HW # 4

IM EPPS 6354; Spring 2024

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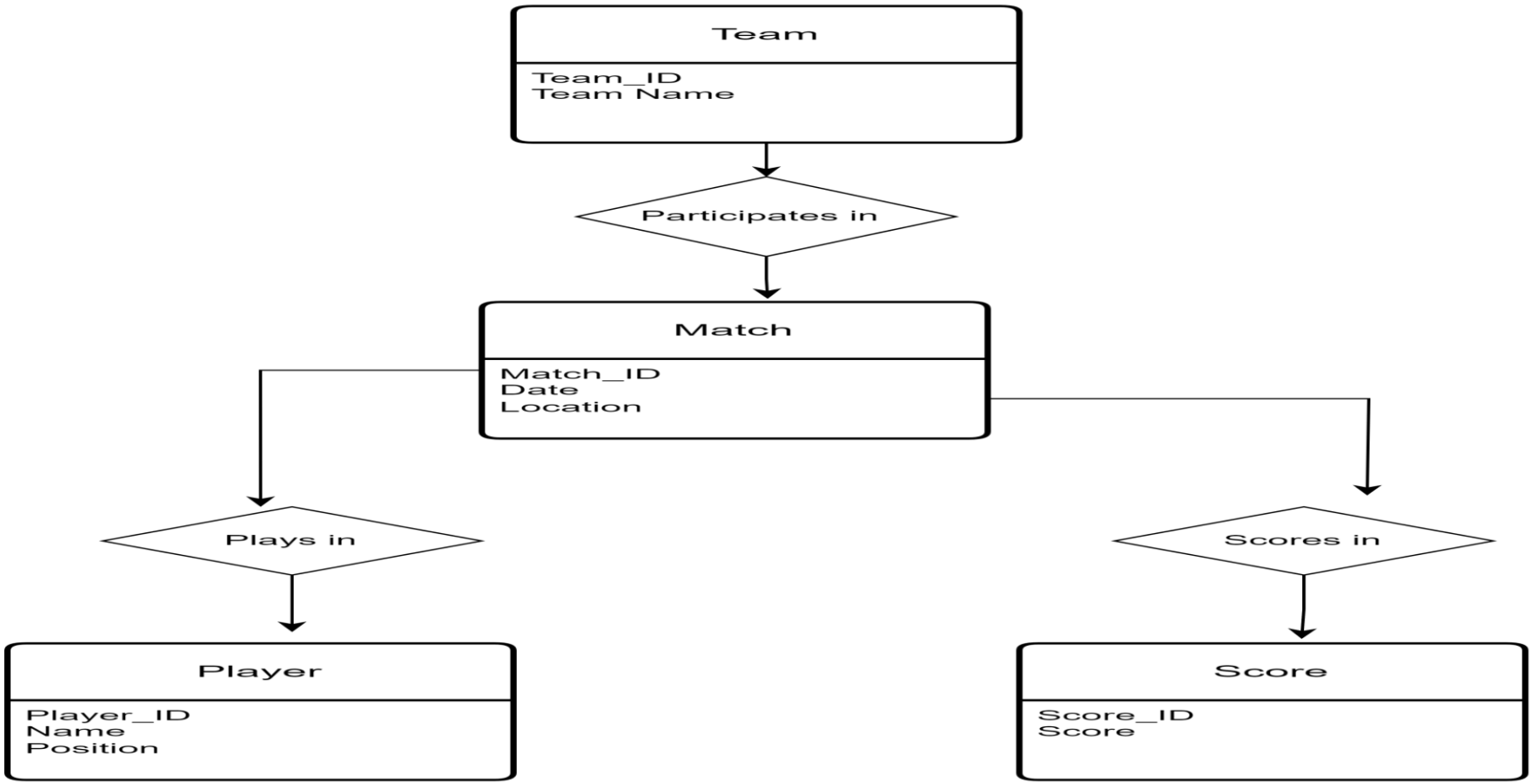
Q1 –Difference between a weak and a strong entity set

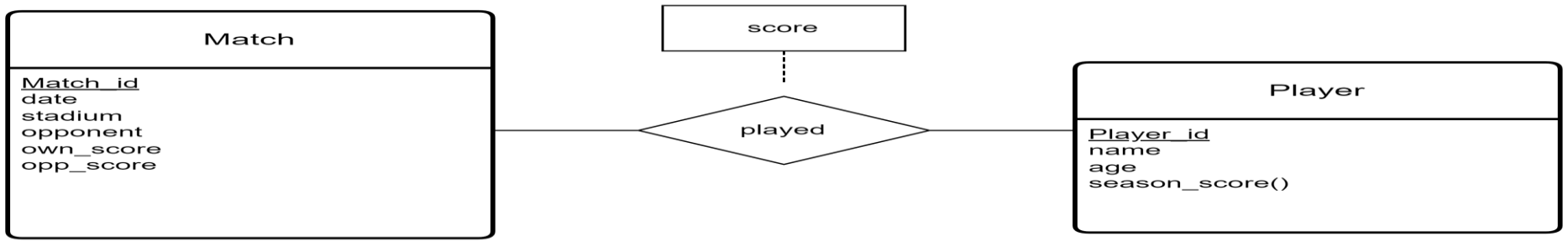
- A strong entity set is like a self-sufficient entity in our database. Its attributes alone can uniquely identify it, thanks to its primary key attribute.
- This primary key attribute is crucial as it uniquely identifies each entity within the set.
- On the other hand, a weak entity set cannot be uniquely identified by its attributes alone. It depends on another entity known as the identifying or owner entity for its identity.
- Imagine we're designing a database for a company, and we need to model the company's departments and employees. In this case, an "Employee" entity, with attributes like employee ID, could be seen as a strong entity set. This means each employee can be uniquely identified by these attributes alone. However, an entity set like "Dependent," representing the dependents of employees for insurance purposes, would likely be a weak entity set. In this scenario, a dependent's identity may depend not only on their own attributes like name and date of birth but also on the employee they are related to. This practical example clearly illustrates how weak entities rely on a related strong entity for identification, which is a fundamental difference between strong and weak entity sets.

Q2.

Design an E-R diagram for keeping track of the scoring statistics of your favorite sports team. You should store the matches played, the scores in each match, the players in each match, and individual player scoring statistics for each match.



Q2


Match
Match_id
date
stadium
opponent
own_score
opp_score
score
played
Player
Player_id
name
age
season_score()

Q3

Enter SQL commands here

```
1 select course_id, semester, year, sec_id, avg (tot_cred)
2 from takes natural join student
3 where year = 2017 group by course_id, semester, year, sec_id
4 having count (ID) >= 2;
```

Execute | Save the db | Load an SQLite database file: Choose File No file chosen

course_id	semester	year	sec_id	avg (tot_cred)
CS-101	Fall	2017	1	65
CS-190	Spring	2017	2	43
CS-347	Fall	2017	1	67

Q3.

Explain why appending **natural join** *section* in the **from** clause would not change the result. (Consult Ch. 4, 4.1.1)