

The University of Georgia
Department of MIS
MIST 4610
Mid Semester Examination
Spring 2016
Answers

Data modeling

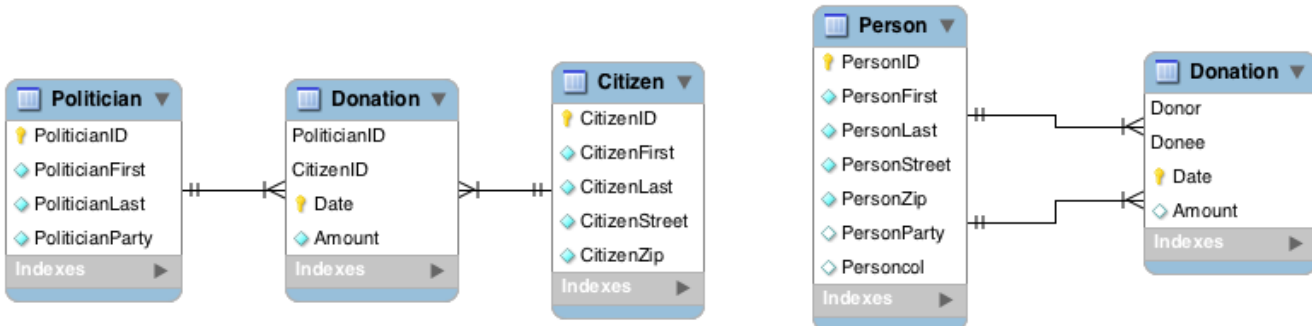
Climb (40 points)

Draw data models for these two situations:

a. (20 points)

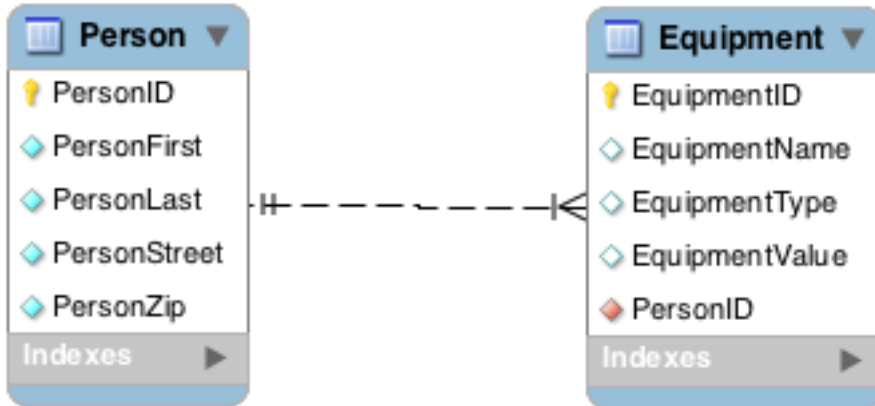
A politician can receive money from many US citizens, and the same citizen might donate to multiple politicians.

I accepted either of these answers or close variations.



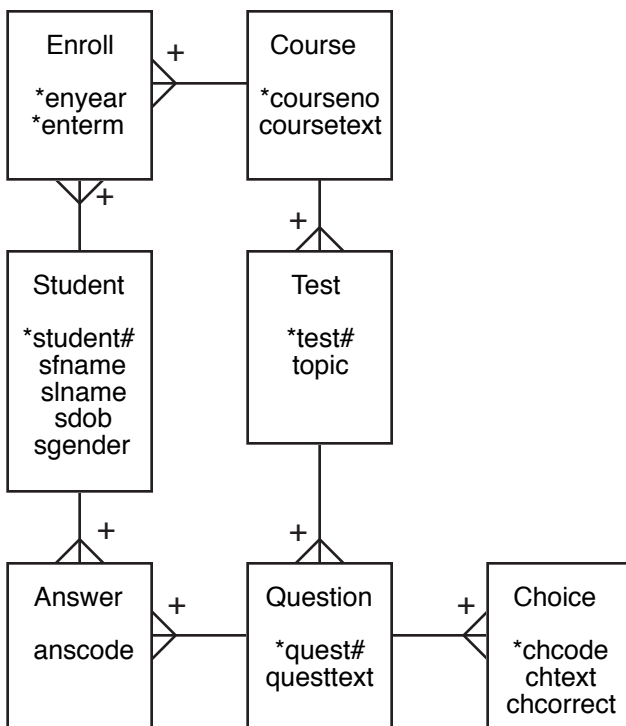
b. (20 points)

A UGA faculty member can take multiple pieces of equipment of campus, and such equipment is specifically assigned to one person.



Hike (12 points)

A firm has developed a data model for storing details of tests and responses to multi choice tests. When you map the data model to a relational database, what will be the columns, primary key, and foreign key(s) for the table Answer?



```

CREATE TABLE Answer (
anscode          INTEGER NOT NULL,
questno         INTEGER,
testno          INTEGER,
coursno         INTEGER,
studentno       INTEGER,
PRIMARY KEY(questno,testno,courseno,studentno),
CONSTRAINT fk_question FOREIGN KEY(questno,testno,courseno) REFERENCES
question(questno,testno,courseno),
CONSTRAINT fk_student FOREIGN KEY(studentno) REFERENCES student(studentno));

```

SQL

Use the ClassicModels database, the data model is on the [book web site](#), to answer the following requests using SQL.

1. How many customers does the company have in Australia?

```

SELECT count(*) FROM Customers
WHERE country = 'Australia'

```

2. Report details of all checks that exceed the average amount received. Order by amount descending.

```

SELECT checkNumber, amount FROM Payments
WHERE amount >(SELECT AVG(amount) from Payments)
ORDER BY amount DESC;

```

3. What is the value of payments received in July 2004.

```

SELECT SUM(amount) FROM Payments
WHERE MONTH(paymentDate) = 7
AND YEAR(paymentDate) = 2004;

```

4. What is the customer name and country of those customers with 'model' or 'models' in their customer name?

```

SELECT customerName, country FROM Customers
WHERE customerName REGEXP 'Model | model | Models | models';

```

Summit (30 points - 10 for each query)

5. Which customers in which country have never made an order? Order by customer name.

```

SELECT customerName, country FROM Customers
WHERE customerNumber NOT IN (SELECT customerNumber FROM Orders)
ORDER BY customerName;

```

```
SELECT customerName, country FROM Customers
WHERE NOT EXISTS (SELECT * FROM Orders WHERE
Customers.customerNumber = Orders.customerNumber)
ORDER BY customerName;
```

6. For all US customers, list the sales representative and office (i.e., city) to which that sales representative is assigned.

```
SELECT customerName, Offices.city, firstName, LastName
FROM Offices, Customers, Employees
WHERE Offices.officeCode = Employees.officeCode
AND Employees.employeeNumber = Customers.salesRepEmployeeNumber
AND Customers.country = 'USA';
```

7. Report the name of the boss and the names of his/her reporting employees.

```
SELECT boss.FirstName, boss.lastName, emp.FirstName, emp.lastName
FROM Employees emp, Employees boss
WHERE emp.reportsTo = boss.employeeNumber;
```