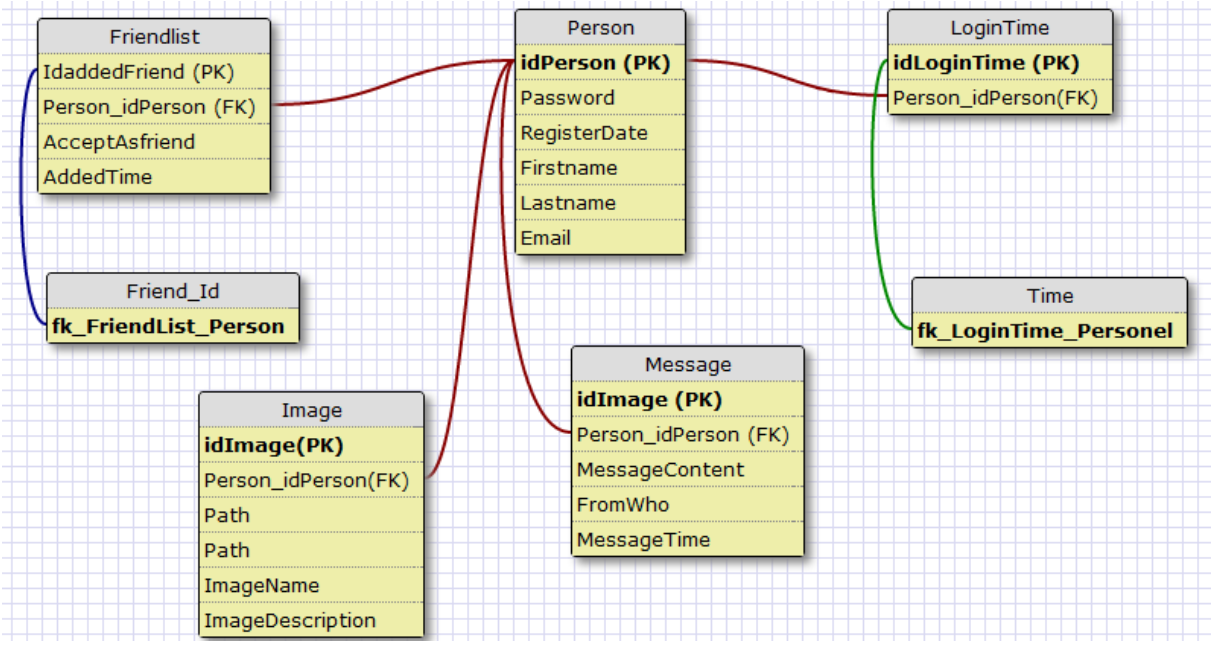
11-12 Database Büt Sınavı

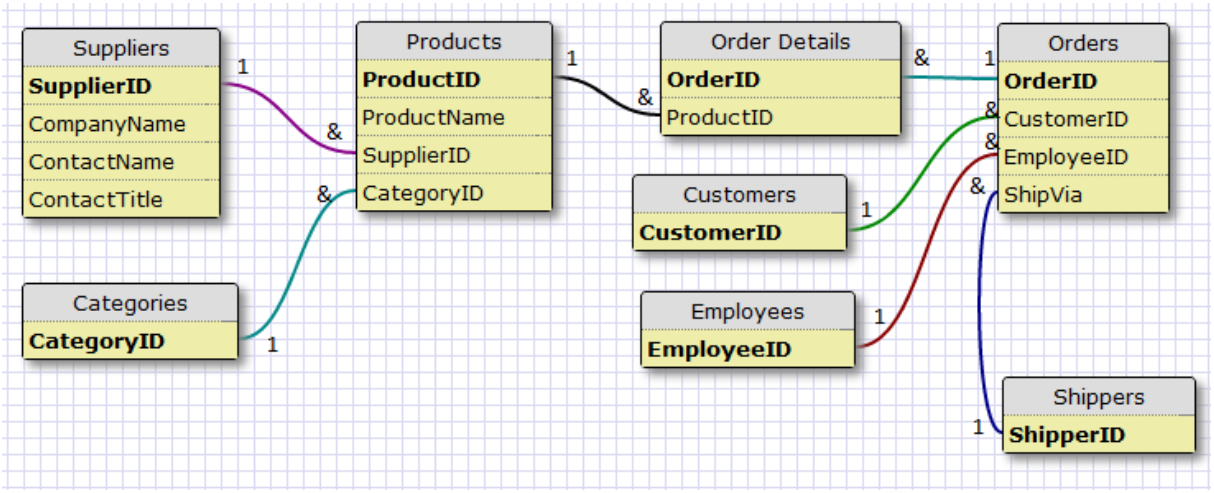
1) A student has written the following message to the forum (30)
"I want to creat a social website which people can share their photos with friends and I dont know if it is correct or there is something wrong with it. I would be very grateful if someone could have a look at it and give me some feedback on it. Here is the model in just created "



Please discuss the model amd extend it with some features that maket he model more usable intermes of the following assumptions.
*A user can rate the photo shared with her/him.
* A user can create an album and name it to organize his/her photos and also can share the album totaly.

2) Consider the following MAILORDER relational schema describing the data fora mail order company.(30)
Pants(Pno, Pname,Qoh, Price, Olevel)
Customers(Cno, Cname,Street, Zip,Phone)
Employees(Eno,Ename,Zip,Phone)
Zip_Codes(Zip, City)
Orders(One,Cno,Eno,Received,Shipped)
Odetails(Ono,Pno,Qty)
Qoh stands for quantity on hand, the other attribute names are self_explanatory, write sql statements and their equivalent relational algebra expressions fort he following natural language queries(20)
a)Retrieve the names of pants that cost less than 20TL
b)Retrieve the name of customers who have not placed not order.
c)Retrieve the pairs of customer number values of customers who live in the same Zıp code.

3) Given the database below, answer the following (a to c) sub-questions.(30)



a)Find the table which has the maximum number of foreign keys on it among the tables in the database. Write down its relationships with the other tables in the form of source table to longest table with its key attributes.

b) In the model, the attribute with the name "Company Name" belongs to Shippers, Customers, and Suppliers tables. If we assumes that "Company Names" specifies the same physical and logical attribute within the model,
does this model has same drawbacks with respect to"Company Names" attribute?
If yes, re-design the model to overcome the drawbacks. Hint Think of updating the name of a company.

c) the DBA deleted a table form the database accidentally. Which of the deleted table causes minimum data loss? Explain in details.

4) Consider the following relations for an order_processing applications database (20)
Order(O#,Cust#,Total_amount)
Order_Item(O#,I#,Qty_ordered,Total_price,Discount%)
Assume that each items has a different discount, the Total_price refers to one item, Odate is the date on which the order was placed, and the Total_amount is the amount of the order.
If we apply a natural join on the relationals Order_Item and order in this database, what does the resulting realtion schema looklike?
What will be its key?
Show the FDs in this resulting relation.
Is it in 2NF?
Is it in 3NF?
Why or Why not?
(State assumptions, if you make any.)

(bkz: aaron swartz)