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SQL ASSIGNMENT 2:- DATA TRANSFORMATION CHALLENGE

Task:

1. Continue with the sample dataset from Assignment 1.
2. Deepen your understanding of data transformation with these techniques:
   - Aggregate Functions: Utilize SUM to calculate total sales, MAX to find the highest product price, or MIN to identify the lowest customer order value.
   - Data Conversion: Convert data types (e.g., VARCHAR to INT) if necessary for calculations.
   - Derived Columns: Create new columns based on existing data (e.g., calculate profit margin based on sale price and cost).
   - Conditional Split: Split a single column into multiple columns based on specific criteria (e.g., separate a "full name" column into "first name" and "last name").

Solution:

- Show data (Current data from assignment 1)

   SELECT * FROM CustomerInformation

	CustomerID	FirstName	LastName	Gender	Age	BirthDate	Email	Phone	City	State	Sales
1	1	John	Smith	Male	35	1985-05-15	john.smith@email.com	123-456-7890	New York	NY	1200.50
2	2	Jane	Doe	Female	28	1992-09-20	jane.doe@email.com	987-654-3210	Los Angeles	CA	800.75
3	3	Michael	Johnson	Male	45	1977-12-10	michael.johnson@email.com	456-789-0123	Chicago	IL	300.20
4	4	Emily	Davis	Female	30	1991-04-25	emily.davis@email.com	234-567-8901	Houston	TX	150.00
5	5	William	Brown	Male	50	1972-07-30	william.brown@email.com	789-012-3456	Miami	FL	50.00

- Aggregate Functions

   SELECT SUM(Sales) AS TotalSales, MAX(Sales) AS HighestSales, MIN(Sales) AS LowestSales FROM CustomerInformation;

	TotalSales	HighestSales	LowestSales
1	2501.45	1200.50	50.00

- Data Conversion

   SELECT CAST(BirthDate AS VARCHAR(10)) AS "Converted to Varchar"
   FROM CustomerInformation;

	Converted to Varchar
1	1985-05-15
2	1992-09-20
3	1977-12-10
4	1991-04-25
5	1972-07-30

- ## Derived Columns

SELECT *, Sales*0.18 as 'SalesTax'
FROM CustomerInformation

	CustomerID	FirstName	LastName	Gender	Age	BirthDate	Email	Phone	City	State	Sales	SalesTax
1	1	John	Smith	Male	35	1985-05-15	john.smith@email.com	123-456-7890	New York	NY	1200.50	216.0900
2	2	Jane	Doe	Female	28	1992-09-20	jane.doe@email.com	987-654-3210	Los Angeles	CA	800.75	144.1350
3	3	Michael	Johnson	Male	45	1977-12-10	michael.johnson@email.com	456-789-0123	Chicago	IL	300.20	54.0360
4	4	Emily	Davis	Female	30	1991-04-25	emily.davis@email.com	234-567-8901	Houston	TX	150.00	27.0000
5	5	William	Brown	Male	50	1972-07-30	william.brown@email.com	789-012-3456	Miami	FL	50.00	9.0000

- ## Condition Split

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

	BirthDate	BirthYear	BirthMonth	BirthDay
1	1985-05-15	1985	5	15
2	1992-09-20	1992	9	20
3	1977-12-10	1977	12	10
4	1991-04-25	1991	4	25
5	1972-07-30	1972	7	30