

Homework #4

Name:

Student ID:

Assigned Date: 2021-11-16

1. Write the following as triggers. In each case, disallow or undo the modification if it does not satisfy the stated constraint. The database schema is as follows:

```
Product(maker, model, type)
PC(model, speed, ram, hd, price)
Laptop(model, speed, ram, hd, screen, price)
Printer(model, color, type, price)
```

- (a) When making any modification to the Laptop relation, check that the average price of Laptops for each manufacturer is at least \$1500. (15%)
 - (b) When inserting a new PC, laptop, or printer, make sure that the model number did not previously appear in any of PC, Laptop, or Printer. (15%)
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2. Design a database for a bank, including information about customers and their account. Information about a customer includes their name, address, phone, and Social Security number. Accounts have numbers, types (e.g., savings, checking) and balances. Also record the customer(s) who own an account. Draw the E/R diagram for this database. Be sure to include arrows where appropriate, to indicate the multiplicity of a relationship. (20%)
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3. For your E/R diagrams of Exercise 3, do the following:
 - (a) Change your diagram so an account can have only one customer. (10%)
 - (b) Further change your diagram so a customer can have only one account. (10%)

4. Convert the E/R diagram of Fig. 3 to a relational database schema. (30%)

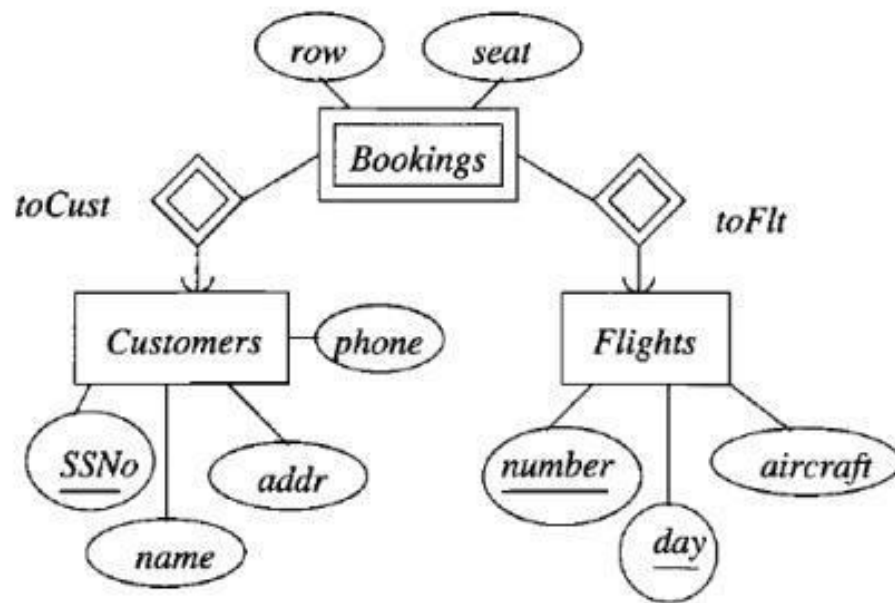


Figure 3: An E/R diagram about airlines