Shipping Excel Assignment By Randy Leon This document shows how I was able to solve the problem given to me. Just to reiterate what the problem is, I was asked to

## "... allocate the volume to the appropriate sea freight rate by linking the information provided in the "Volume" -tab to the corresponding sea freight rate in the "Sea Freight Rates"-tab."

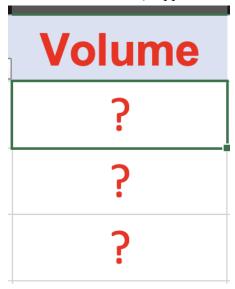
Origin Port (portcode)	Destination Port (name)	Destination Port (portcode)	Equipment type	Currency 🔻	Sea Freight Rate ▼	Volume
CNNBO PT	Brem erh aven	DEBRV PT	20DC	USD	350	?
CNXAM PT	Brem erh aven	DEBRV PT	20DC	USD	350	?
VNSGN PT	Brem erhaven	DEBRV PT	20DC	USD	400	?
INNSA PT	Bremerhaven	DEBRV PT	20DC	USD	300	?

Sample of **Sea Freight Rates** workbook

			Destination Port		
Origin Port 🔻	Equipment type 🔻	Total volume 🔻	NLRTM PT	DEBRV PT 🔻	DEHAM PT 🔻
CNNBO PT	20DC	169	85	42	42
CNXAM PT	20DC	112	56	28	28
VNSGN PT	20DC	34	17	9	9

Sample of **Volume** workbook

As I understood the assignment, there are two workbooks on this spreadsheet, one titled **Sea Freight Rates** and the other titled **Volume.** (snippets shown above)



Our goal was to populate the above column titled "Volume" in the **Sea Freight Rates** workbook with the appropriate volume

In both sheets, we have Origin Ports, Destination Ports, and Equipment Types. (Currency was the same for all values in the sheet, so we can disregard it for this exercise)

In the **Volume** workbook, the Destination Port volumes for each combination of Origin Port and Equipment type were tabulated in a row, including the total for each Origin Port and Equipment Type. (The different destination port codes were as follows: NLRTM PT, DEBRV PT, and DEHAM PT)

In order for the **Sea Freight Rates** to have proper volume referenced and populated from the **Volume** workbook, each row needed to contain a unique set of Origin Port, Equipment, and Destination Port, since each set of attributes had a unique set of volume.

In other words, our data was in a **wide** format. In order to reference each unique combination of attributes, we needed to get our data in **long** format.

To put that graphically, we needed to go from this:

Origin Port <b>▼</b>	Equipment type 🔻	Total volume 🔻	NLRTM PT 🔻	DEBRV PT 🔻	DEHAM PT 🔻
CNNBO PT	20DC	169	85	42	42
(Wide format)		•			*

## to this:

Origin+Equipment	<b>Destination Port</b>	Volume
CNNBO PT20DC	NLRTM PT	84.50
CNNBO PT20DC	DEBRV PT	42.25
CNNBO PT20DC	DEHAM PT	42.25

(Long format)

There was also this group of cells, which implied that out of 100% of all volume from an origin port, NLRTM saw 50% of it, while DEBRV and DEHAM saw 25% each.

NLRTM PT	50%
DEBRV PT	25%
DEHAM PT	25%

At first glance this wasn't the case, since 17 divided by 2 is not 9, until I moved the decimal over to find the volume numbers have been rounded.

Total volume <b>▼</b>	NLRTM PT 🔻	DEBRV PT 🔻	DEHAM PT
169	85	42	42
112	56	28	28
34	17	9	9
34	17	9	9

Total volume	NLRTM PT 🔻	DEBRV PT 🔻	DEHAM PT
169.00	84.50	42.25	42.25
112.00	56.00	28.00	28.00
34.00	17.00	8.50	8.50
34.00	17.00	8.50	8.50

In order to make my VLOOKUP formula easier to reference, I concatenated the origin and equipment text fields into a single column titled "ORIGIN+EQUIPMENT" on the **Volume** tab.

Origin Port	Equipment type 🔻	Total volume	ORIGIN+EQUIPMEN -
CNNBO PT	20DC	169	CNNBO PT20DC
CNXAM PT	20DC	112	CNXAM PT20DC
VNSGN PT	20DC	34	VNSGN PT20DC
INNSA PT	20DC	34	INNSA PT20DC

I knew the task was to turn our data from wide to long format, I'll admit I needed a quick YouTube refresher on a quick and easy way to accomplish this. Reshape your Data in Excel Without VBA Code or Pivot Tables

In her video, she made use of an offset function to generate two tables that would be properly transposed. I decided to mirror her solution with my own two tables that would become the columns of my long data set.

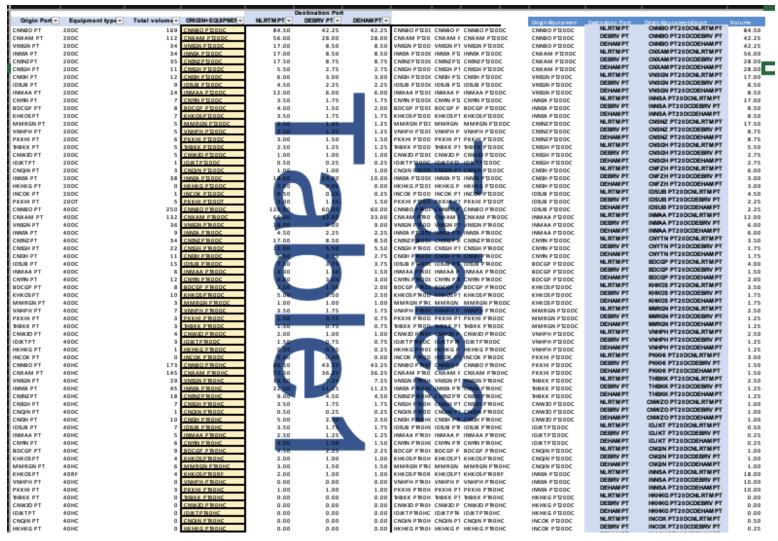
The new data set would feature four columns:

"Origin+Equipment" - concatenated Origin Port and Equipment Type

The Destination Port Code - the same three codes copied over and over until the end of the dataset.

"Origin+Equipment+Dport" - another column that concatenates my first column with the second column.(needed for later)

"Volume" - every numeric value for volume of every combination of Origin Port, Equipment, and Destination Port

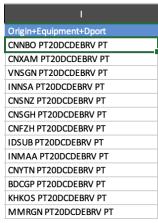


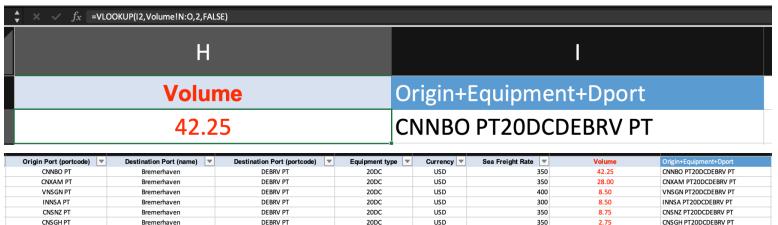
Now I successfully turned my data into long format.

All that is left to do is write a VLOOKUP function that can match the third column of my long data set with the "Sea Freight Rates"

First I made a column that concatenated Origin Port Code, Equipment, and Destination Port Code titled "Origin+Equipment+Dport"

Lastly, I was able to match the correct volume to each row of each unique combination of origin code, equipment, and destination code using the VLOOKUP code below since my concatenation on the **Sea Freights** workbook matched the one I made in the **Volume** workbook.





## This is what the final product looks like:

Bremerhaven

Bremerhaven

CNFZH PT

IDSUB PT

Origin Port (name)	Origin Port (portcode)	Destination Port (name)	Destination Port (portcode)	Equipment type	Currency 🔻	Sea Freight Rate	Volume	Origin+Equipment+Dport
NINGBO	CNNBO PT	Bremerhaven	DEBRV PT	20DC	USD	350	42.25	CNNBO PT20DCDEBRV PT
XIAMEN	CNXAM PT	Bremerhaven	DEBRV PT	20DC	USD	350	28.00	CNXAM PT20DCDEBRV PT
HO CHI MINH CITY	VNSGN PT	Bremerhaven	DEBRV PT	20DC	USD	400	8.50	VNSGN PT20DCDEBRV PT
NHAVA SHEVA	INNSA PT	Bremerhaven	DEBRV PT	20DC	USD	300	8.50	INNSA PT20DCDEBRV PT
SHENGZEN	CNSNZ PT	Bremerhaven	DEBRV PT	20DC	USD	350	8.75	CNSNZ PT20DCDEBRV PT

20DC

20DC

USD

USD

450

350

3.00

2.25

CNFZH PT20DCDEBRV PT

IDSUB PT20DCDEBRV PT

The entire coding aspect of this from start to finish only took me about 25 minutes to solve, which I hope is not a long time. This document took me a solid 45 minutes to an hour to complete as I wanted to be as thorough, neat, and clear as possible.

Attached to the submission of this document will be the completed version of my spreadsheet.

DEBRV PT

DEBRV PT

Randy Leon - 11/21/2022

Jh fhr