**Character/String Functions**

#### 1. ****Scenario: Customer Name Formatting****

* **Problem:** You have a **Customers** table with columns **CustomerID** (int), **FullName** (varchar), and **Email** (varchar). Write a query to return the **CustomerID**, **FullName** with the first letter of each name capitalized (title case), and the email in lowercase.
* **Task:** Write the SQL query to achieve this.

**Solution -** select CustomerID, concat(upper(left(FullName, 1)), lower(substring(FullName, 2,

len(FullName)))) as FullName\_TitleCase, lower(Email) as Email\_Lowercase

from Customers;

#### 2. ****Scenario: Order Tracking****

* **Problem:** In the **Orders** table, there are columns **OrderID** (int), **CustomerID** (int), and **TrackingNumber** (varchar). Write a query to extract the first 5 characters of the tracking number and display it along with the **OrderID**. If the tracking number is shorter than 5 characters, display the entire tracking number.
* **Task:** Write the SQL query to retrieve the relevant data.

**Solution –** select **OrderID,**

Case

When len(**TrackingNumber**) >= 5 then substring(**TrackingNumber**, 5, 1)

Else **TrackingNumber**

End as **TrackingNumber**

from **Orders;**

#### 3. ****Scenario: Product Code Cleanup****

* **Problem:** The **Products** table contains columns **ProductID** (int), **ProductCode** (varchar), and **ProductName** (varchar). Some product codes contain leading and trailing spaces. Write a query to clean up these spaces using LTRIM and RTRIM, and return the **ProductID** and cleaned-up **ProductCode**.
* **Task:** Write the SQL query to perform the cleanup.

#### 4. ****Scenario: Review Summary****

* **Problem:** In the **Reviews** table, you have columns **ReviewID** (int), **ReviewText** (nvarchar(max)), and **ReviewDate** (datetime). Write a query to find the length of each review text and return **ReviewID** and the length of the review. Additionally, filter for reviews that are longer than 100 characters.
* **Task:** Write the SQL query to analyze review lengths.

#### 5. ****Scenario: Employee Email Verification****

* **Problem:** The **Employees** table includes columns **EmployeeID** (int), **FirstName** (varchar), **LastName** (varchar), and **Email** (varchar). Write a query to check for valid emails by looking for the presence of the '@' character and return only those employees whose email is valid. Additionally, concatenate the first and last names into a single column **FullName**.
* **Task:** Write the SQL query to perform this verification.

#### 1. ****Scenario: Formatting Customer Names****

* **Problem:** You have a **Customers** table with columns **CustomerID** (int), **FirstName** (varchar), and **LastName** (varchar). Write a query that formats the full name by concatenating the first and last names, ensuring that the first letter of each name is capitalized and the rest are in lowercase. Return **CustomerID** and the formatted **FullName**.
* **Task:** Write the SQL query to achieve this.

#### 2. ****Scenario: Extracting Product Information****

* **Problem:** In the **Products** table, there are columns **ProductID** (int), **ProductCode** (varchar), and **ProductDescription** (nvarchar). Write a query that retrieves the **ProductID**, the last 10 characters of the **ProductCode**, and the length of the **ProductDescription**. Filter the results to include only products with a description longer than 50 characters.
* **Task:** Write the SQL query to retrieve this information.

#### 3. ****Scenario: Email Domain Analysis****

* **Problem:** The **Users** table includes columns **UserID** (int), **Email** (varchar), and **RegistrationDate** (datetime). Write a query that returns the **UserID**, the email domain (the part after '@'), and the registration year. Use the SUBSTRING and CHARINDEX functions to extract the email domain.
* **Task:** Write the SQL query to analyze user email domains.

#### 4. ****Scenario: Analyzing Review Feedback****

* **Problem:** In the **Reviews** table, you have columns **ReviewID** (int), **ReviewText** (nvarchar(max)), and **ReviewDate** (datetime). Write a query to find all reviews submitted in the last 90 days that contain the word "great". Return **ReviewID**, the length of **ReviewText**, and a flag indicating whether the review exceeds 200 characters (1 for yes, 0 for no).
* **Task:** Write the SQL query to analyze reviews.

#### 5. ****Scenario: Cleaning Up SKU Codes****

* **Problem:** The **Inventory** table contains columns **ItemID** (int), **SKU** (varchar) with potential unwanted characters (like hyphens or spaces). Write a query that cleans up the SKU codes by removing any hyphens and leading/trailing spaces. Return the **ItemID** and the cleaned-up **SKU**.
* **Task:** Write the SQL query to perform the cleanup.