

SQL ASSIGNMENT 1:-

Data Detective (Introduction to Data Transformation & Functions)

Task:

1. Use a sample dataset from your chosen database management software or a provided one. The dataset could represent customer information, sales data, or any relevant data.
2. Explore various functions for data manipulation:
 - String Functions: Use LOWER, UPPER, or SUBSTRING to clean and format text data (e.g., converting all names to uppercase).
 - Date Functions: Apply YEAR, MONTH, or DAY functions to extract specific date components for further analysis.
 - Aggregate Functions (COUNT & COUNT DISTINCT): Calculate the total

Solution:

- Create dataset table in MySQL Database

```
CREATE TABLE CustomerInformation (  
    CustomerID INT PRIMARY KEY,  
    FirstName VARCHAR(50),  
    LastName VARCHAR(50),  
    Gender VARCHAR(10),  
    BirthDate DATE,  
    Email VARCHAR(100),  
    Phone VARCHAR(20),  
    City VARCHAR(50),  
    State VARCHAR(50)  
);
```

- Insert sample data into it

```
INSERT INTO CustomerInformation (CustomerID, FirstName, LastName, Gender, BirthDate,  
Email, Phone, City, State)  
VALUES  
    (1, 'John', 'Smith', 'Male', '1985-05-15', 'john.smith@email.com', '123-456-7890', 'New York',  
'NY'),  
    (2, 'Jane', 'Doe', 'Female', '1992-09-20', 'jane.doe@email.com', '987-654-3210', 'Los  
Angeles', 'CA'),  
    (3, 'Michael', 'Johnson', 'Male', '1977-12-10', 'michael.johnson@email.com', '456-789-0123',  
'Chicago', 'IL'),  
    (4, 'Emily', 'Davis', 'Female', '1991-04-25', 'emily.davis@email.com', '234-567-8901',  
'Houston', 'TX'),
```

(5, 'William', 'Brown', 'Male', '1972-07-30', 'william.brown@email.com', '789-012-3456', 'Miami', 'FL');

- Show data

SELECT * FROM CustomerInformation

	CustomerID	FirstName	LastName	Gender	BirthDate	Email	Phone	City	State
2	2	Jane	Doe	Female	1992-09-20	jane.doe@email.com	987-654-3210	Los Angeles	CA
3	3	Michael	Johnson	Male	1977-12-10	michael.johnson@email.com	456-789-0123	Chicago	IL
4	4	Emily	Davis	Female	1991-04-25	emily.davis@email.com	234-567-8901	Houston	TX
5	5	William	Brown	Male	1972-07-30	william.brown@email.com	789-012-3456	Miami	FL

- String Functions

SELECT UPPER(FirstName) AS UpperFirstName, LOWER(LastName) AS LowerLastName FROM CustomerInformation;

	UpperFirstName	LowerLastName
1	JOHN	smith
2	JANE	doe
3	MICHAEL	johnson
4	EMILY	davis
5	WILLIAM	brown

SELECT SUBSTRING(Email, 1, 3) AS EmailPrefix FROM CustomerInformation;

	EmailPrefix
1	joh
2	jan
3	mic
4	emi
5	wil

- Date Functions

SELECT FirstName, LastName, YEAR(BirthDate) AS BirthYear, MONTH(BirthDate) AS BirthMonth, DAY(BirthDate) AS BirthDay FROM CustomerInformation;

	FirstName	LastName	BirthYear	BirthMonth	BirthDay
1	John	Smith	1985	5	15
2	Jane	Doe	1992	9	20
3	Michael	Johnson	1977	12	10
4	Emily	Davis	1991	4	25
5	William	Brown	1972	7	30

- Aggregate Functions

```
SELECT COUNT(*) AS TotalCustomers  
FROM CustomerInformation;
```

	TotalCustomers
1	5

```
SELECT COUNT(DISTINCT State) AS DistinctStates  
FROM CustomerInformation;
```

	DistinctStates
1	5