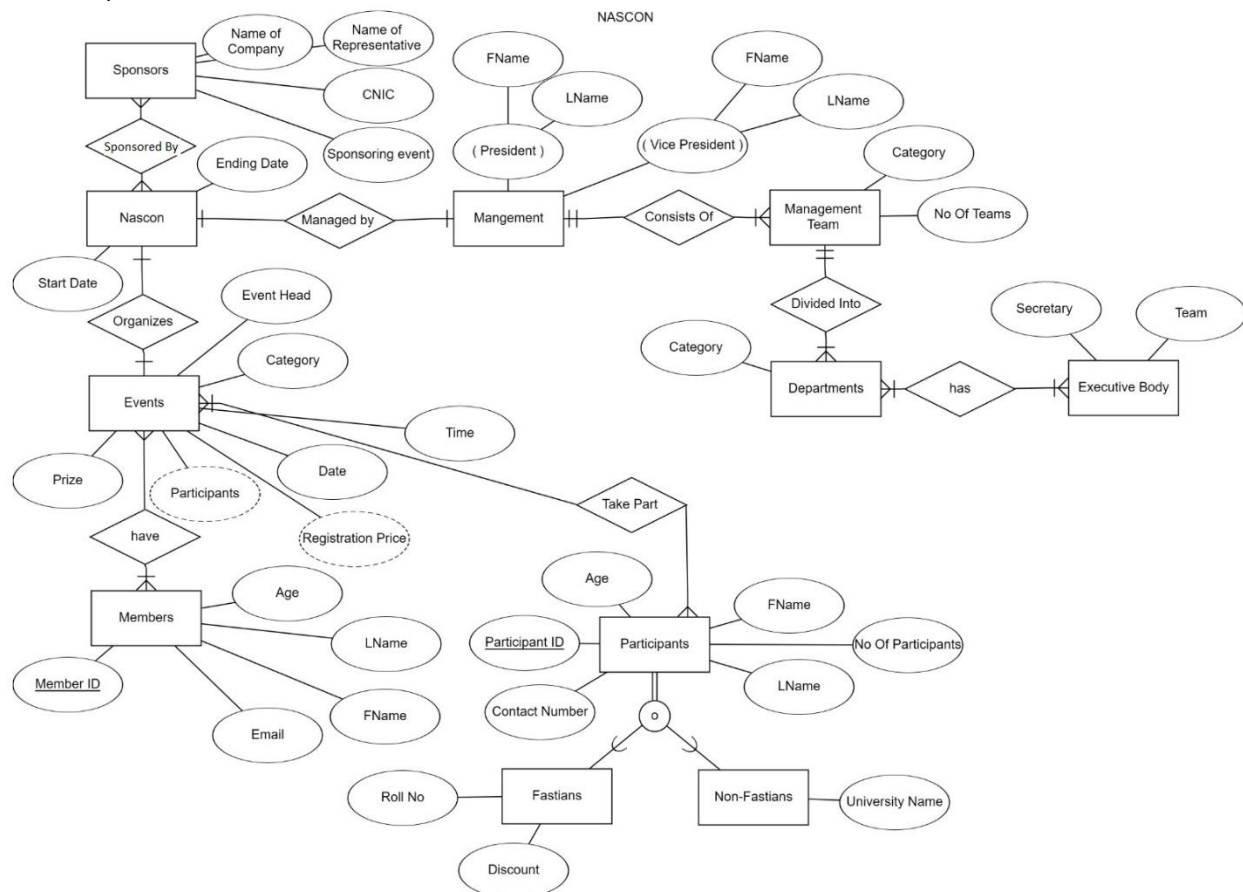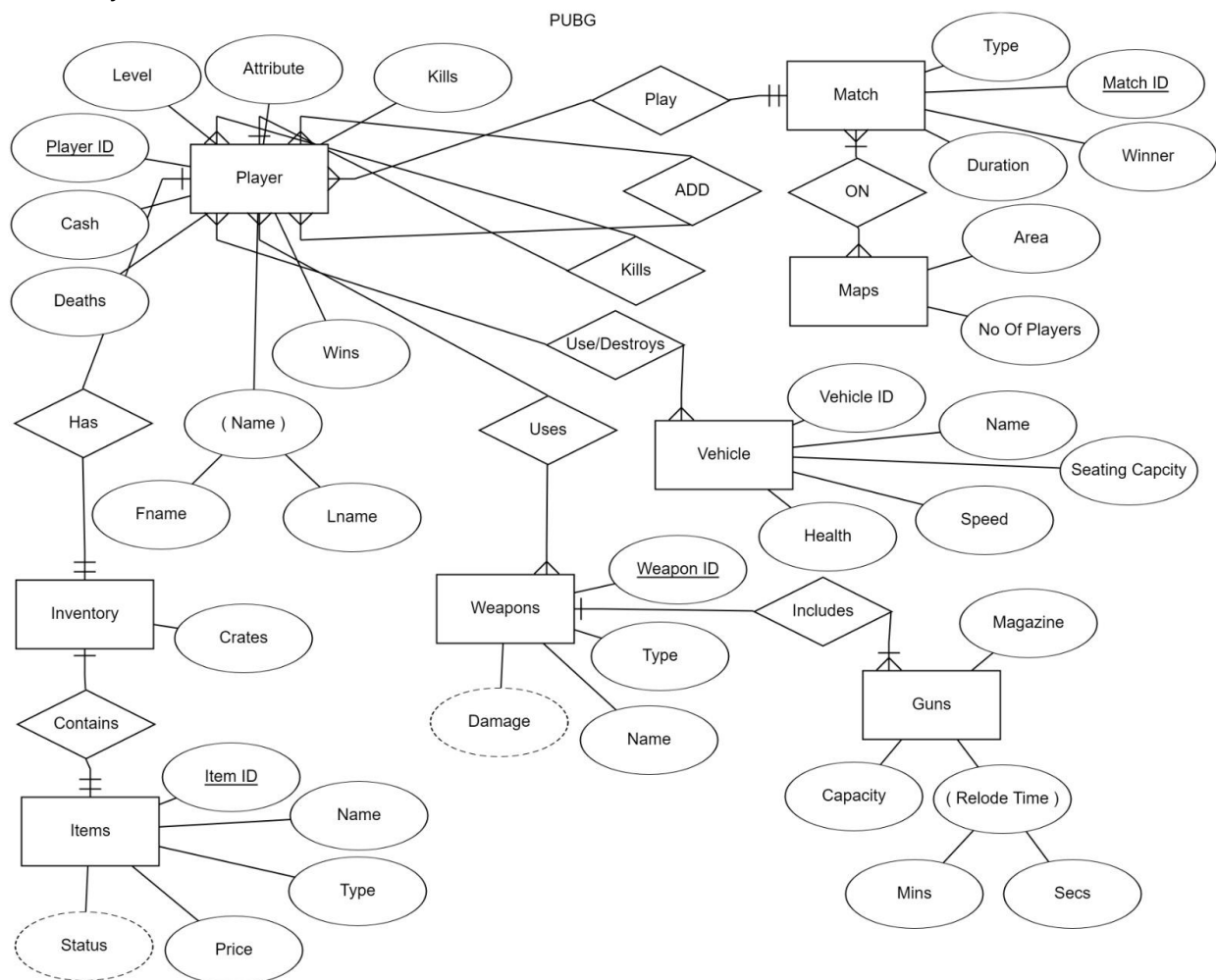
Case Study 2.
PSL

The ERD designed for the Pakistan Super League (PSL) case study accurately represents the relationships and attributes of the entities involved. The entities in the ERD are Stadium, Match, Team, Player, Statistic, and Inning. Each entity has its own unique identifier, such as Stadium ID, Match ID, Team ID, Player ID, Statistic ID, and Inning ID. The relationships between the entities are clearly defined by foreign keys, such as the Match ID in the Inning Entity, the Stadium ID in the Match Entity, and the Team ID in the Player Entity. The ERD also identifies the total and partial participation of each entity in its relationships, which helps in understanding how the entities are connected. The ERD does not include any weak entity or relationship, as each entity has its own unique identifier and can be uniquely identified by its attributes alone. The ERD also includes attributes such as date, time, location, seating capacity, runs scored, wickets taken, overs bowled, etc., which accurately represent the attributes of the entities in the PSL case study. Overall, the ERD is well-designed, accurate, and represents the relationships and attributes of the entities in the PSL case study in a clear and concise manner.

Case Study 3.
PUBG

Design an ERD for a database management system for the popular online survival game PUBG. The system should efficiently store and manage player information, match details, inventory management, weapons, and vehicles. Each player has a unique ID, name, level, rank, wins, kills, cash, and deaths, and can add other players as friends. Matches can be played as solo, duo, or squad, and have a unique ID, type, map, duration, and winner. Weapons include melee, guns, and throwables, each with a unique ID, type, and damage. Vehicles have a unique ID, name, speed, and health, and can carry multiple players. Interactions, such as player kills and vehicle destruction, must be mapped as relations. Some weapons and vehicles are exclusive to certain maps. Players have an inventory with items like clothing, skins, and crates. Each item has a unique ID, name, type, price, and status, and crates can contain cash and clothing. The system should be designed to efficiently store and manage these aspects of the game for easy tracking and analysis.

Case Study 4.
LinkedIn

The ERD for the LinkedIn case study is designed to capture the main entities and relationships within the LinkedIn platform. The main entities include User, Connection, Company, Job, Post, Like, and Comment. Each of these entities has a set of attributes that define its properties and characteristics. For example, the User entity includes attributes such as UserID, Name, Email, Password, and Bio.

The relationships between entities are based on foreign keys, which are used to establish connections between entities. For example, the Connection entity includes foreign keys that reference the primary keys of the User entity to establish a connection between two users. Similarly, the Job entity includes a foreign key that references the Company entity to identify the company offering the job.

The ERD also includes cardinality and participation constraints that specify the relationships between entities. For example, the cardinality constraint between the User and Connection entities is one-to-many, which means that a user can have many connections, but a connection can only have one sender and one recipient. The participation constraint between the User and Post entities is partial, which means that a user may or may not have posts.

Overall, the ERD for the LinkedIn case study is a useful tool for visualizing the main entities and relationships within the LinkedIn platform. It captures the essential elements of the system and provides a clear understanding of how the different entities are related to each other.