Tisinger IST 659 Homework 2

Questions

Answer these questions using the problem set submission template. For any screenshots provided, please follow the guidelines for submitting a screenshot.

1. Does a table consist of data or metadata? Explain.

   The best response to this question is that a table can consist of Data and Metadata. The perfect example would be a table of customer orders. There is data about the customer such as a name, address, email, and product type. While the metadata may be as simple as, seeing that the phone number data could be a string or integer type. Etc.… Metadata is data about data. If we have data, then we have metadata.

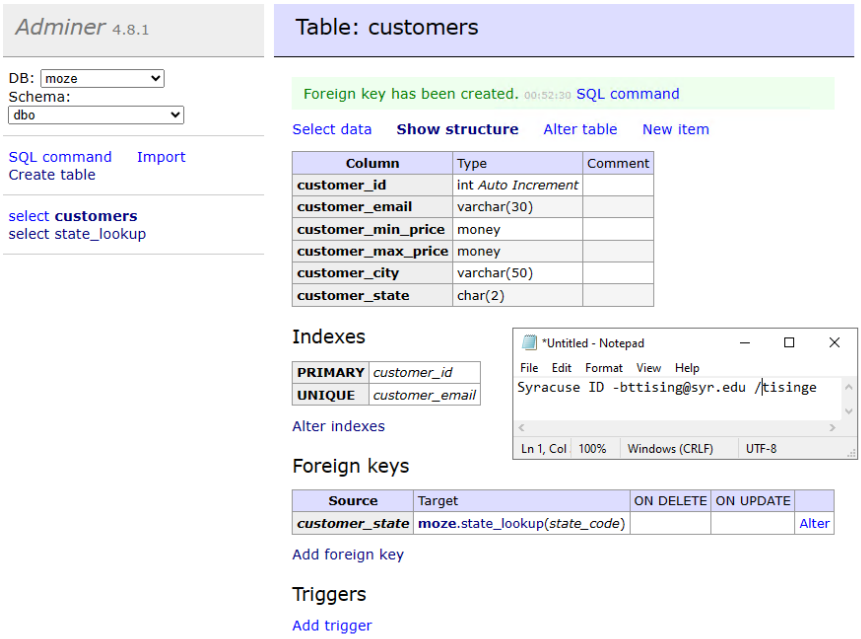
2. Describe what happens when you attempt to insert 200 characters into a column with a data type of varchar (50)?

   This answer depends on the DBMS system that is being used. I would for starters see what the maximum length is for the Varchar data type. If the maximum length is above 200 characters, then it will insert all the characters. If the maximum length is less than 200 characters, then it will truncate the data until it reaches the maximum length of the DBMS, if there is any extra data it will be deleted after the maximum.

3. How do we enforce entity integrity over a table that uses a surrogate primary key?

   The best way to do this would be to maybe use a unique constraint?
   You might be able to create a unique constraint so that no rows have the same data. This helps with duplicate data. You could also link to other tables using surrogate and foreign keys so that it maintains integrity. You could also have the option to create database triggers to enforce rules for certain tables.

4. Provide a screen shot of your completed **customers** table, including columns, indexes, and foreign keys.



5. Implement the **contractors** table as defined in the overview section. Include columns, indexes, (PK/unique), and foreign keys. Provide a screen shot of the table structure screen in Adminer and include the columns, indexes, and foreign keys sections.

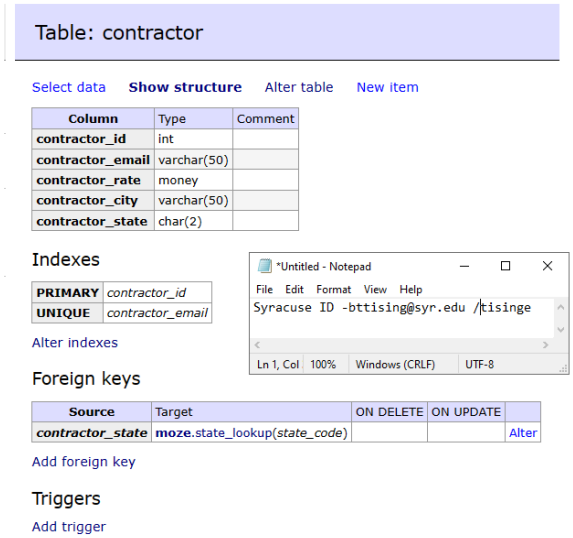


Table: contractor

Select data **Show structure** Alter table New item

Column	Type	Comment
contractor_id	int	
contractor_email	varchar(50)	
contractor_rate	money	
contractor_city	varchar(50)	
contractor_state	char(2)	

Indexes

PRIMARY	*contractor_id*
UNIQUE	*contractor_email*

Alter indexes

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Foreign keys

Source	Target	ON DELETE	ON UPDATE	
contractor_state	**moze**.state_lookup(*state_code*)			Alter

Add foreign key

Triggers

Add trigger

6. Implement the **jobs** table as defined in the overview section. Include columns, indexes (PK/unique), and foreign keys. Provide a screen shot of the table structure screen in Adminer and include the columns, indexes, and foreign keys sections.

Table: jobs

Select data **Show structure** Alter table New item

Column	Type	Comment
job_id	int	
job_submitted_by	int	
job_requested_date	date	
job_contracted_by	int *NULL*	
job_service_rate	money *NULL*	
job_estimated_date	date *NULL*	
job completed_date	date *NULL*	
job_customer_rating	int	

Indexes

PRIMARY	*job_id*

Alter indexes

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Foreign keys

Source	Target	ON DELETE	ON UPDATE	
job_contracted_by	**moze**.contractor(*contractor_id*)			Alter
job_submitted_by	**moze**.customers(*customer_id*)			Alter

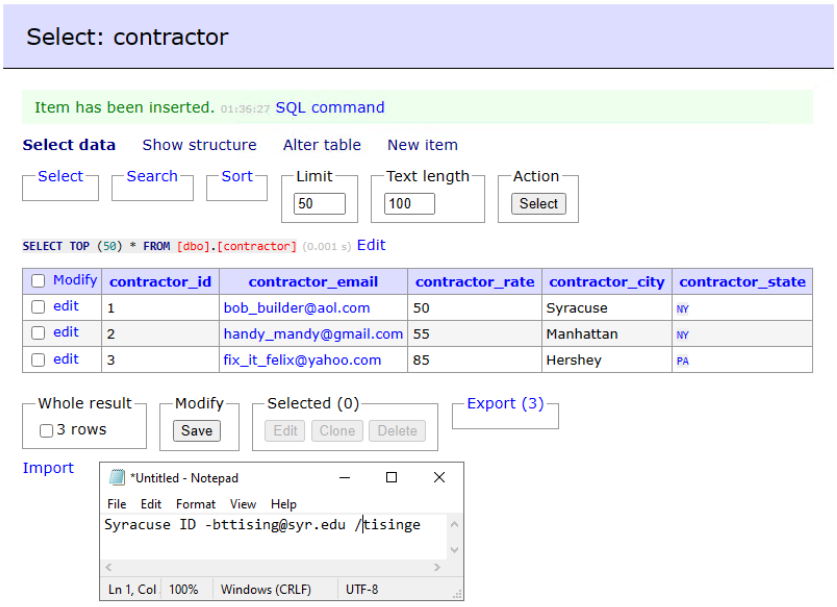
Add foreign key

Triggers

Add trigger

Couldn't quite figure out the Check requested_date=<=estimated_date and estimated_date<=completed_date and validate the date request after the foreign keys.

7. Add three contractors to the **contractors** table, and provide a screenshot of the Select Data screen as evidence they were added.



8. Can you add two contractors with the same email address? Explain.

   You cannot add 2 contractors with the same email address. We have a unique key added to the email_address field on the contractor table to make sure all values are unique.

9. Can you add a contractor from the state of MA? Explain.

No, you cannot, we have specified a foreign key to check the state_code from the state_lookup table. We have only fed it data for NY, PA , NJ & CT. MT is not in that stored data. This should give you an error.