TOP SQL QUESTIONS & ANSWERS

PART 5

CALCULATE A ROLLING AVERAGE OF STOCK PRICE FOR 3 MONTHS?

```
CREATE TABLE STOCK
(
STOCK_DATE DATE,
STOCK_PRICE INT
);
INSERT INTO STOCK VALUES
('2022-01-01',100),
('2024-01-10',120),
('2024-01-20',110),
('2024-01-30',100),
('2021-02-01',110),
('2023-02-15',130),
('2024-03-01',120),
('2021-03-15',130),
('2022-04-10',100),
('2023-04-14',120),
('2023-04-18',110),
('2022-05-26',120),
('2022-05-10',130);
SELECT * FROM STOCK;
/*---------AGGREGATE STOCK PRICE BY MONTH----------------------*/
```

SELECT EXTRACT (MONTH FROM STOCK_DATE) AS MONTH, AVG(STOCK_PRICE) AS MONTHLY_STOCK_PRICE

FROM STOCK GROUP BY MONTH ORDER BY MONTH;

/*--------DEFINING ROLLING WINDOW USING ROWS BETWEEN ---*/

WITH CTE AS

(

SELECT EXTRACT (MONTH FROM STOCK_DATE) AS MONTH, AVG(STOCK_PRICE) AS MONTHLY_STOCK_PRICE

FROM STOCK GROUP BY MONTH ORDER BY MONTH

)

SELECT *, ROUND(AVG(MONTHLY_STOCK_PRICE)

OVER (ORDER BY MONTH

ROWS BETWEEN 2 PRECEDING AND CURRENT ROW),2) AS ROLLING_AVERAGE_3MONTH

FROM CTE;

➢ CALCULATE YEAR OVER YEAR GROWTH IN REVENUE ?

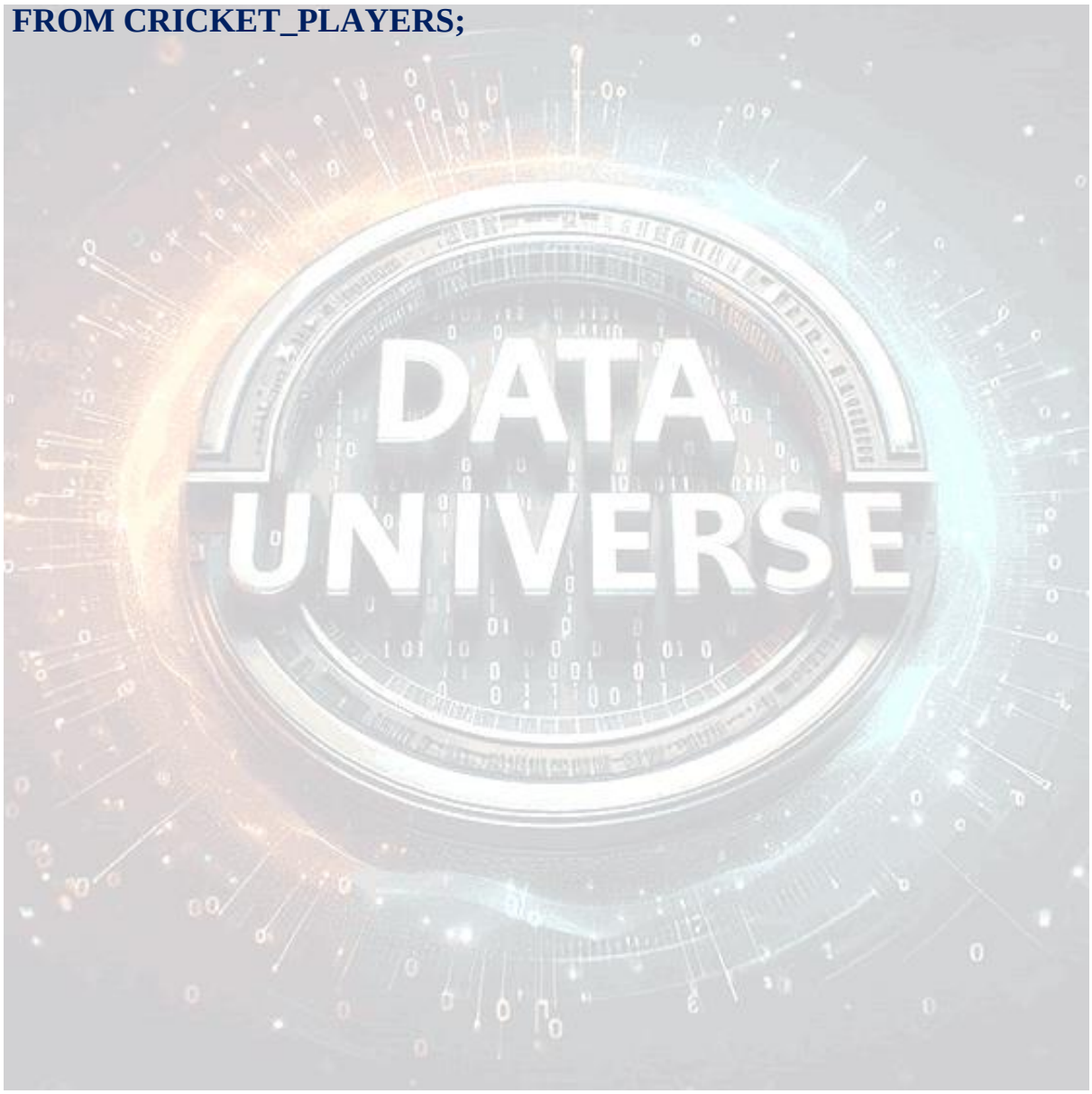
```
CREATE TABLE SALES
(
ITEM_TYPES VARCHAR (100),
ORDER_DATE DATE,
TOTAL_REVENUE INT);


INSERT INTO SALES VALUES
('Cereal','2022-08-22',5000),
('Office Supplies','2024-02-05',6000),
('Fruits','2021-06-20',7000),
('Office Supplies','2023-01-02',3000),
('Baby Food','2024-04-02',7000),
('Household','2021-04-28',2000),
('Vegetables','2022-07-17',1000),
('Personal Care','2023-07-14',4000),
('Cereal','2023-04-18',1000),
('Vegetables','2022-06-26',4000);

SELECT * FROM SALES;

SELECT EXTRACT (YEAR FROM ORDER_DATE) AS YEARS,
SUM(TOTAL_REVENUE) AS CURRENT_YEAR_REVENUE FROM
SALES
GROUP BY YEARS ORDER BY YEARS;

/*----LAG (expression, offset, default) OVER (PARTITION BY column
name(s) ORDER BY column name(s))----*/

WITH CTE AS
(SELECT EXTRACT (YEAR FROM ORDER_DATE) AS YEARS,
SUM(TOTAL_REVENUE) AS CURRENT_YEAR_REVENUE FROM
SALES
GROUP BY YEARS ORDER BY YEARS)

SELECT *, LAG(CURRENT_YEAR_REVENUE,1,0) OVER (ORDER BY
YEARS) AS PREVIOUS_YEAR_REVENUE
FROM CTE;
```

```
WITH CTE AS
(
SELECT EXTRACT (YEAR FROM ORDER_DATE) AS YEARS,
SUM(TOTAL_REVENUE) AS CURRENT_YEAR_REVENUE FROM
SALES
GROUP BY YEARS ORDER BY YEARS
),

CTE1 AS
(
SELECT *, LAG(CURRENT_YEAR_REVENUE,1) OVER (ORDER BY
YEARS) AS PREVIOUS_YEAR_REVENUE FROM CTE
)

SELECT *,
 ROUND (((CURRENT_YEAR_REVENUE -
PREVIOUS_YEAR_REVENUE)/PREVIOUS_YEAR_REVENUE) *100,2)
AS YOY_GROWTH_PERCENTAGE
 FROM CTE1 ORDER BY YEARS;
```

- **HOW TO SPLIT FULL NAME COLUMN INTO FIRST AND LAST NAME COLUMNS IN SQL?**

```
CREATE TABLE CRICKET_PLAYERS (
FULL_NAME VARCHAR (40),
COUNTRY VARCHAR (40)
);

INSERT INTO CRICKET_PLAYERS VALUES
('SACHIN TENDULKAR','INDIA'),
('SHANE WARNE', 'AUSTRALIA'),
('BRIAN LARA','WEST INDIES');

  SELECT * FROM CRICKET_PLAYERS;

 /* --INSTR () returns the position of the first occurrence of a character or substring within a given string--*/

SELECT FULL_NAME, INSTR (FULL_NAME,' ') FROM CRICKET_PLAYERS;

/*--SUBSTRING () returns a string with a specified length starting from a location in an input string--

------------SUBSTRING (input string, start, length) ----------------------------*/

  SELECT *, SUBSTRING (FULL_NAME,1, INSTR (FULL_NAME,' ')) AS FIRST_NAME FROM CRICKET_PLAYERS;

 /*------LENGTH () return the number of characters in that particular string
 --------including spaces and special characters----------------------------*/
    SELECT *, SUBSTRING (FULL_NAME, INSTR (FULL_NAME,' '), LENGTH(FULL_NAME)) AS LAST_NAME FROM CRICKET_PLAYERS;
```

```
/*--------------------------------------------------------------------------------*/
  SELECT *,
SUBSTRING (FULL_NAME,1, INSTR (FULL_NAME,' ')) AS
FIRST_NAME,
SUBSTRING (FULL_NAME, INSTR (FULL_NAME,' '),
LENGTH(FULL_NAME)) AS LAST_NAME
 FROM CRICKET_PLAYERS;
```



- **FIND EMPLOYEES WHO JOINED IN THE LAST 6 MONTHS?**

```
CREATE TABLE EMPLOYEES (
ID INT,
`NAME` VARCHAR (40),
DEPT VARCHAR (40),
HIRE_DATE VARCHAR (40)
);

INSERT INTO EMPLOYEES VALUES (1,'A', 'SALES','2022-06-08'),
(2,'B', 'ADMIN','2023-11-11'),
(3, 'C','ANALYST','2024-07-22'),
(4,'D','HR','2023-12-30'),
(5, 'E','R&D','2022-09-20'),
(6,'F','SALES','2024-09-10');

SELECT * FROM EMPLOYEES;

DESCRIBE EMPLOYEES;

ALTER TABLE EMPLOYEES
MODIFY COLUMN HIRE_DATE DATE;

/*------DATE_SUB (date, INTERVAL value unit) ---------*/

SELECT DATE_SUB (CURRENT_DATE, INTERVAL 6 MONTH);

SELECT * FROM EMPLOYEES WHERE HIRE_DATE >=
DATE_SUB (CURRENT_DATE, INTERVAL 6 MONTH);
```