# **SQL Assignment 7**

Task #7 details below: “functions”

Consider the Country table and Persons table that you created earlier and perform the following:

1. Add a new column called DOB in Persons table with data type as Date.

2. Write a user-defined function to calculate age using DOB.

3. Write a select query to fetch the Age of all persons using the function that has been created.

4. Find the length of each country name in the Country table.

5. Extract the first three characters of each country's name in the Country table.

6. Convert all country names to uppercase and lowercase in the Country table.

->In this task, we will enhance the Persons table by adding DOB column, creating a function to calculate age, performing various string operations. These SQL queries will demonstrate effective data manipulation, allowing for insightful analysis and improved presentation of information within the database.

1. **Add a new column called DOB in Persons table with data type as Date.** 
   1. Description: Adds a date column to store each person's date of birth.
   2. Advantage: Enables age calculations and time-based analytics, expanding the data's utility.
   3. Query:

ALTER TABLE Persons

ADD DOB DATE;

1. **Write a user-defined function to calculate age using DOB.** 
   1. Description: Defines a function to calculate age based on DOB.
   2. Advantage: Centralizes the age calculation logic, allowing reuse across multiple queries for consistency and efficiency.
   3. Query:

CREATE function CalculateAge(@DOB DATE)

RETURNS INT

AS

BEGIN

DECLARE @age INT;

SET @age=DATEDIFF(year,@dob,getdate());

RETURN @age;

END;

1. **Write a select query to fetch the Age of all persons using the function that has been created.**
   1. Description: Uses the custom age function to get each person’s age.
   2. Advantage: Simplifies querying by allowing a function call instead of repeating the age calculation logic.
   3. Query:

SELECT id, fname, lname, dob, dbo.CalculateAge(dob) AS age

FROM Persons;

1. **Find the length of each country name in the Country table.** 
   1. Description: Retrieves the number of characters in each country’s name.
   2. Advantage: Useful in data validation, length checks, or formatting tasks where the length of text fields matters.
   3. Query:

SELECT country\_name, LEN(country\_name) as Length\_of\_each\_country

FROM Country;

1. **Extract the first three characters of each country's name in the Country table.** 
   1. Description: Selects the first three letters of each country name.
   2. Advantage: Helps with creating standardized abbreviations or codes for each country, aiding in readability or data representation.
   3. Query:

SELECT id, country\_name, SUBSTRING(country\_name,1,3) AS first\_three\_char

FROM Country;

1. **Convert all country names to uppercase and lowercase in the Country table.**
   1. Description: Changes all country names to uppercase and lowercase.
   2. Advantage: Ensures consistency in data presentation and can be useful for case-insensitive comparisons.
   3. Query:

SELECT id, UPPER(country\_name) AS Country\_in\_uppercase, LOWER(country\_name) AS Country\_in\_lowercase

FROM Country;