Weekly Challenge

Solve the challenge, share your solution and summit the ranks of our Community!

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IDEAS WANTED

We're actively looking for ideas on how to improve Weekly Challenges and would love to hear what you think!

SUBMIT FEEDBACK

Weekly Challenge

Challenge #65: Fulfilling Inventory Orders

JoeM
Alteryx Alumni (Retired)

Last week's challenge can be found HERE!

You have been given some order information that contains a list of orders with SKUs and related quantities. Additionally, you have a data set with the total inventory for each SKU.
You have been tasked with figuring out how to consume all of the inventory with the least amount of orders. In other words, you have been asked to fill the largest orders for each SKU in descending order.

Additionally, only complete orders may be fulfilled. For example, if an order calls for 4 units of a SKU, and only 3 are left in inventory, you can't fulfill the order.

challenge_65_start_file.yxmd

challenge_65_solution.yxmd

Basic | Data Analysis | Join | Preparation

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ACE SeanAdams
17 - Castor

nice one!

this solution uses a basic "Fill in reverse size order" principle - but this doesn't guarantee maximum packing - with different order data, we may need to add an iterative macro or some other Knapsack process to maximize fill.

But for this input data, it matches the provided output.

▷ Spoiler

challenge_65_SeanSolution.yxmd

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ACE BenMoss
ACE Emeritus

Here's my solution :)

Loved that you made it sound so easy before the complete orders only caveat ;)

▷ Spoiler

challenge_65_BM.yxmd

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15 - Aurora

My solution.

Spoiler

challenge_65_NicoleJohnson.yxmd

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JoeM
Alteryx Alumni (Retired)

@BenMoss, I have to do at least one caveat. ;)

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toddhowl
7 - Meteor

Had to do this one twice. The first time through I had way too many tools, so tried it again with fewer. :-)

Spoiler

challenge_65_toddhowl.yxmd

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patrick_digan
17 - Castor

I saw that many people have already provided similar looking solutions, so I decided to go down the iterative macro route that @SeanAdams mentioned. While I've created a macro that gets the correct answer and will allow for some more flexibility, it still has some major gaps. The iterative macro can be tweaked to find all combinations by unchecking the box (and then you could figure out the smallest set for sure), but it quickly blows up the processing because I haven't optimized it yet. It's not very well laid out, but here is my basic logic:

Spoiler

challenge_65_start_file_DIGAN.yxzp

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MinaGO
7 - Meteor

My multirow is a bit crazy, I think it will be interesting to see what other people did. This was definitely a fun one! I never usually get to use multirow in such a way. Thanks Joe :)

Spoiler

challenge_65_start_file.yxmd

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Simona
7 - Meteor

Spoiler

It was a good exercise, these challenges are so neat and definitely I learnt a new technique once again! :)

challenge_65_start_file.yxmd

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Simona
7 - Meteor

Mina, I just downloaded your workflow and looked at your multirow formula. I did kind of similar thing but I used first a multirow to compute the cumulative/ running total, then a formula to calculate the difference. I like that you did the same just using the multirow formula!

Actually, you could also simplify a little bit your Multirow, as the last IF statement is not needed and you could substitute it with [Row-1:Remaining], so your calc would look like:

IF
(IF [Row-1:Order SKU]=[Order SKU] THEN [Row-1:Remaining] ELSE [Supply] ENDIF)-[Demand]>=0
THEN ((IF [Row-1:Order SKU]=[Order SKU] THEN [Row-1:Remaining] ELSE [Supply] ENDIF)-[Demand]) ELSE
[Row-1:Remaining]
ENDIF

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