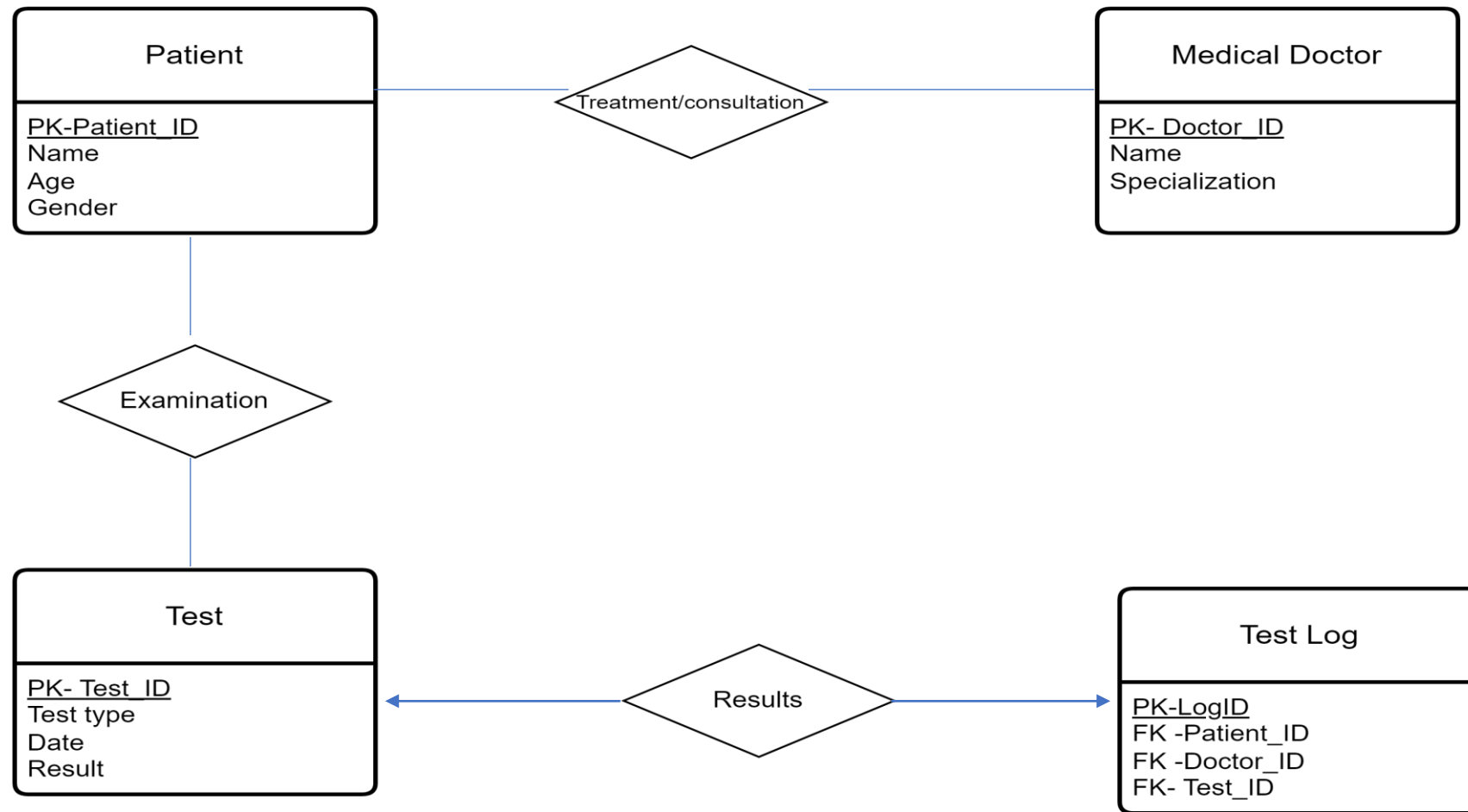


HW # 5

EPPS 6354; IM; Spring 2024

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Q.2. Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted (Hint: use miro.com to draw the diagram with relationship sets).



Q.3. We can convert any weak entity set to a strong entity set by simply adding appropriate attributes. Why, then, do we have weak entity sets?

- Weak entity sets depend on a related strong entity for their existence and cannot be uniquely identified by their attributes alone.
- Weak entity sets accurately represent scenarios where entities rely on related entities for their existence, such as hotel reservations depending on specific rooms.

Q.4 i). Find ID and name of each employee who lives in the same city as the location of the company for which the employee works.

```
SELECT e.ID, e.person_name  
FROM employee e  
JOIN works w ON e.ID = w.ID  
JOIN company c ON w.company_name = c.company_name  
WHERE e.city = c.city;
```

Q.4 i). Find ID and name of each employee who lives in the same city and on the same street as does her or his manager.

```
SELECT e.ID, e.person_name  
FROM employee e  
JOIN employee m ON e.manager_id = m.ID  
WHERE e.city = m.city AND e.street = m.street;
```

Q4.iii).Find ID and name of each employee who earns more than the average salary of all employees of her or his company.

```
SELECT e.ID, e.person_name
FROM employee e
JOIN works w ON e.ID = w.ID
JOIN (
    SELECT company_name, AVG(salary) AS avg_salary
    FROM works
    GROUP BY company_name
) AS avg_salaries ON w.company_name = avg_salaries.company_name
WHERE w.salary > avg_salaries.avg_salary;
```

Q 4.b). Consider the following SQL query that seeks to find a list of titles of all courses taught in Spring 2017 along with the name of the instructor. select name, title from instructor natural join teaches natural join section natural join course where semester = 'Spring' and year = 2017 What is wrong with this query? (Hint: check book website)