ISTE-608 Database Design and Implementation

Homework #6 – Implementing a Relational Schema using SQL

DUE: Monday, October 8, 2018 by 11:59pm

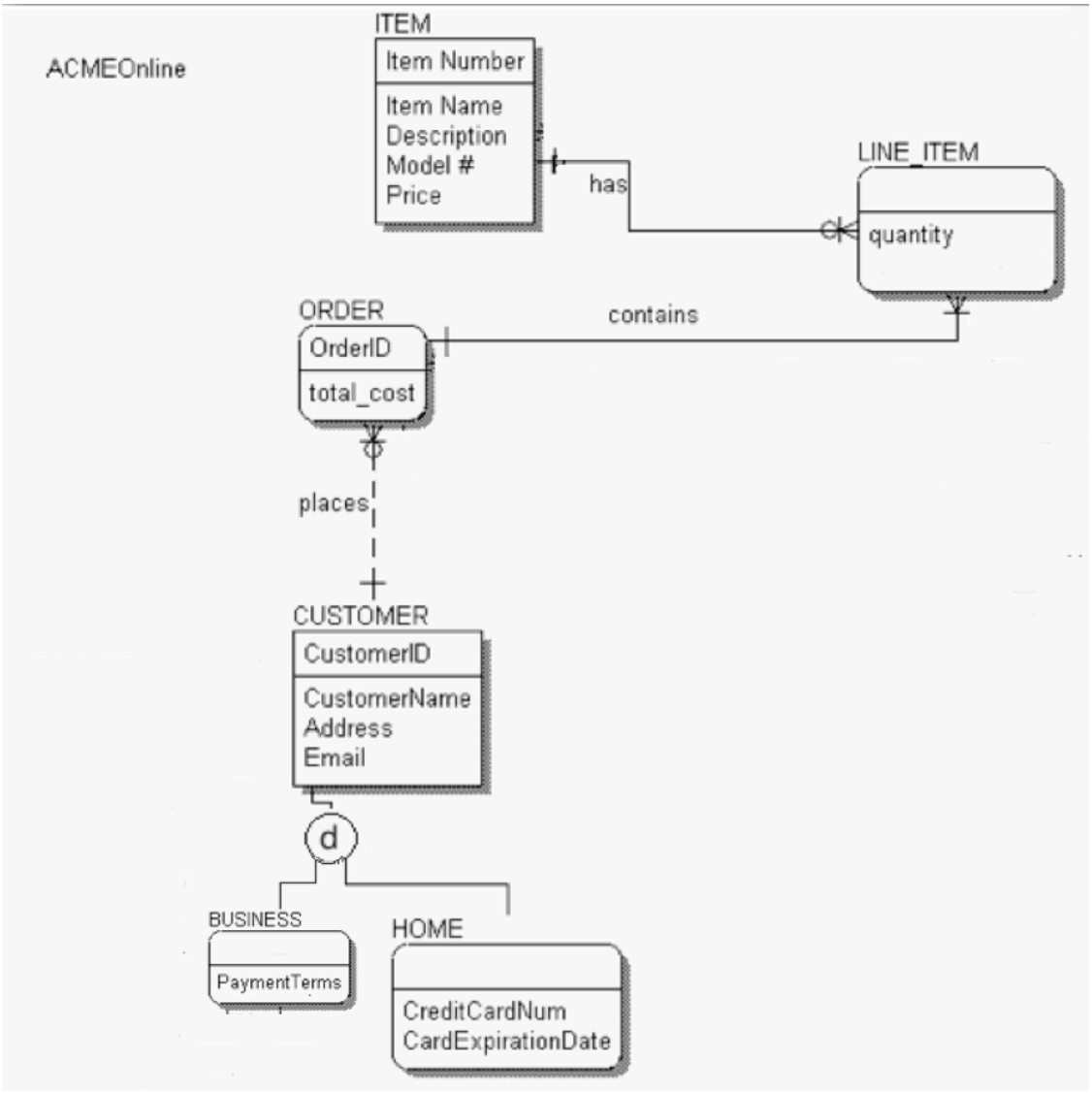
Submit your script to the HW#6 Dropbox by the deadline.

(It may be helpful to right-click on the  icon and select Hide Spelling Errors and Hide Grammatical Errors.)

An E-R diagram and transposed relations for ACME Online have been developed and given to you for analysis. Create a script, called '*yourlastname*_HW6.sql' that will include all statements that will create a database called '*yourlastname*_ACMEOnline' and the tables that will implement the relational schema meeting provided specifications. Make sure that your statements are in a sequence that will execute without errors.

Be sure to include appropriate constraints (primary key, foreign key, etc). Constraints should be table level, except for NOT NULL, and be named appropriately (table_pk for primary key; table_attr(s)_fk for foreign key). For foreign key attributes, you will need to determine the data type and whether or not a NOT NULL constraint is needed.

Your script will also need to include the statements necessary to add the requested data to the tables as well as make the requested changes to the user data and the structure. Basically, every statement you need to execute to meet the specifications in this document should be included in your script file.



ACMEOnline relations:

ITEM(Item Number, Item Name, Description, Model, Price)

- Item_Number an integer that will store only positive values and automatically increment by 1 when a record is inserted.
- Item_Name should store up to 35 characters. A value is required.
- Description should store up to 255 characters.
- Model should store up to 50 characters. A value is required.
- Price should be able to store digits in the format ######.##. A value is required.

LINE_ITEM(*Item Number, OrderID*, quantity)

LINE_ITEM(Item Number) mei ITEM(Item Number)

LINE_ITEM(OrderID) mei ORDERED(OrderID)

- Quantity should be capable of storing a whole number up to 255 only.
- If an OrderID in ORDERED is changed, then the change should be reflected here as well.
- If an ORDERED is deleted, then any LINE_ITEM(s) associated with that order should also be deleted.
- If the Item_Number of an ITEM is changed, then the change should be reflected here as well.

ORDERED(OrderID, total_cost, *CustomerID*)

ORDERED(CustomerID) mei CUSTOMER(CustomerID)

- ORDER is a reserved word in MySQL, so the table will need to be called 'ORDERED' instead.
- OrderID an integer that will store positive values and automatically increment by 1 when a record is added.
- Total cost should allow digits in the format of ########.## to be stored.
- If the CustomerID of a CUSTOMER is changed, that change should be reflected here as well.

CUSTOMER(CustomerID, CustomerName, Address, Email)

- CustomerID an integer that will store only positive values and automatically increment by 1 when a record is added.
- CustomerName should allow up to 50 characters to be stored. A value is required.
- Address should allow up to 150 characters to be stored. A value is required.
- Email should allow up to 80 characters to be stored.
- A discriminator should be added to determine participation in any subtype(s).

HOME(*CustomerID*, CreditCardNum, CardExpirationDate)

HOME(CustomerID) mei CUSTOMER(CustomerID)

- CreditCardNum will store exactly 16 characters. A value is required.
- CardExpirationDate will store exactly 6 characters. A value is required.
- When the CustomerID of a CUSTOMER is changed, the change should be reflected here as well.

BUSINESS(*CustomerID*, PaymentTerms)

BUSINESS(CustomerID) mei CUSTOMER(CustomerID)

- PaymentTerms should allow up to 50 characters to be stored. A value is required.
- When the CustomerID of a CUSTOMER is changed, the change should be reflected here as well.

ACMEOnline Data:

Please add the following data to the ITEM table:

Item_Name	Description	Model	Price
Cabbage Patch Doll	Baby boy doll	Boy	39.95
The Last Lecture		Hardcover	9.95
Keurig Beverage Maker	Keurig Platinum Edition Beverage Maker in Red	Platinum Edition	299.95

Note: There is no description for 'The Last Lecture'

You just found out that a change need to be made to the Address attribute in CUSTOMER. Compose a statement that will modify the existing Address attribute in CUSTOMER to allow up to 100 characters and a value is NOT required.

You also just found out that you need to add the attributes below to the existing CUSTOMER table; without deleting and re-creating the table. Compose statements that will add the following attributes to the existing CUSTOMER table.

- City should allow up to 60 characters to be stored. A value is not required.
- State should allow exactly two characters to be stored. A value is not required.
- Zipcode should support the storage of zipcodes in the format of either '#####' or '#####-####'. Data validation of proper format is not required; you just need to make sure that either format could be accomodated. A value is not required.

You have just been notified that the 'Keurig Beverage Maker' will no longer be sold. Compose a statement that will remove the 'Keurig Beverage Maker' from the ITEM table.

You have just been notified that there is a description for 'The Last Lecture'. Compose a statement that will edit the existing record for 'The Last Lecture' to add a value for description of 'Written by Randy Pausch'.

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Please add the following data for Janine Jeffers. You must make sure that all of the statements needed to accomplish what is described below are considered a single "unit", which will ensure that either all of the statements execute or none of them execute. You are to assume that this is a multi-user system with other records able to be added and therefore when you execute the statements you do not know the customerID that will be assigned to Janine.

CustomerName: Janine Jeffers
Street: 152 Lomb Memorial Dr.
City: Rochester
State: NY
Zipcode: 14623
Email: jxj1234@rit.edu
Credit Card Number: 1234567890123456
Card Expiration: 012014
Update Janine's customer record to denote that she is a 'home' customer
OrderID = 1
Order Total: 113.74
Line Item: Item Number = 1; OrderID = 1; Quantity=2
Line Item: Item Number = 2; OrderID = 1; Quantity=3