

Assignment 5

presented by

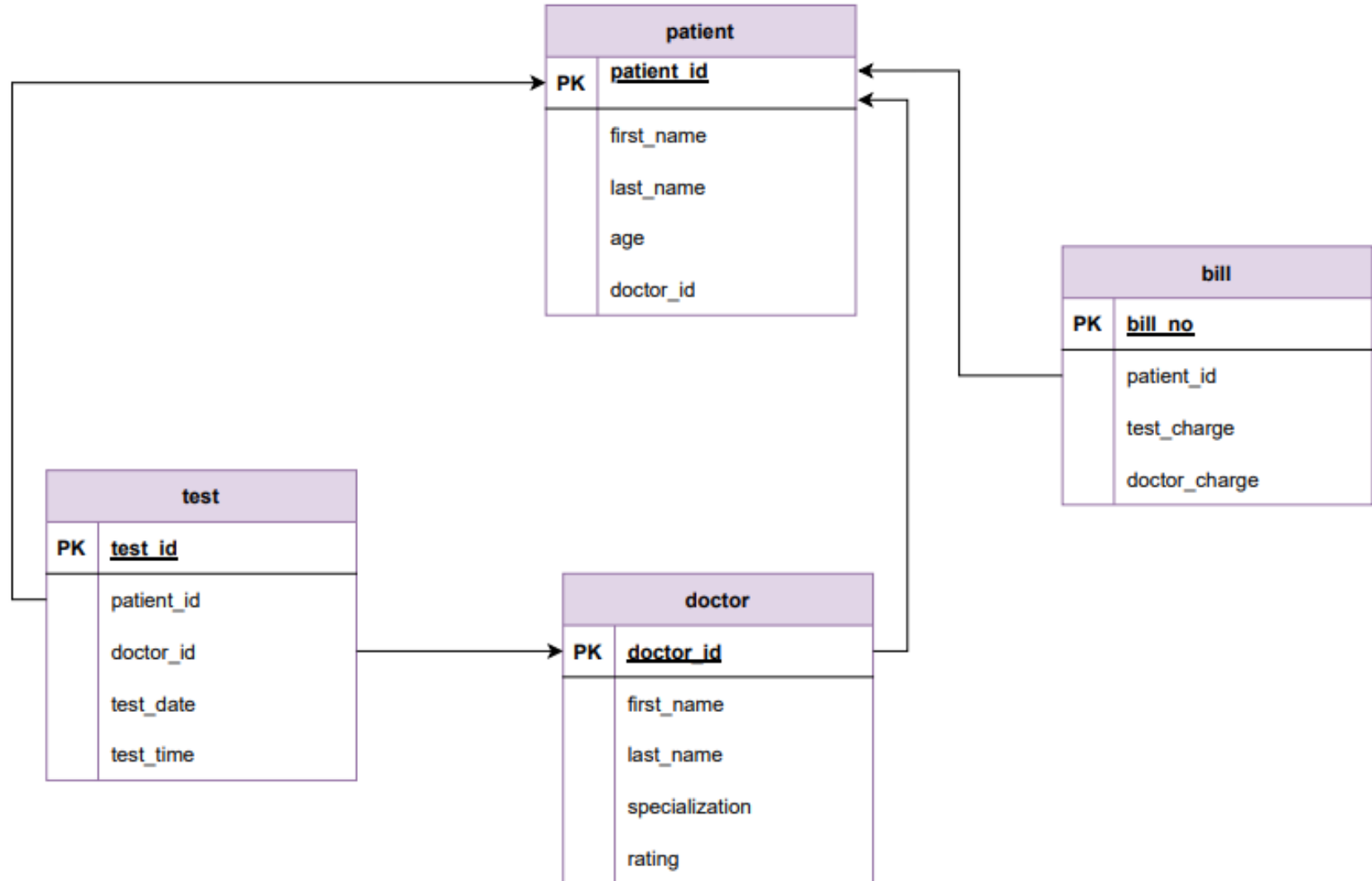
Sharon Jepkosgei

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Question Two

Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors, and tests.



Question Three

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:

- ✓ Show the logical structure of an entity as being dependent on another
 - ✓ Make data retrieval faster
 - weak entities are physically stored with their strong entities
 - ✓ Improve DB design making it more efficient & flexible
 - Used with entities with numerous attributes
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Question 4a

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.

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

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

i. Select e.ID, e. person_name

From employee as e natural join works as w natural join company as c

Where e.city = c.city

ii. Select e.ID and e.person_name

From employee as e natural join manages as m

Where e.city = m.city and e.street = m.street

iii. Select e.ID, e.person_name

From employee as e natural join works as w

Group by w.company_name

having w.salary > avg(w.salary)

Question 4b

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?

- The second natural join would require that the dept name attribute values from *instructor* and *course* relations be the same in addition to requiring that the course id values be the same.
- This query would then omit all pairs (instructor, course) where the instructor teaches a course in a department other than their own department.