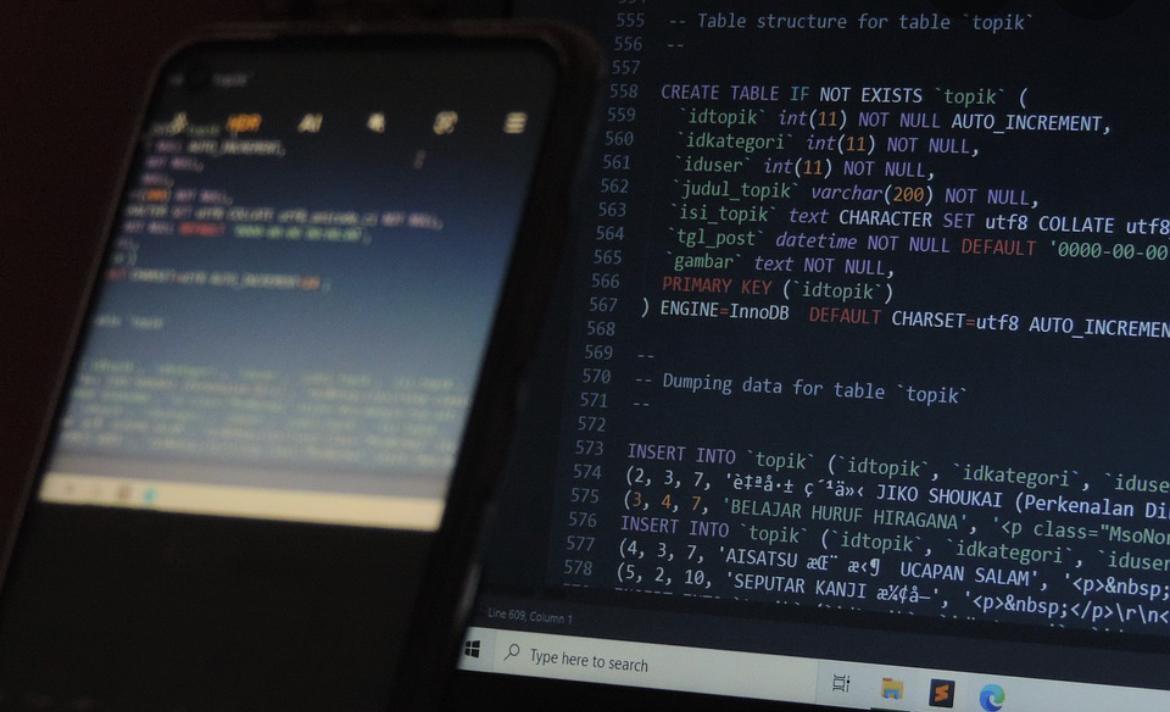
**SQL Assessment – Part 1**



For the SQL assessment, you will be given a series of prompts to test your knowledge and comprehension. The purpose of this assessment is to apply the SQL skills and fundamentals you have learned.  Based on the prompts you will create queries that will return the correct results. Good luck!

Assessment Learning Outcomes:

Upon successful completion of this assessment, you will be able to:

1. Combine SFWGHO to create basic queries.
2. Demonstrate how to identify and create queries using JOINs
3. Demonstrate SQL fundamentals by creating syntax using aggregate functions.
4. Identify how to create different data types and create a table.

To successfully complete this assessment, you will create SQL code based on the following prompts:

1. Create a query that will select a column named "Customer" from a table named "Clients"?

Select Customer

From Clients;

1. Create a query that will return all records from a table named “Marketing”.

Select \*

From Marketing

1. Create a table called Inventory, with the following information:
   1. Primary Key called OrderID
   2. Company Name (include a NOT NULL constraint)
   3. Address
   4. City
   5. Phone
   6. Order Date in DATE format

CREATE TABLE Inventory(

OrderId Int,

Company Name Varchar(n) NOT NULL,

Address Varchar(n),

City Varchar(n),

Phone Int,

Order Date DATE;

1. After you created the above table, you realized you forgot to include a column. Insert the column below into the Inventory table:
   1. State

Alter table Inventory

Add State Varchar(n);

1. Create a query that will delete the following tables:
   1. Table name - Old inventory
   2. Table name – Purchases

Drop table( Old inventory, Purchases);

1. Create a query that will select all the records from a table named "Persons" where the value of the column "FirstName" is "Charles".

Select \*

From Persons

Where FirstName = ‘Charles’;

1. Create a query that will select all the records from a table named "Marketing" where the value of the column "Customer" starts with an "a"?

Select \*

From Marketing

Where Customer like ‘a%’;

1. Create a query that will return all the records from a table named "Persons" sorted descending by "LastName"?

Select \*

From Persons

Order by LastName DESC;

1. Create a query that will perform an inner join on two tables, Orders and Customers, using the CustomerID field in both tables as the relationship between the two tables.

Select \*

From Orders

Join Customers on Orders.CustomerID = Customers.CustomerID

1. Create a query to return the top 10 records from the “Employee” table and sort the records descending by the “Salary” column, where the year is 2019 and 2020.

Select \*

From Employee

WHERE Year IN (2019,2020)

Order by Salary DESC

Limit 10;

**SQL Assessment: Part 2**

Objective

You are a new analyst working in a healthcare environment. The hospital is trying to understand the patient population, especially those with numerous visits.  This is an effort to improve patient outcomes. You have been tasked to create profiles of patients with more than 1 admission.  We need to understand the reason for the visit but also what happened during their visit.

**Data Source:** Hospital Database at <https://www.sql-practice.com/>.

Challenge

1. Before focusing on the above task of creating profiles of patients who have more than 1 admission, you first want to explore the data to learn about what diagnoses patients are admitted for. Write a query that shows the diagnosis patients have received and the number of times that diagnosis has been documented.
   1. HINTS: This exploration query should look at all patients who have a diagnosis and not be limited to those with more than 1 admission.  A patient can be admitted with the same diagnosis multiple times and we want to count each admission associated with a diagnosis.

SELECT diagnosis, count(admission\_date) as total\_visits

from admissions

group by diagnosis

order by total\_visits desc;

1. Write a query to identify patients with more than 1 admission. Name the count of visits column, Total\_Visits.

SELECT patients.first\_name||' '||patients.last\_name as patient,

count(admission\_date) as total\_visits

from patients

join admissions on patients.patient\_id= admissions.patient\_id

group by patients.patient\_id

having total\_visits > 1

order by patient;

1. Write another query using the information above to create the patient profile to include

the following columns in the order given:

* Patient Name (Concatenate first and last name)
* Patient Age at visit
* City
* Province Name
* Admission Date
* Discharge Date
* Diagnosis
* Allergies
* Height
* Weight
* Physician Name (Concatenate First and Last Name)
* Total Visits

1. HINT 1: We want to include all patients, including those who have not been admitted.
2. BIG HINT 2: Unfortunately, you are unable to create temp tables on this practice site so the next best thing is a subquery. The first query in the Challenge will be your inner query. You will then join the additional tables to the inner query to get the remaining columns. This is your outer query.  Use the following format to get started.

Subquery format:

Select ….  
From  
(  
    Select  
    From  
) pt  
Add joins here

SELECT patients.first\_name||' '||patients.last\_name as patient,

admissions.admission\_date-patients.birth\_date as Age\_at\_visit,

city,province\_name, admission\_date,discharge\_date,

allergies, height, weight, doctors.first\_name||' '||doctors.last\_name

as doctor  from

(SELECT diagnosis, count(admission\_date) as total\_visits

from admissions

group by diagnosis

order by total\_visits desc

) join province\_names on patients.province\_id= province\_names.province\_id

join patients on patients.patient\_id= admissions.patient\_id

join admissions on admissions.patient\_id = patients.patient\_id

join doctors on doctors.doctor\_id = admissions.attending\_doctor\_id

group by patient

Deliverables

1. Submit the query to create the patient profiles in this document. Copy and paste the code you create above.
2. Answer the following questions, include the code you used to answer each question:
   1. Overall for all patients, not just those with more than 1 admission, what are the top 3 diagnoses? What are the bottom 2 diagnoses?

Over all the top 3 diagnoses were Congestive Heart Failure, pregnancy, and appendicitis.

SELECT diagnosis, count(admission\_date) as total\_visits

from admissions

group by diagnosis

order by total\_visits desc

limit 3;

The bottom 2 diagnoses were femoral shaft fracture and CHF pulmonary edema.

SELECT diagnosis, count(admission\_date) as total\_visits

from admissions

group by diagnosis

order by total\_visits

limit 2;

1. How many patients had more than 1 visit?

1,685 patients had more than 1 visit.

select count (patient) from (SELECT patients.first\_name||' '||patients.last\_name as patient,

count(admission\_date) as total\_visits

from patients

join admissions on patients.patient\_id= admissions.patient\_id

group by patients.patient\_id

having total\_visits > 1

order by patient);

1. Who is the youngest patient? Who is the oldest patient?

The youngest patient is Jame Schibetta.

SELECT distinct patients.first\_name||' '||patients.last\_name as patient, patients.birth\_date

from patients

join admissions on patients.patient\_id=admissions.patient\_id

order by birth\_date desc

The oldest patient is Briareos Hayes.

select patient, max(age\_at\_visit) from( SELECT distinct patients.first\_name

 ||'     '||patients.last\_name as patient,

              admissions.admission\_date-patients.birth\_date as Age\_at\_visit

               from patients

               join admissions on patients.patient\_id=admissions.patient\_id)

1. Are there any patients with more than 2 visits?

No, there aren’t any patients with more than 2 visits.

SELECT patients.first\_name||' '||patients.last\_name as patient,

count(admission\_date) as total\_visits

from patients

join admissions on patients.patient\_id= admissions.patient\_id

group by patients.patient\_id

having total\_visits >2

order by patient;

1. There are patients with more than 1 physician.  Identify the most common primary diagnosis of this patient population.

The most common diagnosis for these population is congestive heart failure

SELECT distinct patients.first\_name||' '||patients.last\_name as patient,

diagnosis,doctors.first\_name ||' '||doctors.last\_name as doctor,

count(admission\_date) as total\_visits

from patients

left join admissions on patients.patient\_id= admissions.patient\_id

left join doctors on admissions.attending\_doctor\_id = doctors.doctor\_id

where patient in

(select patient from patients

group by 'patient'

having count('patient')>=2)

group by patient,doctor

having total\_visits =1

order by diagnosis;