

# SQL PROBLEM CHALLENGE

## DAY 7

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# **PROBLEM STATEMENT**

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**In the given input table DAY\_INDICATOR field indicates the day of the week with the first character being Monday, followed by Tuesday and so on.**

**For Example:**

- 1010101 means [Monday, Wednesday, Friday, Sunday] are 1
- 1000110 means [Monday,Friday,Saturday] are 1

**To Do:**

**Write a query to filter the dates column to showcase only those days where day\_indicator character for that day of the week is 1**

# INPUT

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INPUT		
PRODUCT_ID	DAY_INDICATOR	DATES
AP755	1010101	03/04/2024
AP755	1010101	03/05/2024
AP755	1010101	03/06/2024
AP755	1010101	03/07/2024
AP755	1010101	03/08/2024
AP755	1010101	03/09/2024
AP755	1010101	03/10/2024
XQ802	1000110	03/04/2024
XQ802	1000110	03/05/2024
XQ802	1000110	03/06/2024
XQ802	1000110	03/07/2024
XQ802	1000110	03/08/2024
XQ802	1000110	03/09/2024
XQ802	1000110	03/10/2024

# EXPECTED OUTPUT

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OUTPUT		
PRODUCT_ID	DAY_INDICATOR	DATES
AP755	1010101	03/04/2024
AP755	1010101	03/06/2024
AP755	1010101	03/08/2024
AP755	1010101	03/10/2024
XQ802	1000110	03/04/2024
XQ802	1000110	03/08/2024
XQ802	1000110	03/09/2024

# LOGIC

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sql

```
WITH cte AS (
    SELECT *, DATEPART(dw, dates) AS position
    FROM Day_Indicator
)
```

- Here, a Common Table Expression (CTE) named “cte” is defined.
- It calculates the position of the day within the week using the DATEPART(dw, dates) function and names it as “position” column.

# LOGIC

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sql

```
SELECT *,  
       CASE  
           WHEN SUBSTRING(day_indicator, position, 1) = '1' THEN 1  
           ELSE 0  
       END AS flag  
FROM cte
```

- **SUBSTRING(day\_indicator, position, 1)** extracts a single character from the day\_indicator string at the position specified by position.
- If the extracted character is '1', the flag column is set to 1, otherwise, it's set to 0

# DRAFT 1

```
-- Since sunday is interpreted as the first day of week (by default)
-- We used DATEFIRST to use MONDAY as first day

SET DATEFIRST 1 -- ( Monday )

-- Draft 1
With cte as(
    select *,datepart(dw,dates) as position
    from Day_Indicator
)
    select *,
    case when SUBSTRING(day_indicator,position,1)='1' then 1 else 0 end as flag
    from cte
```

	Product_ID	Day_Indicator	Dates	position	flag
1	AP755	1010101	2024-03-04	2	0
2	AP755	1010101	2024-03-05	3	1
3	AP755	1010101	2024-03-06	4	0
4	AP755	1010101	2024-03-07	5	1
5	AP755	1010101	2024-03-08	6	0
6	AP755	1010101	2024-03-09	7	1
7	AP755	1010101	2024-03-10	1	1
8	XQ802	1000110	2024-03-04	2	0
9	XQ802	1000110	2024-03-05	3	0
10	XQ802	1000110	2024-03-06	4	0
11	XQ802	1000110	2024-03-07	5	1
12	XQ802	1000110	2024-03-08	6	1
13	XQ802	1000110	2024-03-09	7	0
14	XQ802	1000110	2024-03-10	1	1

# OPTIMIZED SOLUTION

```
select Product_ID, Day_Indicator, Dates
from(
    select *,case when SUBSTRING(day_indicator,datepart(dw,dates),1)='1' then 1 else 0 end as flag
    from Day_Indicator
) sq
where flag = 1
```

	Product_ID	Day_Indicator	Dates
1	AP755	1010101	2024-03-04
2	AP755	1010101	2024-03-06
3	AP755	1010101	2024-03-08
4	AP755	1010101	2024-03-10
5	XQ802	1000110	2024-03-04
6	XQ802	1000110	2024-03-08
7	XQ802	1000110	2024-03-09



**THANK YOU**

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