Q) 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 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.

Table

Description automatically generated

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 hands, 120 units were 0-90 days old (29 days old) and 215 units were 181-270 days old (254 days old).

**Columns:**

ID of the log entry

OnHandQuantity: Quantity in warehouse after an event

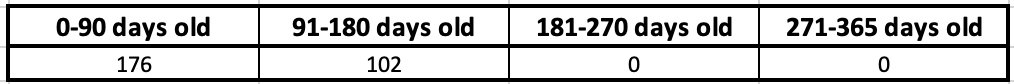
OnHandQuantityDelta: Change in on-hand quantity due to an event

event\_type: Inbound – inventory being brought into the warehouse; Outbound – inventory being sent out of warehouse

event\_datetime: date- time of event

**The data is sorted with latest entry at top.**

**Sample output:**

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SOLUTIONS from an ex-PhD and MBA graduate

FIFO only

Pseudocode logic

Look at the time period look for the oldest inventory, check to see if the total outbound exceeds the oldest inventory and if the total outbound exceeds the oldest inventory, then we know that the total inbound – the amount exceeded by the oldest inventory will give us the amount sitting in the warehouse.

The sweetest part of the logic is if inbound < onhand day 0 then we know for sure we have those in the warehouse but if inbound > onhand0 then we know to consider what we have onhand or more accurately subtract to show that we have more going out than coming in and that should in effect be -ve or 0

Mathematical solution

Sitting inventory within a time period using FIFO = (oldest inventory – total outbound) + inbound

Trust me this is not perfectly accurate as some minute-minute transactions can throw this off but this is a good general formula

LIFO scenario

(Latest inventory – total inbound) + outbound

NOTE:

Linked to the database script for the supply chain warehouse. So, look at that under databases if you want a go at it. Before I have some sql mastery I just understood the solution given but I will be writing my own query on this.

If I fail at the logic fine but I need to write queries that meet my own intended logic showing understanding then I can use other sources to determine the logic missed.

Also logics are missed because I try to work on a time crunch but I suppose that these problems in real life with an adequate amount of time should be solvable.