Practice 01

Task 1

Modify the given function **fn\_mid （Example 03 in Lecture）** to create a new function named **fn\_right\_part** that extracts the last **N** characters from a given input string. Instead of using the substring function, use the **RIGHT()** function to achieve this.

1. Define the function using CREATE OR REPLACE FUNCTION.
2. The function should return the last **N** characters of the input string.
3. Test your function by extracting the last **5** characters from **"Geographic"**.

Task 2.

Based on function fnSway (Example 04 in Lecture) to create a function named **fnLatLonToUTM** that converts a given latitude and longitude into approximate **UTM-like** coordinates using a simple transformation.

1. The function should take two **INOUT** parameters: latitude and longitude.
2. Convert the latitude and longitude into approximate UTM coordinates using the following formulas:
   * **Easting (x) = (longitude + 180) \* 5000**
   * **Northing (y) = (latitude + 90) \* 10000**
3. Call the function using SELECT fnLatLonToUTM(40.7128, -74.0060) and verify the output.

Task 3

Modify the given function subway\_filter （）(Example 06 in Lecture) to create a new function named **subway\_multi\_filter** that allows filtering subway stations by multiple borough names using an **array parameter**.

1. The function should take **one parameter**, borough\_names, which is an array of type VARCHAR[].
2. **Filtering with Arrays**: Use the ANY() operator to check if a column value exists in an array

**Task 4**

Modify the given function **dynamic\_subway\_filter** (Example 07 in Lecture) **t**o allow filtering subway stations by multiple colors. Using ARRAY[‘BLUE’, ‘RED’] as the filtering condition.

Provide the SQL and Screenshot of your map.

Task 5.

Modify the given function dynamic\_subway\_filter (Example 08 in Lecture) to filter data using ST\_Intersects(). The two tables involved are ch05.streets and ch05.neighborhoods, with the filtering criterion based on the ‘name’ column. Select neighborhoods based on the chosen street name from ch05.streets.

Provide the SQL and Screenshot of your map.