Inventory aging analysis

We want to generate an inventory age report which would show the distribution of remaining inventory across the length of time the inventory has been sitting at the warehouse. We are trying to classify the inventory on hand across the below 4 buckets to denote the time the inventory has been lying in the warehouse.

0-90 days old

91-180 days old

181-270 days old

271 – 365 days old

For example, the warehouse received 100 units yesterday and shipped 30 units today, then there are 70 units which are a day old.

The warehouses use FIFO (first in first out) approach to manage inventory, i.e., the inventory that comes first will be sent out first.

ID	OnHandQuantity	OnHandQuantityDelta	event_type	event_datetime
TR0013	278	99	OutBound	25/05/2020 00:25
TR0012	377	31	InBound	24/05/2020 22:00
TR0011	346	1	OutBound	24/05/2020 15:01
TR0010	346	1	OutBound	23/05/2020 05:00
TR009	348	102	InBound	25/04/2020 18:00
TR008	246	43	InBound	25/04/2020 02:00
TR007	203	2	OutBound	25/02/2020 09:00
TR006	205	129	OutBound	18/02/2020 07:00
TR005	334	1	OutBound	18/02/2020 08:00
TR004	335	27	OutBound	29/01/2020 05:00
TR003	362	120	InBound	31/12/2019 02:00
TR002	242	8	OutBound	22/05/2019 00:50
TR001	250	250	InBound	20/05/2019 00:45

For example, on 20th May 2019, 250 units were inbounded into the FC. On 22nd May 2019, 8 units were shipped out (outbound) from the FC, reducing inventory on hand to 242 units. On 31st December, 120 units were further inbounded into the FC increasing the inventory on hand from 242 to 362.On 29th January 2020, 27 units were shipped out reducing the inventory on hand to 335 units.

On 29th January, of the 335 units on hand, 120 units were 0-90 days old (29 days old) and 215 units were 181-270 days old (254 days old).

0-90 days old	91-180 days old	181-270 days old	271-365 days old
176	102	0	0

Solution Query-

--Inventory Age--

WITH left_inv as (

SELECT onhandquantity as left_inv_count, onhandquantitydelta, event_datetime as day1time

FROM inventoryage LIMIT 1)

,

Days as (

SELECT day1time,

day1time - interval '90 day'   as "90_days_old_date",

day1time - interval '180 day'   as "180_days_old_date",

day1time - interval '270 day'   as "270_days_old_date",

day1time - interval '365 day'   as "365_days_old_date"

FROM left_inv)

,

"90_days_inv_count" as (

SELECT SUM(onhandquantitydelta) as "90_inv_count"

FROM inventoryage, Days

WHERE event_type = 'InBound' and event_datetime > "90_days_old_date")

,

"91-180_days_inv_count" as (

SELECT SUM(onhandquantitydelta) as "90-180_inv_count"

FROM inventoryage, Days

WHERE event_type = 'InBound' and event_datetime < "90_days_old_date" and event_datetime > "180_days_old_date")

,

"181-270_days_inv_count" as (

SELECT SUM(onhandquantitydelta) as "181-270_inv_count"

FROM inventoryage, Days

WHERE event_type = 'InBound' and event_datetime < "180_days_old_date" and event_datetime > "270_days_old_date")

,

"271-365_days_inv_count" as (

SELECT SUM(onhandquantitydelta) as "271-365_inv_count"

FROM inventoryage, Days

WHERE event_type = 'InBound' and event_datetime < "270_days_old_date" and event_datetime > "365_days_old_date")

SELECT

--(0-90 DAYS OLD INVENTORY COUNT)

CASE WHEN left_inv_count > "90_inv_count" THEN "90_inv_count" ELSE left_inv_count END as "0-90 days",

--(91-180 DAYS OLD INVENTORY COUNT)

CASE WHEN (left_inv_count - "90_inv_count") > "90-180_inv_count" THEN "90-180_inv_count"

WHEN (left_inv_count - "90_inv_count") > 0 THEN left_inv_count - "90_inv_count"

ELSE 0

END AS "91-180 days",

--(181-270 DAYS OLD INVENTORY COUNT)

CASE WHEN (left_inv_count - "90_inv_count" - "90-180_inv_count") > "181-270_inv_count" THEN "181-270_inv_count"

WHEN (left_inv_count - "90_inv_count" - "90-180_inv_count") > 0 THEN (left_inv_count - "90_inv_count" - "90-180_inv_count")

ELSE 0

END AS "181-270 days",

--(181-270 DAYS OLD INVENTORY COUNT)

CASE WHEN (left_inv_count - "90_inv_count" - "90-180_inv_count"-"271-365_inv_count") > "271-365_inv_count" THEN "271-365_inv_count"

WHEN (left_inv_count - "90_inv_count" - "90-180_inv_count"-"271-365_inv_count") > 0 THEN (left_inv_count - "90_inv_count" - "90-180_inv_count"-"271-365_inv_count")

ELSE 0

END AS "271-365 days"

FROM left_inv, "90_days_inv_count", "91-180_days_inv_count", "181-270_days_inv_count", "271-365_days_inv_count", Days