IST 659 Final Project
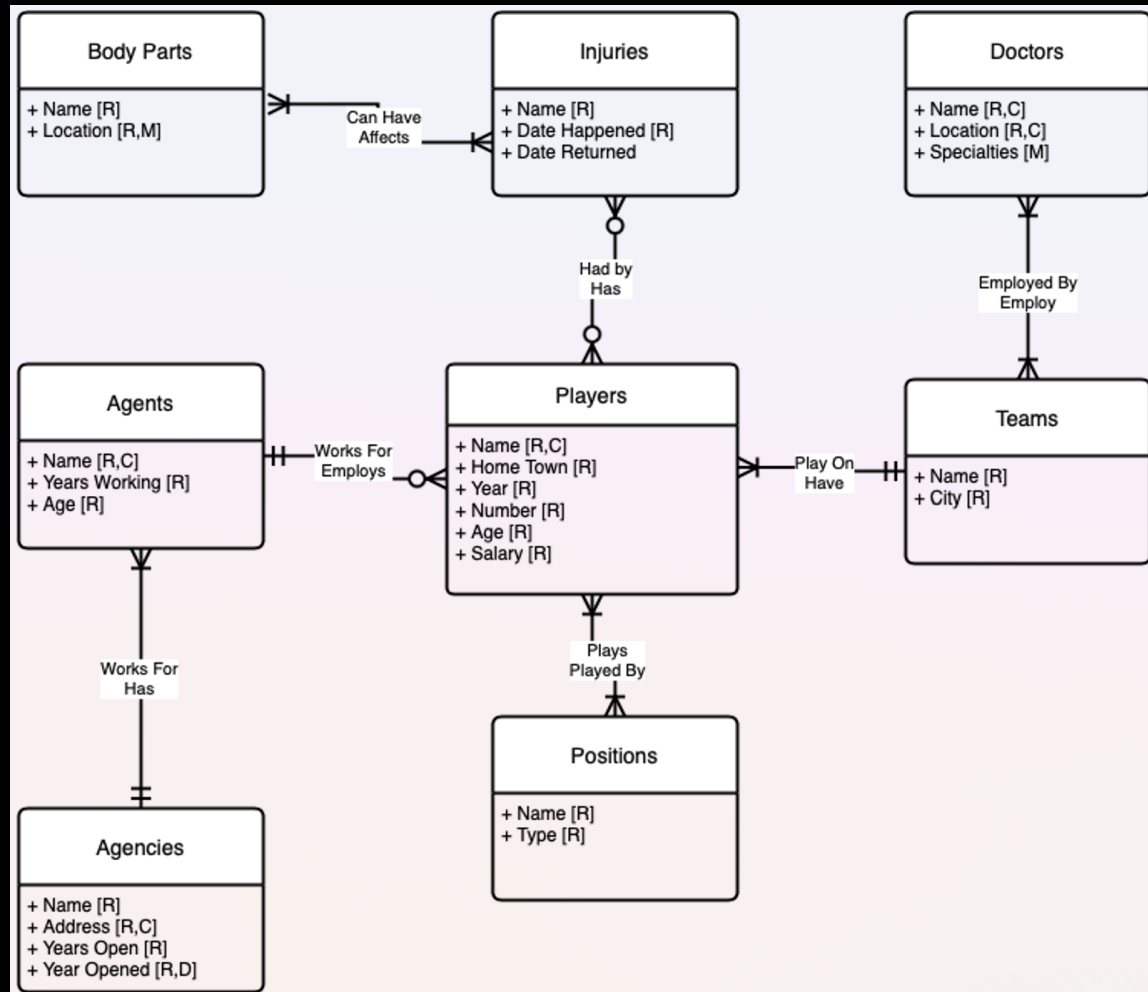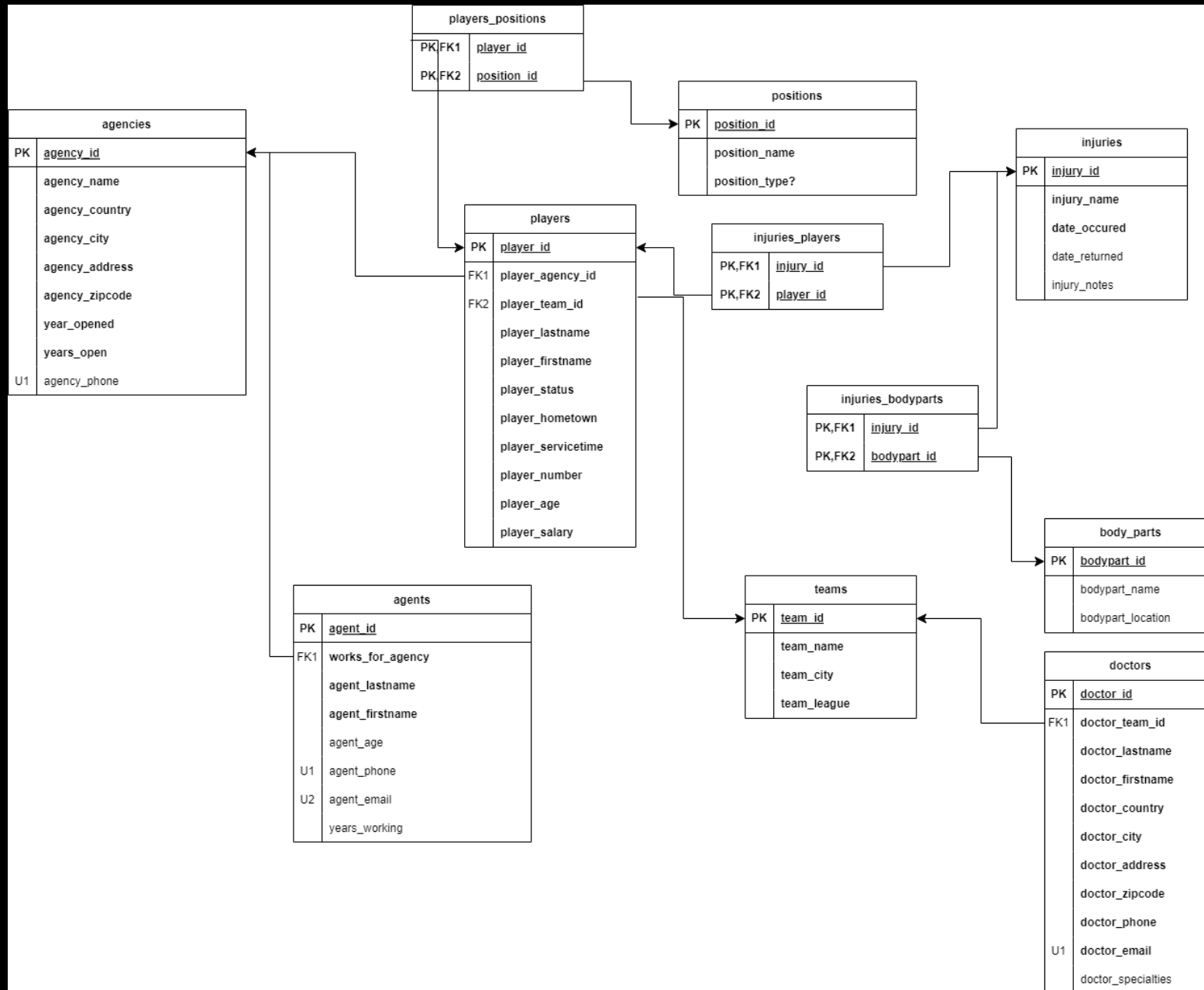
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Data Summary

- MLB information from 2023-2024 season
- Data includes:
  - Players
  - Teams
  - Positions
  - Agents
  - Agencies
  - Injuries
  - Body Parts
  - Doctors

Conceptual Model

Logical Model

User Stories

We want to be able analyze the relationship in the MLB between Teams, Players, and Injuries

Find current injured players and report their player/injury information

Track the players' agent and the agencies they work for

Compare medical staff personnel across all teams

User Story 1

▶ Who are the players who have been injured the longest?

```sql
SELECT
    p.player_id,
    p.player_firstname,
    p.player_lastname,
    i.date_occurred AS injury_date,
    DATEDIFF(DAY, i.date_occurred, GETDATE()) AS days_injured,
    i.injury_name
FROM players p
JOIN injuries_players ip ON p.player_id = ip.player_id
JOIN injuries i ON ip.injury_id = i.injury_id
WHERE i.date_returned IS NULL
ORDER BY i.date_occurred ASC;
```

Results Messages

	player_id	player_firstname	player_lastname	injury_date	days_injured	injury_name
1	2	Felix	Bautista	2023-09-30 00:00:00.000	206	UCL Tear
2	13	Royce	Lewis	2024-02-24 00:00:00.000	59	Meniscus Tear
3	9	Sawyer	Gipson-Long	2024-03-01 00:00:00.000	53	Groin Strain
4	11	Michael	Massey	2024-03-26 00:00:00.000	28	Low Back Strain
5	4	Lucas	Giolito	2024-03-28 00:00:00.000	26	UCL Tear

▶ Who are the players who have been injured most recently?

```sql
SELECT
    p.player_id,
    p.player_firstname,
    p.player_lastname,
    i.date_occurred AS injury_date,
    DATEDIFF(DAY, i.date_occurred, GETDATE()) AS days_injured,
    i.injury_name
FROM players p
JOIN injuries_players ip ON p.player_id = ip.player_id
JOIN injuries i ON ip.injury_id = i.injury_id
WHERE i.date_returned IS NULL
ORDER BY i.date_occurred DESC;
```

	player_id	player_firstname	player_lastname	injury_date	days_injured	injury_name
1	22	Jenson	Davis	2024-04-22 00:00:00.000	1	ACL Tear
2	24	Andrew	Taylor	2024-04-21 00:00:00.000	2	Elbow Tendonitis
3	34	Brandon	Robinson	2024-04-20 00:00:00.000	3	Plantar Fasciitis
4	18	Sarah	Brown	2024-04-20 00:00:00.000	3	Hamstring Strain
5	26	Matthew	Thomas	2024-04-19 00:00:00.000	4	Quad Strain

User Story 2

▶ What teams have the most amount of doctors on their staff?

```
270
271    select top(3) |
272    doctor_team_id, team_name, team_city, count(*) as team_doctor_number
273    from doctors
274    JOIN
275        teams on doctor_team_id = team_id
276    group by doctor_team_id, team_name, team_city
277    order by team_doctor_number desc
```

Results   Messages

	doctor_team_id	team_name	team_city	team_doctor_number
1	9	Rockies	Colorado	6
2	1	Diamondbacks	Arizona	3
3	24	Giants	San Francisco	3

User Story 3

► Which agencies have the most/least amount of players?

```
SELECT TOP(3)
    a.agency_id,
    a.agency_name,
    COUNT(p.player_id) AS player_count
FROM
    players p
JOIN
    agencies a ON p.player_agency_id = a.agency_id
GROUP BY
    a.agency_id,
    a.agency_name
ORDER BY
    player_count DESC
```

	agency_id	agency_name	player_count
1	7	Rep 1 Sports	8
2	1	Wasserman	7
3	4	Excel Sports Management	7

User Story 4

▶ Who is the oldest player that is injured?

▶ Who is the youngest player that is injured?

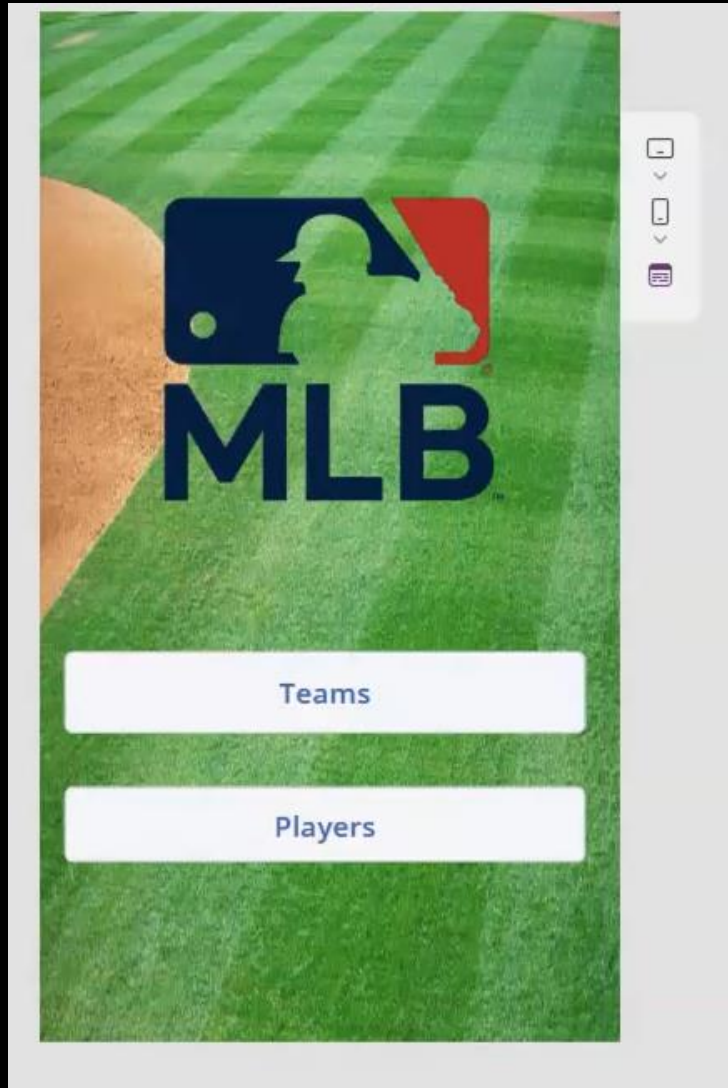|	player_status	player_id	player_firstname	player_lastname	player_age
1	Oldest Injured Player	12	Anthony	Rendon	33
2	Youngest Injured Player	7	Andres	Gimenez	25

```
WITH OldestInjuredPlayer AS (
    SELECT TOP(1)
        p.player_id,
        p.player_firstname,
        p.player_lastname,
        p.player_age
    FROM
        players p
    JOIN
        injuries i ON p.player_id = i.injury_player_id
    WHERE
        i.date_returned IS NULL
    ORDER BY
        p.player_age DESC
),
YoungestInjuredPlayer AS (
    SELECT TOP(1)
        p.player_id,
        p.player_firstname,
        p.player_lastname,
        p.player_age
    FROM
        players p
    JOIN
        injuries i ON p.player_id = i.injury_player_id
    WHERE
        i.date_returned IS NULL
    ORDER BY
        p.player_age
)

SELECT
    'Oldest Injured Player' AS player_status,
    player_id,
    player_firstname,
    player_lastname,
    player_age
FROM
    OldestInjuredPlayer

UNION ALL

SELECT
    'Youngest Injured Player' AS player_status,
    player_id,
    player_firstname,
    player_lastname,
    player_age
FROM
    YoungestInjuredPlayer
```

User Story 5

▶ Which positions tend to be the most injured on a single team?

```sql
SELECT
    pos.position_name,
    COUNT(ip.injury_id) AS injury_count
FROM positions pos
LEFT JOIN positions_players pp ON pos.position_id = pp.position_id
LEFT JOIN injuries_players ip ON pp.player_id = ip.player_id
GROUP BY pos.position_name
ORDER BY injury_count DESC;
```

	position_name	injury_count
1	Third Baseman	2
2	Starting Pitcher	1
3	Center Fielder	1
4	Closer	1
5	Relief Pitcher	1
6	Second Baseman	1
7	Shortstop	0
8	Right Fielder	0
9	Designated Hitter	0
10	First Baseman	0

PowerApps Demo