

ACT5004_Database_Design_Excercise

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Gallery Customer History Form

Customer ID:300568965

Name:Jackson, Elizabeth

Phone (206) 284-6783

123 – 4th Avenue

Fonthill, ON

L3J 4S4

Purchases Made

Artist ID	Name	Art Code	Title	Purchase Date	Sales Price
003 - Carol Channing		059450	Laugh with Teeth	09/17/2000	7000.00
015 - Dennis Frings		159550	South toward Emerald Sea	05/11/2000	1800.00
003 - Carol Channing		059450	Laugh with Teeths	02/14/2002	8550.00
017 – Allen Chow		346751	At the Movies	07/15/2003	2200.00

One Gallery wishes to maintain data on their customers, artists and paintings. They may have several paintings by each artist in the gallery at one time. Paintings may be bought and sold several times. In other words, the gallery may sell a painting, then buy it back at a later date and sell it to another customer.

In general, you need to design a database that is composed of several tables which can manage above information efficiently. In particular, you are required to use following variable names, data types and constraints to store information of attributes listed as above form.

Attribute Name	Data Type	Explanation	Example
<u>cust_id</u>	INT(11)	Unique ID No. of customer	300568965
cust_name	VARCHAR(100)	Customer Name, and cannot be NULL	Jackson, Elizabeth
cust_addr	VARCHAR(255)	Address of customer	123 – 4th Avenue Fonthill, ON L3J 4S4
cust_phone	VARCHAR(15)	Phone number of customer	(206) 284-6783
<u>art_code</u>	CHAR(6)	Unique ID of art	059450
art_title	VARCHAR(255)	Title of art paintings	Laugh with Teeth
artist_id	CHAR(3)	Unique ID No. of artist	003
artist_name	VARCHAR(100)	Artist name cannot be NULL	Carol Channing

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<u>pur_date</u>	DATE	Purchasing date	09/17/2000
<u>pur_price</u>	FLOAT	Purchasing price	7000.00

In the first step, you may design a database only composed of one big table as follows. Here primary key is a composite key of (cust_id, art_code, pur_date).

Attribute Name	Data Type	Flag
<u>cust_id</u>	INT(11)	PK
cust_name	VARCHAR(100)	
cust_addr	VARCHAR(255)	
cust_phone	VARCHAR(15)	
art_code	CHAR(6)	PK
artist_id	CHAR(3)	
art_title	VARCHAR(255)	
artist_name	VARCHAR(100)	
<u>pur_date</u>	DATE	PK
<u>pur_price</u>	FLOAT	

Although the above designed table **satisfies the 1NF**, it does NOT satisfy the **2NF**. Please accomplish following tasks to normalize the table design and create the table in MySQL.

1. Normalize above table design such that the designed tables satisfy **2NF** (but **NOT 3NF**) . **(6 points)**
2. Write SQL to **create the tables** as well as the **foreign key** (with default constraints) among these tables designed in step-1 in MySQL. **(6 points)**
3. Assign the “select” and “insert” privileges on all the tables you created in Step-2 to another user account names as “studentid_user” (such as “9527_user”) . **(5 points)**
4. Use the MySQL Workbench to generate the **E-R diagram** of **all** the tables **you created** and paste the **screenshot** here. **(3 points)**

Note:

- All the examples suppose your student ID is “9527”.
- Please also indicate the key attribute(s) (both primary key and foreign key) of each table as well in step-1 and step-2.
- Please create the foreign keys with **default** settings on actions.
- Please **include your student ID in the name of tables** in step-1 as suffix of table names. For example, if one of the tables designed by you in step-2 is named as “customer”, then you are supposed to create this table in MySQL with the name “customer_9527”.
- Please log in MySQL database with following information (same as slides):
 - Server: 116.31.95.62
 - Port: 9528

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- Username: studentid_admin (such as “9527_admin”)
- Password: 'acT5004@2021' (**Do RESET the default password**)
- Please create and generate the E-R diagram under your own schema named as “studentid_db” (Such as 9527_db)”
- Please accomplish the above tasks and prepare a report to record the results. You could refer to the “PROJECT REPORT EXAMPLE.pdf” for reference.