Problem#1   **[2.5 marks]**

The World Database Diagram
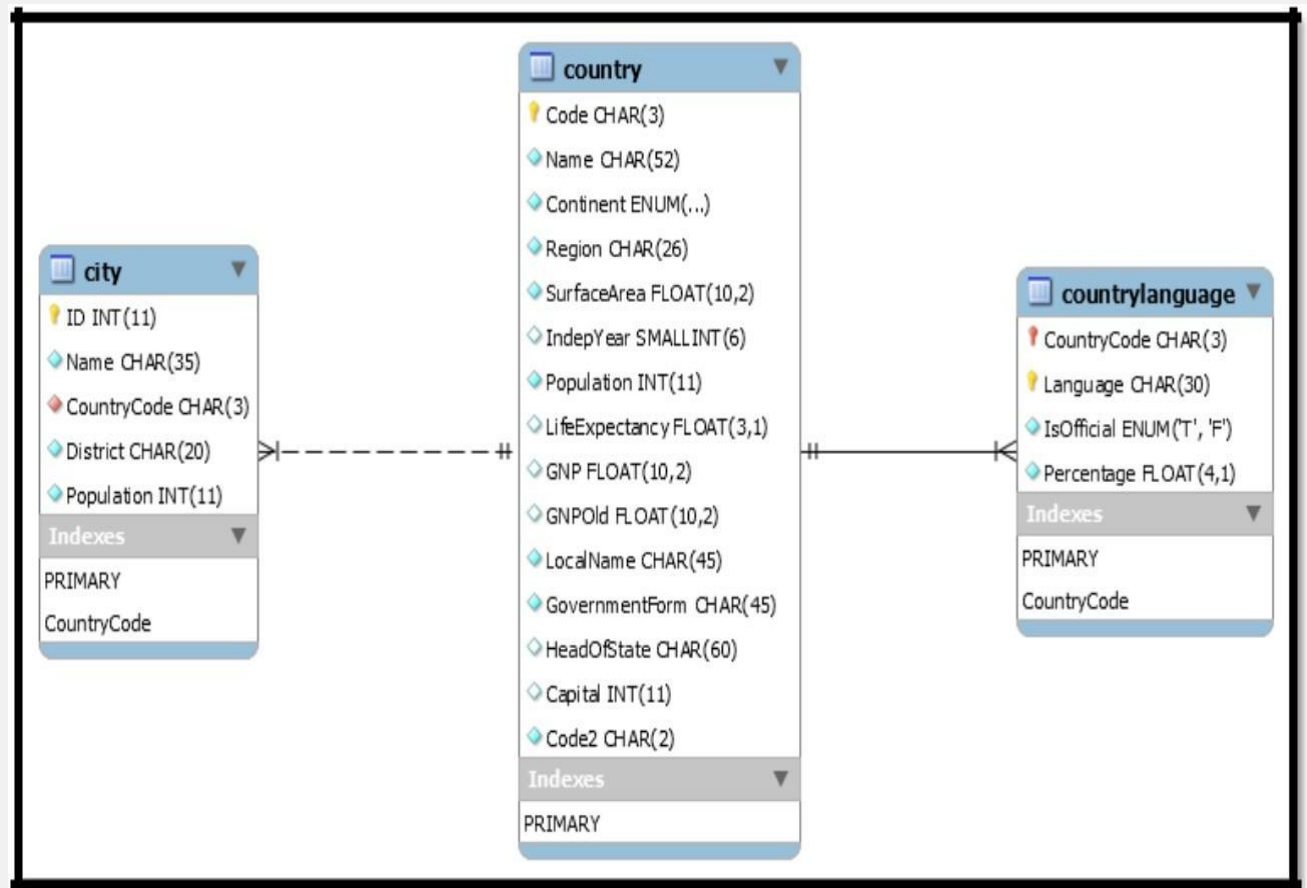
Answer the following SQL-Queries based on the *World Database Diagram*:

1) Show the population of Saudi Arabia

2) Show the name and the population for Spain, Egypt, and Australia.

3) Show the countries with an area of 280,000-320,000 sq km

4) Show the total population of the world.

5) What is total the population of Spain, Egypt, and Australia.

Problem #2   [2.5 marks]

Given the following DEPTARTMENT schema:

DEPTARTMENT (<u>DEPTNO</u>, DEPTNAME, LOCATION, BUDGET**)**

Perform the following tasks:
- ✓ Create the DEPTARTMENT table, and insert 5 records.
- ✓ Rename the table DEPARTMENT as DEPT.
- ✓ Add the column nemployees with not null constraint to the table department.
- ✓ Rename the column DEPTNAME to DNAME
- ✓ change the data type of a column LOCATION in MYSQL to char with size of 30

Problem #3   [3 marks]

Suppose you are a manufacturer of product ABC, which is composed of parts A, B, and C. Each time a new item of product is created, it must be added to the PROD_QOH in a table named PRODUCT. And each time the product ABC is created, the PART_QOH in a table named PARTS, must be reduced by one each of parts A, B, and C. The sample database contents are shown in Table P10.1

PRODUCT

PROD_CODE	PROD_QOH
ABC	1200

PARTS

PART_CODE	PART_QOH
A	567
B	498
C	549

A. Using SQL, write a transaction, T1, to represent the process of adding 100 new items of product ABC to the inventory.

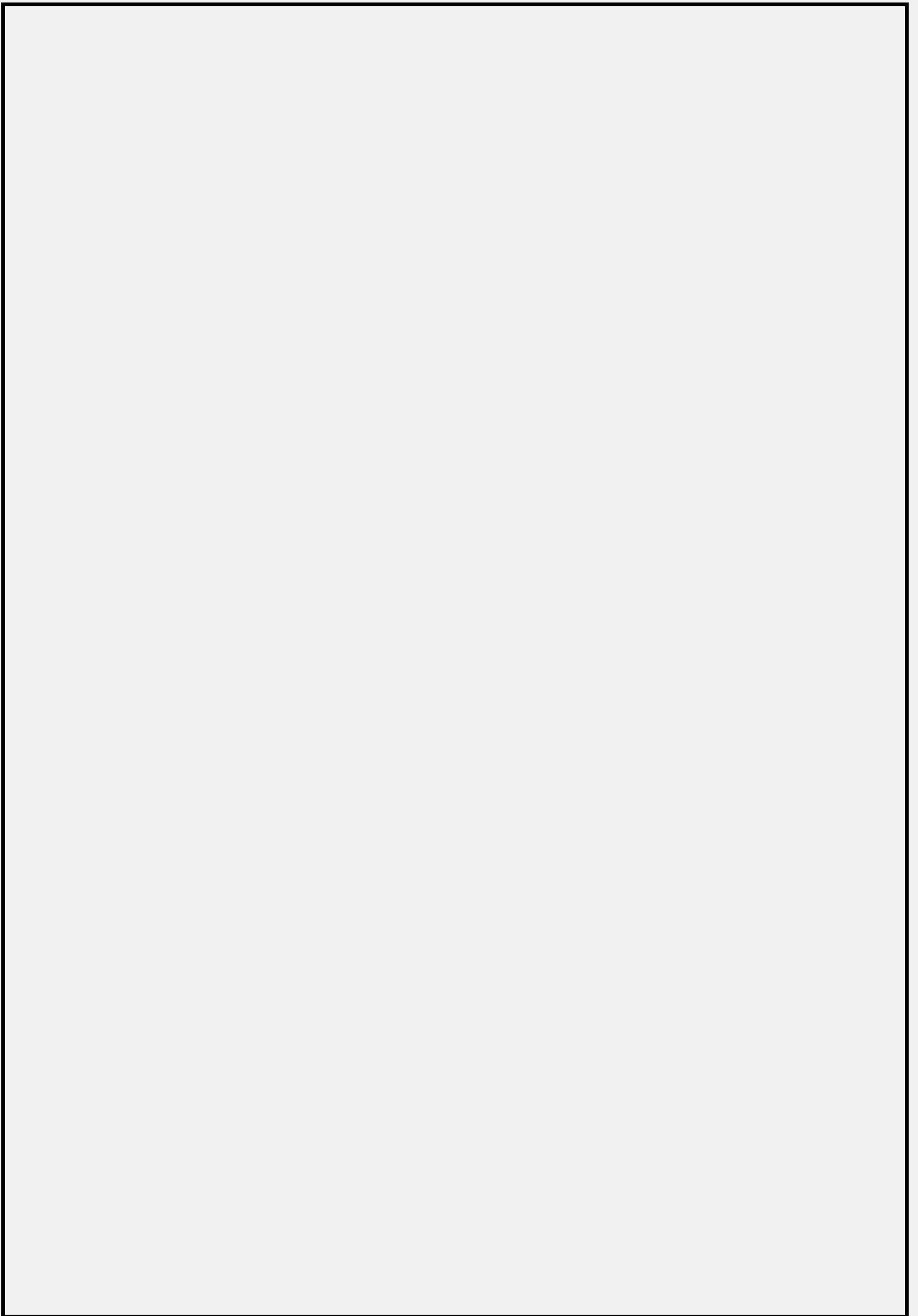B. Using SQL, write a transaction T2 to represent the process of adding 200 items of the ABC product.

Problem #4 [2 marks]

Although you always wanted to be an artist, you ended up being an expert on databases because you love to cook data and you somehow confused database with data baste. Your old love is still there, however, so you set up a database company, ArtBase, that builds a product for art galleries. The core of this product is a database with a schema that captures all the information that galleries need to maintain. Galleries keep information about artists, their names (which are unique), birthplaces, age, and style of art. For each piece of artwork, the artist, the year it was made, its unique title, its type of art (e.g., painting, lithograph, sculpture, photograph), and its price must be stored. Pieces of artwork are also classified into groups of various kinds, for example, portraits, still lifes, works by Picasso, or works of the 19th century; a given piece may belong to more than one group. Each group is identified by a name (like those just given) that describes the group. Finally, galleries keep information about customers. For each customer, galleries keep that person's unique name, address, total amount of dollars spent in the gallery (very important!), and the artists and groups of art that the customer tends to like.

4.1) Draw the ER diagram for the database.

4.2) Identify the relational schema for the database.

Problem #5 **[5 marks]**

Multiple Choices

https://forms.gle/Xi2N2jRUw2VVvGPr9