ISTE-230 Introduction to Database & Data Modeling

Practice Exercise # 4 – Altering a Table

Name: ____

Before you can start

Run the createCONTACT_INFO.sql and insertContact_Info.sql scripts in MySQL (from Week 3) to create a fresh version of the CONMAN database. Database should the CONTACT_INFO table, with President Destler's record inserted.

Create a script called '*yourlastname*_pe4.sql'. The file should include for each task: a comment stating the task number followed by statement(s) used.

To complete the following tasks you must change the EXISTING table. You may NOT remove the CONTACT_INFO table and re-create it.

Task 1 – Change the primary key of CONTACT_INFO

Uh oh! We have a problem. Recall the E-R diagram for the CONMAN system, there was a multi-valued, composite attribute called 'phone_info'. When we transposed the diagram into a relation, we didn't transpose the composite attribute, but instead transposed the simple attributes that made up phone_info: phone_number and phonetype_description.

Our transposition was correct, however to allow multiple phone_numbers and phonetype_descriptions to be entered we would have to create multiple tuples/records for the respective contact. For example to illustrate consider the shortened insert statements below:

```
INSERT INTO contact_info (contactID, firstname, lastname, phone_number,
phonetype_description) VALUES (10,'Jessica','Smith','888-888-8888','work');

INSERT INTO contact_info (contactID, firstname, lastname, phone_number,
phonetype_description) VALUES (10,'Jessica','Smith','999-99-9999','cell');
```

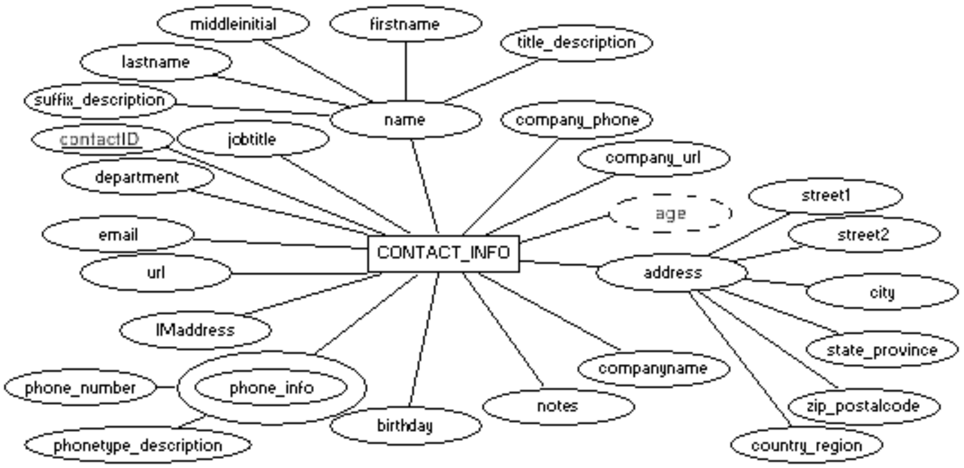
If you were to run these statements the first insert would be added, but when the second statement is run, an error occurs (ERROR 1062 (23000): Duplicate entry '10' for key 'PRIMARY') because we are trying to add a second record with an existing contactID.

Given that, contactID shouldn't serve by itself as the primary key. However, if the primary key is changed from contactID to contactID and phone_number, then we could add both of Jessica's records without error. (This solution is not the most elegant way to handle the situation. We will be learning a better way later in the course.)

Compose the statement(s) needed to change the primary key of CONTACT_INFO from contactID to contactID and phone_number. Add this statement to your script file.

Verify that you can now insert the record for Jessica's cell phone. This should not be included in the script that you submit for the PE; it is just to test the constraint.

Contact Management System (Conman)



Resulting Relation: CONTACT_INFO(contactID, firstname, middleinitial, lastname, suffix_description, title_description, jobtitle, department, email, url, IMaddress, phone_number, phonetype_description, birthday, notes, companyname, street1, street2, city, state_province, zip_postalcode, country_region, company_url, company_phone)

Task 2 – Change existing attributes

Now that the previous situation has been addressed, let's focus on changing an existing attribute. Compose statements that will change the following attribute specifications:

Attribute	**New Specification**
firstname	A variable length string capable of storing up to 15 characters. A value is required. If a value isn't specified 'UNKNOWN' should appear.
lastname	A fixed-length string capable of storing up to 30 characters. A value is required. If a value isn't specified 'UNKNOWN' should appear.

Task 3 – Add a record

Create a statement that will add a record to the contact_info table without specifying values for firstname and lastname. You can test if your addition worked properly by executing the following statement and seeing that 'UNKNOWN' was used for both the firstname and lastname for the contact just added.

```
mysql> SELECT contactId, firstname, lastname FROM contact_info;

+-----------+-----------+----------+
| contactId | firstname | lastname |
+-----------+-----------+----------+
|         1 | William   | Destler  |
|        10 | Jessica   | Smith    |
|        10 | Jessica   | Smith    |
|        11 | UNKNOWN   | UNKNOWN  |
+-----------+-----------+----------+
4 rows in set (0.00 sec)
```

Task 4 – Add a new attribute

Create a statement that will add an attribute called 'owes' that will hold the amount of money that a contact may owe you. 'Owes' should be capable of storing the amount in the format ####.##.