Assignment 2: SQL Queries

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**Reflective:** We were tasked by completing our SQL assignments 1 and 2, of which the answers below are contained for each slide, furthermore the scripts have been attached in the assignment file where if you load the scripts after loading the database into your own SQL Server, you can run the solutions to check if they work for yourself to get the feedback I received. From there, the interview questions are also complete, with finality the extra attempt credit questions took some time but, in the end, I too mastered the process of Joins, demonstrating my competency in writing basic queries and utilising joins with wider learning. Going forward, I believe that extra research will be needed to make my SQL skills perfect, but I didn’t struggle too much with Task 1 or Task 2, thus I have become quite competent thanks to my technical training lessons. Below you will see the two EER diagrams as well.

**MYSQL Assignment Queries – Assignment Part 1 – Inventory and Customer Databases, Product and Order Task**

**Question**: Using the Query 2 you created change the points to read times by 10 and plus 100. Record your results in the word document.

**Answer**: The query I wrote was **SELECT last\_name, first\_name, points, (points\*10) +100 FROM CUSTOMERS.** The result was an altered table with a new column called points\*10+100 for all the points that the customers had inside their wallet.

**Question**: Using the Query 2 you created use the code to create a discount factor, so the table now shows ad discount header and changing the (point+10) \*100

**Answer**: The answer I wrote was **SELECT last\_name, first\_name, points, (points+10) \* 100 AS discount\_factor FROM CUSTOMERS,** which resulted in the column with the discount factor points being called discount\_factor, having been aliased as so.

**Task 2**: Write a SQL query to return all the products in our database in the result set. I want you to show columns, name, unit price, and new column called new price which is based on expression (unit price\*1.1)

So, what you are doing is increasing the product price of each by 10 %

So, with the query we want all the products., the original price and the new price.

**Answer**: The answer that I wrote to this question was use sql\_inventory;

**SELECT name, unit\_price, (unit\_price\*1.1) AS new\_price FROM products.**

In turn, I received a table with unit price, name, and the new price column which showed the original prices in the table of the records increasing by ten percent.

2- In this task create a new query to find all the customers with a birth date of > “1990-10-01”.

**Answer**: The code I used **was SELECT customer\_id, first\_name, last\_name, birth\_date**

**FROM customers**

**WHERE birth\_date > "1990-01-01"**

But this included a null value, the birth date of three customers appeared there all of which were born after 1990.

**Task 3.-** In this task the task asked me to write a query to find out the name of the product with most amount in stock. After attempting to use max, I found it was difficult for me to work out the positioning of the rest of the fields, I only received the number and the name fields were hard to call on, I found it easier to use DESC, so that it would show the highest quantity in stock in the table, and used LIMIT 1 to show only that product, it was Sweet Peas

**My answer was.**

**use sql\_inventory;**

**SELECT name, quantity\_in\_stock,**

**FROM products**

**ORDER BY quantity\_in\_stock DESC**

**LIMIT 1**

**Task 4-** Write a query to find out the name of the most expensive product

**Answer: use sql\_inventory;**

**SELECT \***

**FROM products**

**ORDER BY unit\_price DESC**

**LIMIT 1**

**Shows the highest product is Pork Bacon pac – 4.65.**

**Task 5**-

In this task I was asked to write a query to find the first name, the last name, address, and the birthdate of the oldest customer.

**- use sql\_store;**

**SELECT customer\_id, first\_name, last\_name, address, birth\_date**

**FROM customers**

**ORDER by birth\_date ASC**

**This gave me the answer, which was Ilene Dawson, her birthday in 1964-08-30**

**SQL Assignment Task 2- WORLD DATABASE- CITY COUNTRY, COUNTRYLANGUAGE Task**

**#Task 1**

Using count, get the number of cities in the USA

**use world;**

**#SELECT count (CountryCode) FROM city**

**#WHERE CountryCode = "USA"**

**##There are 274 cities in the USA**

**# Task 2-**

Find out what the population and expectancy for people in Argentina is

**#SELECT name, population, LifeExpectancy FROM country**

**#WHERE name = "Argentina"**

**Which was the age 75.1**

**#Task 3**

Using order BY, LIMIT what country has the highest life expectancy?

#The answer was Zimbabwe

**#SELECT name LifeExpectancy**

**#FROM country**

**#ORDER BY LifeExpectancy DESC**

**#LIMIT 1**

**Task 4**

**#Select 25 cities around the world that start with the letter F in a single SQL query**

**#SELECT name FROM city**

**#WHERE name LIKE "f%"**

**#LIMIT 25**

#The answer results in 25 cities around the world beginning with F

**Task 5**

#Create a SQL statement to display columns ID, Name, population from the city table and limit results to the first 10 rows only

**#SELECT ID, name, Population FROM CITY**

**#LIMIT 10**

#This results in population, ID and the name of each city being listed to the first 10 rows only

**#Task 6** CREATE A SQL statement to find only those cities from city table whose population is larger than 200000

**#SELECT name, population FROM city**

**#WHERE population > 2000000**

**#This resulted in all the city names and their populations over > 2000000**

**#Task 7**

Create a SQL statement to find all the city names from the city table hose name begins with "Be" prefix

**#SELECT name FROM city**

**#WHERE name LIKE "Be%"**

This resulted in the given result where all countries with the prefix Be were listed

**Task 8**

#Create a SQL statement to find only those cities from city table whose population is between 500000-100000

#SELECT name, population FROM city

#WHERE Population BETWEEN 500000 AND 1000000

#ORDER BY population ASC

#The result was all the cities in the city table between 500000 and 100000

**#Task 9**

#Create a SQL statement to find a city with the lowest population in the city table

**#SELECT name, population FROM city**

**#ORDER BY population ASC**

**#LIMIT 1**

**#The city with the lowest population**

**#Is Adamstown with 42**

**SQL Extra Credit Attempt:** These tasks required the use of joins. After extensive research and a little trial and error I came up with these answers, they all worked and gave me the correct answers. I used inner joins and worked out the like matching keys in each that lead me to be able to join each table through another.

These are going to include attempts on the extra credit tasks

**#Task 1** Create a SQL statement to find the capital of spain- I succeeded in getting this one myself

**use world;**

**#SELECT c.code, ci.ID, ci.name, c.capital, ci.CountryCode**

**#FROM country c**

**#INNER JOIN city ci**

**#ON c.code = ci.CountryCode**

**#WHERE ci.CountryCode = "ESP"**

**#LIMIT 1**

#MADRID is the answer need to check this with google and I did, confirmed Madrid is the capital of Spain

**#Task 2-** -Create a SQL statement to list all the languages spoken in Caribbean Region

**#Joined country code to code in language, Dutch English, Paiamento and Spanish were the answers**

**#SELECT cl.CountryCode, c.code, c.region, cl.language**

**#FROM country c**

**#INNER JOIN countrylanguage cl**

**#ON c.code = cl.CountryCode**

**#WHERE c.code = "ABW";**

**#Task 3**

-# a SQL statement to find all the cities from Europe continent

**#SELECT ci.CountryCode, c.code, c.continent, ci.name**

**#FROM city ci**

**# JOIN country c**

**#ON ci.CountryCode = c.code**

**#WHERE c.continent = "Europe";**

**#This joins displays country code, continent Europe and all the cities listed in Europe :)**

**EER DIAGRAMS**

Task: Create two EER diagrams to sum up the relationships in you SQL Database

**EER DIAGRAM 1**

**![A computer screen shot of a diagram

Description automatically generated]()**

**EER DIAGRAM 2**

**![A computer screen shot of a computer

Description automatically generated]()**

**SQL INTERVIEW QUESTIONS**

**Interview Questions Part 1**

**What is a query?**

A query is an SQL script written to return information on the records or present information from the given relational database management system and return it with the intended results. An example of a query could be SELECT \* FROM customers, where customer is the table and \* represents all, this is an example of preaching a specified set of instructions for the database to then return that information

**What is the SELECT statement?**

The SELECT statement in the MYSQL language is the keyword that elicits information to be retrieved from the given relational database management system, through the specification of the fields in the tables or summoning all of them. What is entailed within this result of feedback from the SELECT determines on the conditions and limiters imposed on that query that it is used in.

**What is the WHERE clause?**

The WHERE clause is used to filter the records that are displayed as feedback in each query, only if it means certain conditions.

**What is the primary key?**

The primary key is the unique identifier in the creation of a database there, a value that is used as a reference to mark the values within the rest of the table in the manner of an ID. A primary key becomes a foreign key when implemented in other tables there, but each foreign key o the given table there is what is used to join the tables to the current primary key, thus they are each primary keys in a foreign setting depending on the task of the query. An example could be how one in the creation of a database can write CREATE DATABASE (customer\_id (INT) Primary KEY) this defines the customer ID in a table set with customers there as the unique identifier for that customer.

**What is a Database?**

In SQL, a database refers to a relational database with a set of fields, records, columns, rows, and structure created from the formation of a database with a given Primary Key. The table can be sorted, filtered, queried, and joined to other tables using the MySQL language and joined to form relationships with other tables.

**Write about the relationship between the tables in the EER diagram that you have created:**

The EER diagram shows the customer table where the primary key is the Customer\_ID, the Customer ID is linked to the orders table via the phone number of which that customer places orders to for products which in turn is linked to the shipper\_ID, that is the primary key of the shippers table and the foreign key to the orders table. The orders table is also then linked to the orders statuses table via the shipping date there. Order\_ID and Product\_ID are foreign keys to the products and orders table, indicated by the red keys instead of the yellow symbol, thus this makes up the entire sql\_store database.

**SQL Interview Questions Part 2**

1. Modify query to show the population of Germany

**SELECT population FROM world**

**WHERE name = “FRANCE”**

**Answer: SELECT population FROM world**

**WHERE name = “Germany”**

**2. Select the query which gives the name of countries beginning with U**

**Answer:** **Option 3- SELECT name from WORLD WHERE name like “U%”**

**3**. Select the answer which shows the problem with this SQL code- the intended result should be the continent of France

**Answer:** **Option B is the correct answer because name is a field not an attribute in the table so it should be naming not “name” in the code SELECT continent FROM world where “name” = “France” should be SELECT continent FROM WORLD where name = “France”**

4. Select the code which shows the countries that end in A and L

**Answer:** Option 5 **SELECT name FROM world where name like “%a” or name LIKE “%l”**

**5.** Given the table on the left select the query which produces this table below

**Answer**: The answer would be 3 because to read from a table you must have SELECT in the command

So, Select name population from WORLD where population between 1000000 AND 1250000