ACT5004\_Database\_Design\_Excercise

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1. Normalize above table design such that the designed tables satisfy 2NF（but NOT 3NF）. (6 points)

Answer: The normalized tables are as follows

a) Table Customer

|  |  |
| --- | --- |
| cust\_id | int(11) |
| cust\_name | varchar(100) |
| cust\_addr | varchar(255) |
| cust\_phone | varchar(15) |

b) Table Art

|  |  |
| --- | --- |
| art\_code | char(6) |
| artist\_id | char(3) |
| art\_title | varchar(255) |
| artist\_name | varchar(100) |

c) Table Purchase

|  |  |
| --- | --- |
| cust\_id | int(11) |
| art\_code | char(6) |
| pur\_date | date |
| pur\_price | float |

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)

create table db\_1037.Customer\_1037(

cust\_id int(11) primary key,

cust\_name varchar(100),

cust\_addr varchar(255),

cust\_phone varchar(15)

);

create table db\_1037.Art\_1037(

art\_code char(6) primary key,

artist\_id char(3),

art\_title varchar(255),

artist\_name varchar(100)

);

create table db\_1037.Purchase\_1037(

cust\_id int(11),

art\_code char(6),

pur\_date date,

pur\_price float,

primary key (cust\_id, art\_code, pur\_date),

foreign key (cust\_id) references db\_1037.Customer\_1037(cust\_id),

foreign key (art\_code) references db\_1037.Art\_1037(art\_code)

);

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)

create user 1037\_user;

grant select, insert on table db\_1037.Customer\_1037 to 1037\_user;

grant select, insert on table db\_1037.Art\_1037 to 1037\_user;

grant select, insert on table db\_1037.Purchase\_1037 to 1037\_user;

4. Use the MySQL Workbench to generate the E-R diagram of all the tables you created and paste the screenshot here. (3 points)

