**Character Strings**

#### 1. ****Scenario: User Profile Creation****

* **Problem:** You have a **Users** table with columns **UserID** (int), **Username** (varchar), **Email** (varchar), and **Password** (varchar). Write a query to find all users whose usernames start with the letter "A". Return **UserID**, **Username**, and **Email**.
* **Task:** Write the SQL query to achieve this.

**Solution –** Select UserID, Username, Email

From Users

Where Username like ‘A%’;

#### 2. ****Scenario: Product Inventory****

* **Problem:** In the **Products** table, there are columns **ProductID** (int), **ProductName** (nvarchar), **Category** (varchar), and **Description** (nvarchar(max)). Write a query to find all products that belong to the "Electronics" category and whose names contain the word "wireless". Return **ProductID**, **ProductName**, and **Description**.
* **Task:** Write the SQL query to retrieve these products.

**Solution –** select **ProductID**, **ProductName**, **Description**

From **Products**

**Where Category = ‘**Electronics**’ and ProductName like ‘%**wireless%’;

#### 3. ****Scenario: Employee Contact Information****

* **Problem:** The **Employees** table contains columns **EmployeeID** (int), **FirstName** (varchar), **LastName** (varchar), and **PhoneNumber** (varchar). Write a query to concatenate the first and last names of all employees into a single column labeled **FullName** and return only those who have a phone number starting with "+1".
* **Task:** Write the SQL query to display the employee's full name and phone number.

**Solution –** select CONCAT(‘**FirstName’, ‘LastName’) as FullName**

**From Employees**

**Where PhoneNumber like ‘+1%’;**

#### 4. ****Scenario: Customer Feedback Analysis****

* **Problem:** In the **Feedback** table, you have columns **FeedbackID** (int), **CustomerID** (int), **Comment** (nvarchar(max)), and **SubmissionDate** (datetime). Write a query to find all feedback comments submitted in the last 60 days that contain the word "excellent". Return **FeedbackID** and **Comment**.
* **Task:** Write the SQL query to analyze customer comments.

**Solution –** select FeedbackID, Comment

from Feedback

where Comment like '%excellent%'

and SubmissionDate >= dateadd(day, -60, getdate());

#### 5. ****Scenario: Inventory Item Search****

* **Problem:** The **Inventory** table includes columns **ItemID** (int), **ItemName** (varchar), and **SKU** (char(8)). Write a query to find all items whose SKU starts with "SKU" and ends with a numeric digit. Return **ItemID**, **ItemName**, and **SKU**.
* **Task:** Write the SQL query to retrieve these inventory items.

**Solution -** select ItemID, ItemName, SKU

from Inventory

where SKU like 'SKU%[0-9]';

#### 1. ****Scenario: Advanced User Filtering****

* **Problem:** You have a **Users** table with columns **UserID** (int), **Username** (varchar), **Email** (varchar), and **RegistrationDate** (datetime). Write a query to find all users whose usernames contain a number and who registered in the last 90 days. Return **UserID**, **Username**, and **Email**.
* **Task:** Write the SQL query to achieve this.

**Solution –** select UserID, Username, Email

From Users

Where Username like ‘%[0-9]%’ and

**RegistrationDate >= dateadd(day, -60, getdate());**

#### 2. ****Scenario: Detailed Product Descriptions****

* **Problem:** In the **Products** table, there are columns **ProductID** (int), **ProductName** (nvarchar), **Category** (varchar), and **Description** (nvarchar(max)). Write a query to find all products in the "Home Appliances" category where the description is longer than 100 characters. Return **ProductID**, **ProductName**, and the first 50 characters of the **Description**.
* **Task:** Write the SQL query to retrieve these products.

**Solution –** select ProductID, ProductName,

left(Description, 50) AS ShortDescription

from Products

where Category = 'Home Appliances'

and len(Description) > 100;

#### 3. ****Scenario: Employee Name Analysis****

* **Problem:** The **Employees** table contains columns **EmployeeID** (int), **FirstName** (varchar), **LastName** (varchar), and **Email** (varchar). Write a query to find all employees whose first or last name starts with the letter "J". Return their **EmployeeID**, **FirstName**, **LastName**, and a new column **EmailDomain** that contains only the domain part of their email address (everything after the '@').
* **Task:** Write the SQL query to analyze employee names.

**Solution –** select EmployeeID, FirstName, LastName,

right(Email, len(Email) - charindex('@', Email)) as EmailDomain

from Employees

where FirstName like 'J%'

or LastName like 'J%';

#### 4. ****Scenario: Customer Reviews Analysis****

* **Problem:** In the **CustomerReviews** table, you have columns **ReviewID** (int), **ProductID** (int), **ReviewText** (nvarchar(max)), and **SubmissionDate** (datetime). Write a query to find reviews submitted in the last 30 days that contain the phrase "highly recommend". Return **ReviewID**, **ReviewText**, and the number of words in the review (calculated using the LEN and REPLACE functions).
* **Task:** Write the SQL query to analyze customer reviews.

**Solution -** select ReviewID, ReviewText, len(replace(ReviewText, ' ', '')) - len(ReviewText)

+ 1 AS WordCount

from CustomerReviews

where ReviewText LIKE '%highly recommend%'

and SubmissionDate >= dateadd(day, -30, getdate());

#### 5. ****Scenario: Inventory Item Search with Patterns****

* **Problem:** The **Inventory** table includes columns **ItemID** (int), **ItemName** (varchar), and **SKU** (char(8)). Write a query to find all items whose SKU is exactly 8 characters long and contains the letters "A" and "B" in any position. Return **ItemID**, **ItemName**, and **SKU**.
* **Task:** Write the SQL query to retrieve these inventory items.

**Solution -** select ItemID, ItemName, SKU

from Inventory

where len(SKU) = 8

AND SKU LIKE '%A%'

AND SKU LIKE '%B%';