Q4

1. **Donor**
   * Donor ID
   * Name
   * Contact details
   * Blood type
   * Eligibility criteria
   * Last donation date
   * Donation count (maximum of twice a year)
2. **Blood Donation Drive**
   * Drive ID
   * Date and time
   * Location
   * Organizing staff
   * Equipment
   * Transportation arrangements
3. **Inventory**
   * Blood bag ID
   * Blood type
   * Quantity
   * Expiration date
   * Status (available, reserved, expired)
   * Donation drive ID
4. **Recipient**
   * Recipient ID
   * Name
   * Blood type
   * Medical history
   * Transfusion requirement
5. **Patient Profile**
   * Patient ID
   * Name
   * Blood type
   * Medical history
   * Allergies

**Relationships with Cardinality:**

1. **Donor - Blood Donation Drive**
   * One-to-Many: A donor can participate in multiple blood donation drives, but each drive is associated with one donor.
2. **Blood Donation Drive - Inventory**
   * One-to-Many: A blood donation drive is associated with multiple inventory records, representing the blood collected during the drive.
3. **Recipient - Blood Donation Drive**
   * Many-to-Many: Multiple recipients may benefit from blood collected during a single drive, and each recipient may be associated with multiple drives.
4. **Recipient - Patient Profile**
   * One-to-One: Each recipient is associated with one patient profile containing essential medical information.

Q3

Based on the requirements outlined for the Tournament Management System (TMS) for the Pakistan Super League (PSL), we can identify several entities, their attributes, and their relationships:

1. **Team:**
   * Attributes: Team ID, Team Name, Owner, Coach, Total Budget, Current Squad
   * Relationships: One team can have many players (one-to-many).
2. **Player:**
   * Attributes: Player ID, Player Name, Nationality, Playing Role, Base Price, Minimum Bidding Amount
   * Relationships: Many players can belong to one team (many-to-one).
3. **Match:**
   * Attributes: Match ID, Date, Time, Venue, Status (Scheduled, Ongoing, Completed)
   * Relationships: Matches involve two teams (many-to-many), and each match occurs at one venue (many-to-one).
4. **Venue:**
   * Attributes: Venue ID, Venue Name, Location, Capacity, Facilities
   * Relationships: One venue hosts many matches (one-to-many).
5. **Ticket:**
   * Attributes: Ticket ID, Match ID, Price, Availability, Sales
   * Relationships: Many tickets belong to one match (one-to-many).
6. **Umpire/Referee:**
   * Attributes: Official ID, Name, Role, Experience
   * Relationships: Many officials can be assigned to one match (many-to-one).
7. **Result:**
   * Attributes: Result ID, Match ID, Winning Team, Losing Team, Man of the Match
   * Relationships: One match has one result (one-to-one).

Assumptions:

* It's assumed that there's a need for a separate entity for the management of player drafts, including attributes such as Draft ID, Draft Date, and Draft Status.
* The system may need additional entities for administrative users, authentication, and authorization.
* Relationships and cardinalities may vary based on the specific requirements and implementation details of the TMS.

1. **Team - Player:**
   * Relationship: One-to-Many
   * Cardinality: One team can have many players, but each player belongs to only one team at a time.
2. **Match - Team:**
   * Relationship: Many-to-Many
   * Cardinality: Each match involves two teams, and each team plays in multiple matches.
3. **Match - Venue:**
   * Relationship: Many-to-One
   * Cardinality: Each match takes place at one venue, but a venue can host multiple matches.
4. **Ticket - Match:**
   * Relationship: One-to-Many
   * Cardinality: Each ticket is associated with one match, but a match can have multiple tickets available for sale.
5. **Umpire/Referee - Match:**
   * Relationship: Many-to-One
   * Cardinality: Many umpires/referees can be assigned to one match, but each umpire/referee is assigned to only one match at a time.
6. **Result - Match:**
   * Relationship: One-to-One
   * Cardinality: Each match has one result, and each result corresponds to one match.