

## Date time continued:

Start @ 9:03

### Recap:

Extract

Date time format

Lag, lead

First, last, nth value.

### Agenda:

- More datetime func.
- Date-add
- Date-sub,
- Date-diff
- etc.

m.d. Transaction time	m.d. Start time	m.d. end time
_____	_____	_____

trans 1  
trans 2  
⋮  
trans ... k

Date-add ( ) → add's days to the datetime column

Find all trans within first 30 mins of market start

	mkt. start	mkt. trans	first 30 min.
Trans 1	Jan 1 9:AM	Jan 1 9:22AM	Jan 1 9:30AM
Trans 2	Jan 2 1 PM	Jan 2 1:29PM	Jan 2 1:30PM
Trans 3	Jan 2 1 PM.	Jan 2 1:45PM	Jan 2 1:30PM

Any trans within this interval is what we needed

Date-diff → find the difference between 2 date time columns

days visited

trans	Cus-Id	mkt. date	Price
1 → milk	A	Jan 1	15
2 → biscuit	A	Jan 1	5
3 → bread	B	Jan 10	8
4 → choc	B	Jan 10	12
5 → ice cream	B	Jan 14	2.

total dys visit

total purchase

A → 1 → 2

B → 2 → 3

overall amount spent

A → 15 + 5 → 20

B → 8 + 12 + 2 = 22

Days since each Visit

trans	Cus-Id	mk-date
1	A	Jan 1
2	A	Jan 10
3	B	Jan 10
4	B	Jan 11
5	B	Jan 11

$$\text{Jan 10} - \text{Jan 1} = 9$$

$$\text{Jan 11} - \text{Jan 10} = 1$$

$$\text{Jan 11} - \text{Jan 11} = 0$$

↓  
distinct cus-id, mk-date

A	Jan 1
A	Jan 10
B	Jan 10
B	Jan 11

$$\rightarrow - = 9$$

$$\rightarrow - = 1$$

$$\text{Visit} \rightarrow 4, 1, 4, 3, 4 \rightarrow \frac{6}{3} = 2.$$

$$1, 3, 2, 4, 1, 4 \rightarrow \frac{6}{2} = 3$$

$$4, 1, 2, 0, 1, 3 \rightarrow \frac{6}{1} = 6.$$

subtract  
May 31 from all

April 15

May 31  $\rightarrow$  46

April 13  
 April 2  
 May 10  
  
 May 24  
 :  
 :  
 :  
 May 31  
 June 2  
 June 5.

May 31  $\rightarrow$  29  
 May 31  $\rightarrow$  21  
  
 May 31  $\rightarrow$  7  
 :  
 :  
 :  
 May 31  $\rightarrow$  0  
 May 31  $\rightarrow$  -2  
 May 31  $\rightarrow$  -5

8  
 10  
 12

Count  $\rightarrow$  3  
 Sum = 30  
 ↓  
 8 + 10 + 12