

# Assignment 5

Kaitlyn Zhang :3



1. An E-R diagram can be viewed as a graph. What do the following mean in terms of the structure of an enterprise schema?

- a) A disconnected graph is one where two or more vertices are not connected by a path
- b) A connected graph has any of the two vertices are connected by a path





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?

A weak entity set is one that cannot be identified on its attributes alone. The purpose of weak entity sets are: avoid inconsistencies, can be stored and deleted with strong entities, and they reflect the logical structure of the strong entity they are part of.



# Consider the employee database

I. 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;





ii SELECT e.ID, e.person\_name

FROM employee e

JOIN manages m ON e.ID = m.ID

JOIN employee m2 ON m.manager\_id = m2.ID AND e.city = m2.city AND e.street  
= m2.street

WHERE e.city = m2.city AND e.street = m2.street;



```
iii 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 w.salary > (  
    SELECT AVG(salary)  
    FROM works  
    WHERE company_name = w.company_name  
);
```





## Question 5

This query assumes that there is only one instructor for every course in all of Spring 2017, when there was likely multiple instructors.

