DATA MANAGEMENT PROJECT REPORT

(Project Semester August-December 2020)

US REGIONAL SALES

Submitted by

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B.tech(I.T)-KMO39

INT-217

Under the Guidance of

Sameeksha Khare -26806

Discipline of CSE/IT

Lovely School of Computer Science and Engineering

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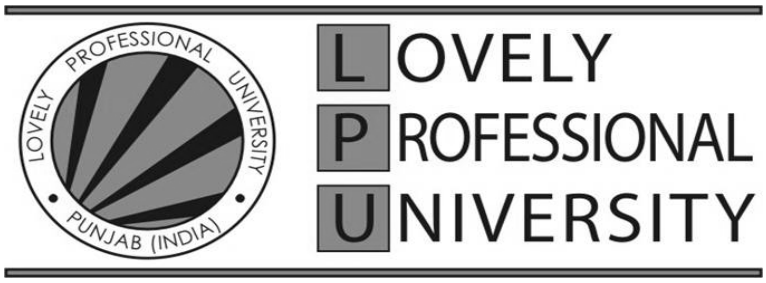

CERTIFICATE

This is to certify that Vipin Goriparthi bearing Registration no. 11914513 has completed INT-217 project titled, “US Regional Sales” under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original development, effort and study.

Sameeksha khare-26806

Designation of the Supervisor

School of Computer science and Engineering

Lovely Professional University

Phagwara, Punjab.

Date:

DECLARATION

I, Vipin Goriparthi student of B.tech Information Technology under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 28/11/2021

Registration No.11914513 Vipin Goriparthi

Acknowledgement

I'm extremely grateful to tell you that I have completed my project on data management using excel.

This project would not have been possible without our course teacher, Sameeksha Khare. I'd also like to express my gratitude to the excel online community.

During this project span time I learnt a lot of new things and I am grateful for the skills I have gained would be very much helpful for future career regardless of the path I choose.

Thank you.

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1. Introduction

Do you like working with data? Then excel will be a blessing for you! Microsoft Excel is a modern tool used in day to day life for data management in a very easy way. Excel has a vast variety of services that are used in regard of data management, representation, and presentation. An Excel spreadsheet can be understood as a collection of columns and rows that form a table. Alphabetical letters are usually assigned to columns, and numbers are usually assigned to rows. The point where a column and a row meet is called a cell. The address of a cell is given by the letter representing the column and the number representing a row. These are some basic things you need to know before starting out with excel.

The dataset used in the project will be completely transformed into a dashboard. The dashboard should differentiate the fields as slicers will be used for filtering the data. Making a dashboard to display the chosen dataset was the main objective of the project. The dashboard should firmly handle the data with the help of functions and operations provided within the software.

Each Field within the dataset provided should have a chart dedicated to itself in the dashboard. The dashboard which is being created should cover all aspects regarding the research conducted, whether it may be related to business, sales, health, or sports etc. It should not be specific about a single field. Before creating the dashboard, the data in the dataset should be well organized and well maintained as it would help in creating Pivot tables and charts. Pivot tables and charts should have names dedicated as it would be helpful too for the latter.

The dataset should be easily understandable in the sense of calculating the extra columns from the given data columns. The dataset should be understood first before working on it. The sales dataset used in the project had a wide variety of fields to work on. The fields include sales, dates, costs, price, and customer related etc. All these fields are important as they are the main content of the whole dataset. The dashboard should showcase its nature in the sense of attractiveness, user friendly design, and should not contain unnecessary data. The problems faced during creating a dashboard can be a little bit tiring. It includes what fields to choose for the chart, what chart to use, what filters should be applied etc.

The objectives of the project shall cover each aspect of the dashboard and shall make you familiar with the dataset’s main fields and goals.

2. Objectives

The final dashboard made from the data set should contain following objectives.

1.Creating Pivot Charts for every valuable category of the sales dataset.

Pivot charts are made from pivot tables itself. So, we must make pivot tables first and then go for charts.

Pivot tables can help us transform tables as our needs. In this project there are a total of 16 pivot tables.

Its important to have same copied data for the pivot tables as it would help us in creating connections easily in a hassle-free manner. Each valuable field has its own importance in the data representation process. So, it's important to analyze the required fields once again before finalizing for pivot tables. In this dataset, which is related to business sales of products, we shall make sure that all aspects related to sales are put together in the final dashboard.

2.Displaying trends in profits and sales of each Sales Channel via Spark lines.

Sparklines are an important feature in excel as it can be used in many ways. An interesting feature of this is showing trends of a chunk of data. It can be profit or loss, sales, revenue, budget i.e, all fields which have a long data over a timeline, can be months or years or dates itself. These trends can show the user a packed visual data showcasing how the trends were changing. In this project they are used in profits sales quantity, revenue of warehouse and according to by months. Highlighting the maximum and minimum will a huge advantage for the presentation purpose as it can show and tell how, when it took place. So, its important that sparklines play a vital role for making dashboards.

3.Displaying Top Customers, Sales by Channel and Sales Team According to Profits, Sales via charts throughout the datasets.

Viewers will require top of a specific field if there are individuals from the sense of regions, sales, profits etc. So, applying filter and showing top 10 will give the viewers a broad idea about the fields and their top performers as top gainers are important as well.

4.Inserting Slicers for each possible category to Change Charts according to our needs.

Slicers are used to filter the data. With the help of slicers, we can apply multiple filters on the charts we create. When choosing fields for slicers we should check and think thoroughly as it is the part of the dashboard. It will be convenient for the dashboard have less slicers and more charts. In this project slicers are included in states, months, region and sales channel.

5.Creating relationships among tables in different sheets via data model and relationships option, showing sales via map, calculating profits using formulas.

As it is familiar for a table to have relationships with their neighboring sheet tables, it is the first step in creating the pivot tables. Relationships should be defined first, and these relationships will help us further in crating good and organized tables. As the dataset was predefined and it had sheets with common columns, making relationships is easy.

Insert Maps option is used to display map and in its smaller regions including states and city. In this project, the dataset had states and region so putting in maps is justified.

While the columns given in the main sheets were lacking some playable content, using formulas to calculate new columns is important. Calculating profits, budget, revenues, averages of some fields is required.

3. Source of dataset

The dataset used in this project is from “dataworld” website -https://data.world/ , which is quite popular for data related works, free data sets and projects related to data science. The dataset https://data.world/dataman-udit/us-regional-sales-data is related to sales of Unites States Region.

The dataset consists of 6 tables. Each table have a common column which relates them to each individual table in their respective sheets.

*Added columns are nothing but columns calculated from the readymade columns.

S.no	Table name	Rows	Columns	Added columns
1	Sales Order Sheet	7991	16	5
2	Customer Sheet	50	2	-
3	Store Locations Sheet	367	15	-
4	Regions Sheet	48	3	-
5	Products Sheet	47	2	-
6	Sales Team Sheet	28	3	-

4.ETL Process (Extract... Transform... Load...)

This process focuses on how we should handle the data before creating the overall dashboard. The dataset is taken from a familiar website as stated in the source of dataset point. The dataset primarily had 6 sheets each had their tables in them.

Figure 1 Sheet names

They all had a common column in the sense of relationship. Removing unnecessary columns is a prime task as they will become obstructions later. Changing the column names is required as they should be easily understandable.

Creating relationships among the table to it into a powerful dataset is important.

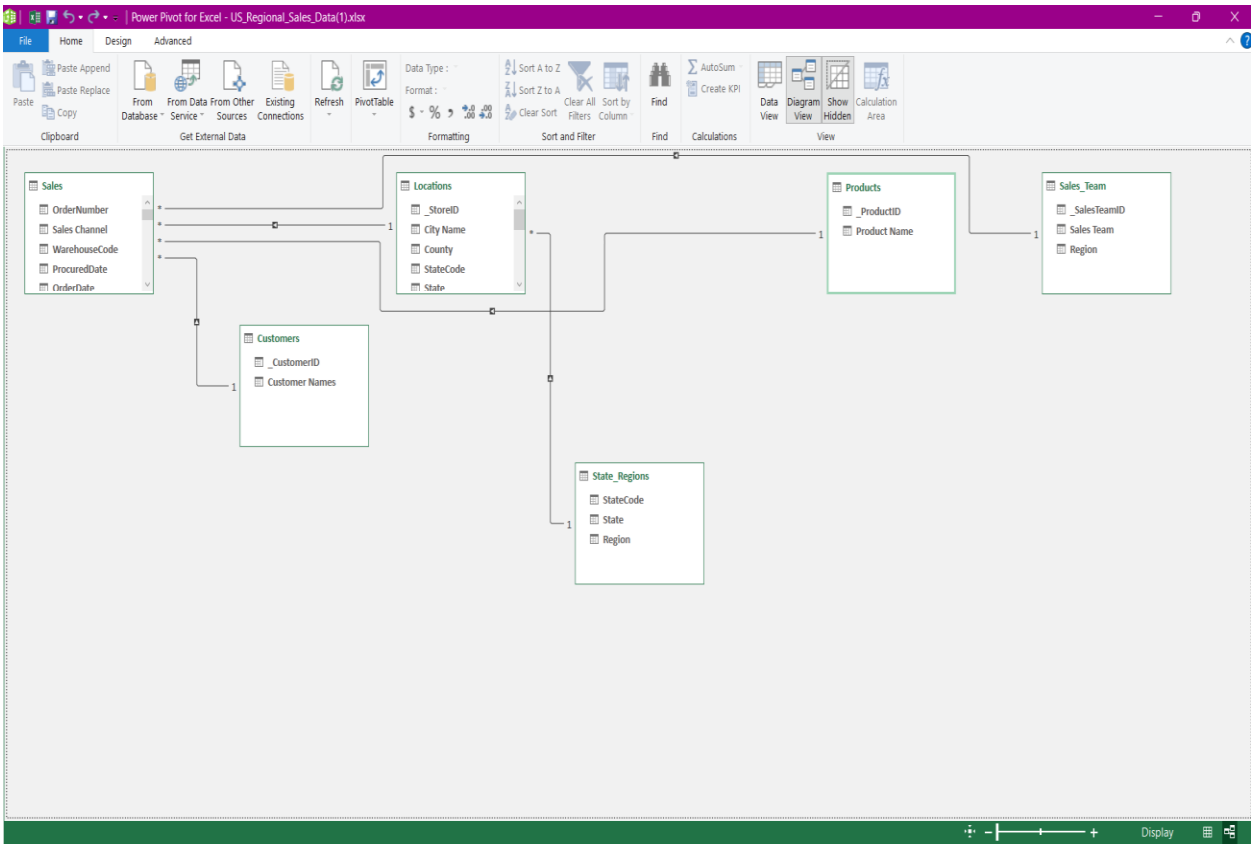
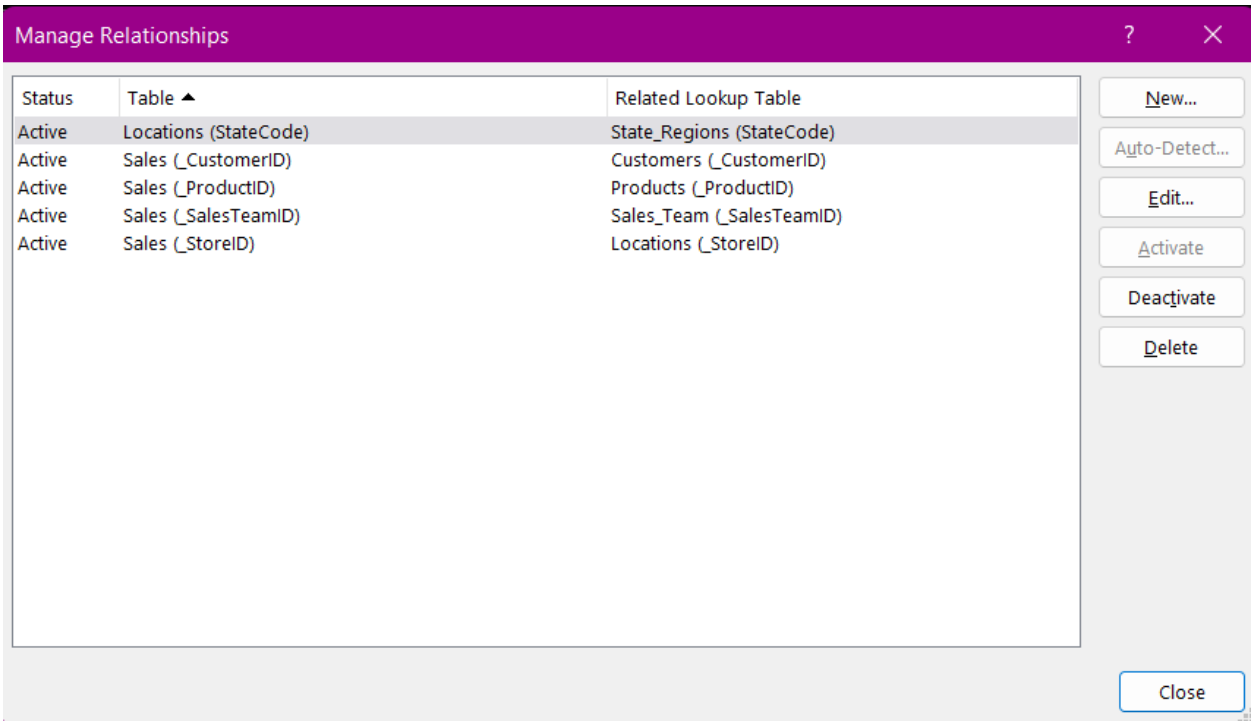


Figure 2 Datamodel

As shown in the data model the relationship among tables is defined.

And the relationship for which the columns are looked are created via relationship option, and new for every common column.

Figure 3 Relationships



The main table is connected with all other tables as shown above.

After making these connections, refreshing the data model will let us use all the connections in the pivot table.

Adding columns in the main table sales order sheet

5.Analysis on dataset

*This section may contain charts in the form figures and charts itself as all features of excel are not supported. So, before looking at the data please read captions which will tell if it's a chart or figure.

Formulas:

There are several formulas used to derive new columns in the main table Sales order sheet. We will see them one-by-one.

A total of 5 columns are added in the main table.

Figure 4 Added col2

DaysTakenToDeliver
19
32
31
7
26
13
14
31
20
30
19
16

Figure 5 Added Col

Profits	Profit-%	Revenue	Budget
4,073.43	81.37	9,079.34	5,005.91
886.41	8.82	10,932.39	10,045.98
905.51	115.91	1,686.73	781.22
5,486.76	46.83	17,204.26	11,717.50
1,312.13	11.11	13,121.28	11,809.15
2,700.10	120.93	4,932.88	2,232.78
1,908.16	88.89	4,054.84	2,146.68
998.64	13.10	8,624.58	7,625.94
2,017.24	22.81	10,862.04	8,844.80
5,164.90	53.23	14,868.64	9,703.74
337.68	45.16	1,085.40	747.72
12,869.70	93.18	26,681.08	13,811.38

All the columns calculated are used in the making of dashboard.

Revenue= (Unit Price*Order Quantity)- (Unit Price*Order Quantity*Discount Applied)

Budget= (Unit Cost*Order Quantity)

Profit=Revenue- (Order Quantity*Unit Cost)

Profit%= (((Unit Price-(Discount Applied*Unit Price))-Unit Cost)/Unit Cost) *100 (or)

(Profit/ (Order Quantity*Unit Cost)) *100

Total Days taken to deliver= Delivery Date- Order Date

After calculating the required columns, we can continue to making the tables and charts required.

Sales By Month Analysis

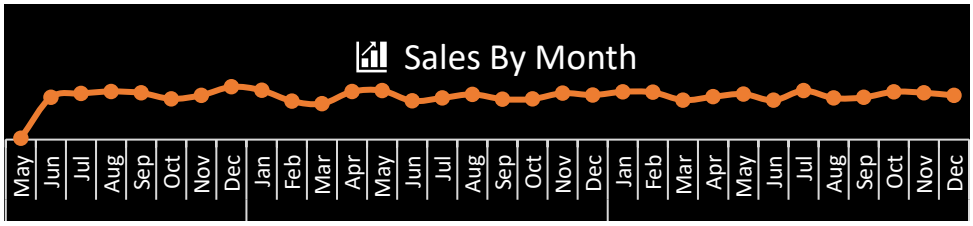
Pivot table1

Table 1 Sales Table

Row Labels	Sum of Order Quantity
2018	
May	39
Jun	1112
Jul	1211
Aug	1266
Sep	1228
Oct	1072
Nov	1167
Dec	1387
2019	
Jan	1297
Feb	1014
Mar	944
Apr	1261
May	1289
Jun	1018
Jul	1096
Aug	1191
Sep	1065
Oct	1068
Nov	1222
Dec	1172
2020	
Jan	1258
Feb	1244
Mar	1039
Apr	1126
May	1199
Jun	1033
Jul	1289
Aug	1092
Sep	1110
Oct	1258
Nov	1233
Dec	1162

Chart1.

Figure 6 salesbymonth



The line chart shows the sales quantity across all months.

The edges are made soft and markers are pointed where exactly the months meet.

In 2018 the months start from may i.e, the given starts from May 2018 itself.

Sparklines Trend Analysis

Channel Trend

Pivot table2.

Table 2 Sparkline sales

Sum of Order Quantity Channels	Column Labels Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Distributor	379	442	398	422	422	561	655	622	578	586	610	612
In-Store	1122	957	784	907	1036	1315	1455	1412	1417	1428	1555	1490
Online	757	608	596	778	765	997	1103	1059	1021	1080	996	1137
Wholesale	297	251	205	280	304	290	383	456	387	304	461	482

Table 3 sparkline profit%

Pivot table3.

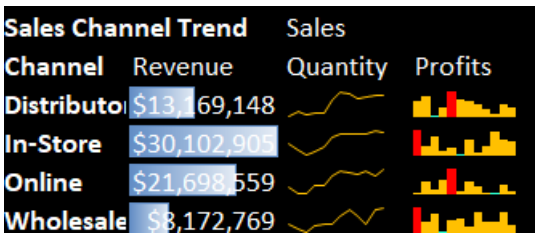
Average of Profit-% Channels	Column Labels Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Distributor	50.37	53.49	41.19	46.53	56.45	51.71	50.78	48.89	46.26	43.01	48.28	46.39
In-Store	52.31	47.11	50.19	45.77	46.71	44.41	49.53	45.42	47.43	51.76	49.17	48.83
Online	45.16	49.88	46.75	50.88	55.82	46.09	49.82	48.23	44.93	44.59	48.58	45.72
Wholesale	57.65	48.28	53.26	40.78	48.76	50.02	45.16	54.56	48.31	47.57	53.97	45.60

Pivot table4. Figure6 is a combined trend of the above 3 pivot tables.

Table 4 sparkline channel

Channels	Sum of Revenue
Distributor	13169147.65
In-Store	30102904.7
Online	21698558.86
Wholesale	8172768.54

Figure 7 Trend1



To make the connection to slicers we have to get the field address directly from the pivot table, so that filtering via slicer can show the results in sparklines as well.

The marker used in profits trend is for maximum and minimum part.

For the fields used if condition is used to display them.

Table 5 warehouse profits

=IF(Warehousetrends!B5="","",Warehousetrends!B5)

Warehouse Trend

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WARE-MKL1006	$142,320.46	$9,448.41	-$20,891.74	-$28,859.75	$81,644.32	$24,104.96	$67,022.01	-$54,094.09	$23,141.53	-$56,962.73	$93,677.09	-$58,650.39
WARE-NBV1002	$171,309.08	-$65,608.11	-$56,603.68	$92,344.29	-$34,184.17	$32,138.36	$76,207.34	-$6,504.73	-$61,909.88	$30,504.36	-$14,129.80	-$2,551.59
WARE-NMK1003	$516,684.37	-$131,656.11	$574.12	$92,326.17	$5,604.25	$141,554.52	$43,226.62	-$65,360.38	$122,358.98	-$242,833.93	$206,658.72	$51,487.66
WARE-PUJ1005	$304,743.03	-$32,085.46	-$36,687.49	-$22,113.32	$34,395.92	$72,998.38	$56,603.14	$24,697.14	-$16,927.55	-$22,580.78	$7,184.31	-$29,820.06
WARE-UHY1004	$226,383.15	$14,381.68	-$45,712.39	$52,385.22	$27,587.89	$15,819.67	$16,573.19	$44,696.04	-$138,955.59	$128,347.34	$49,379.54	-$34,525.17
WARE-XYS1001	$256,874.72	-$76,565.62	-$8,650.67	$8,595.70	$27,548.16	$126,763.10	-$78,476.23	$86,728.65	-$80,406.63	$69,118.17	-$18,043.90	-$17,446.26

Pivot table5.

Table 7 warehouse budget

Sum of Revenue	Column Labels											
SalesTeam	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WARE-MKL1006	$ 451,993.73	$ 466,494.20	$ 460,132.89	$ 359,803.23	$ 546,735.58	$ 711,813.70	$ 936,184.47	$ 787,084.85	$ 791,293.79	$ 739,041.83	$ 858,332.14	$ 704,209.36
WARE-NBV1002	$ 489,931.81	$ 454,902.36	$ 176,032.62	$ 464,999.60	$ 327,224.65	$ 435,137.53	$ 674,059.20	$ 707,994.53	$ 525,041.65	$ 688,721.98	$ 574,237.24	$ 578,249.03
WARE-NMK1003	$ 1,647,354.46	$ 1,247,799.12	$ 1,331,125.01	$ 1,537,072.46	$ 1,676,915.03	$ 2,206,181.53	$ 2,435,194.73	$ 2,129,097.53	$ 2,249,900.70	$ 1,741,322.13	$ 2,465,133.01	$ 2,469,878.45
WARE-PUJ1005	$ 1,140,623.24	$ 879,450.04	$ 764,985.40	$ 758,103.33	$ 946,075.18	$ 1,113,457.93	$ 1,221,795.92	$ 1,251,703.72	$ 1,269,615.50	$ 1,247,122.09	$ 1,286,895.47	$ 1,176,345.63
WARE-UHY1004	$ 911,789.94	$ 760,367.26	$ 690,827.79	$ 854,136.60	$ 820,235.78	$ 942,451.31	$ 1,019,290.93	$ 1,274,968.96	$ 909,668.88	$ 1,125,555.28	$ 1,398,858.66	$ 1,277,534.73
WARE-XYS1001	$ 882,138.08	$ 597,732.29	$ 563,365.48	$ 729,282.94	$ 675,953.79	$ 1,158,683.60	$ 897,011.08	$ 1,003,482.62	$ 1,110,878.26	$ 1,122,729.72	$ 1,080,095.28	$ 1,233,541.02

Table 8 warehouse revenue

Pivot table6. This table is used for warehouse profits trend.

Sum of Budget	Column Labels											
SalesTeam	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WARE-MKL1006	$ 309,673.26	$ 314,725.33	$ 329,255.76	$ 257,785.85	$ 363,073.87	$ 504,047.03	$ 661,395.79	$ 566,390.26	$ 547,457.67	$ 552,168.44	$ 577,781.67	$ 482,309.28
WARE-NBV1002	$ 318,622.72	$ 349,201.39	$ 126,935.32	$ 323,558.01	$ 219,967.23	$ 295,741.75	$ 458,456.08	$ 498,896.14	$ 377,853.13	$ 511,029.10	$ 410,674.16	$ 417,237.54
WARE-NMK1003	$ 1,130,670.09	$ 862,770.86	$ 945,522.63	$ 1,059,143.91	$ 1,193,382.23	$ 1,581,094.21	$ 1,766,880.79	$ 1,526,143.96	$ 1,524,588.15	$ 1,258,843.50	$ 1,775,995.67	$ 1,729,253.45
WARE-PUJ1005	$ 835,880.21	$ 606,792.47	$ 529,015.32	$ 544,246.56	$ 697,822.49	$ 792,206.86	$ 843,941.72	$ 849,152.37	$ 883,991.70	$ 884,079.07	$ 916,668.14	$ 835,938.36
WARE-UHY1004	$ 685,406.78	$ 519,602.42	$ 495,775.34	$ 606,698.94	$ 545,210.22	$ 651,606.09	$ 711,872.52	$ 922,854.52	$ 696,510.02	$ 784,049.08	$ 1,007,972.92	$ 921,174.16
WARE-XYS1001	$ 625,263.36	$ 417,423.20	$ 391,707.06	$ 549,028.82	$ 468,151.51	$ 824,118.22	$ 640,921.93	$ 660,664.82	$ 848,467.10	$ 791,200.39	$ 766,609.85	$ 937,501.86

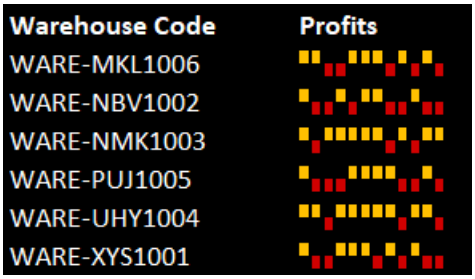
Pivot table7.

The values in the first month Jan are calculated as (Revenue- Budget) and for the later months they are calculated as (previous month profit- current month profit)

The sparkline used here is win/loss as it has profits in negative.

The win part represent profit in positive and loss part shows negative profits.

Figure 8 Trend2



Map Analysis

Pivot table8. (Maps)

Table 8 Map profit sales

Province	Average of Profit-%	Sum of Order Quantity
Alabama	47.7	328
Arizona	44.0	865
Arkansas	45.8	74
California	47.0	7605
Colorado	52.6	1395
Connecticut	46.2	836
District of Columbia	56.8	80
Florida	49.8	2570
Georgia	47.4	636
Hawaii	54.0	96
Idaho	42.8	96
Illinois	49.3	2828
Indiana	46.0	1334
Iowa	49.9	333
Kansas	42.8	456
Kentucky	46.6	210
Louisiana	44.5	454
Maryland	50.3	268
Massachusetts	46.5	514
Michigan	47.8	615
Minnesota	45.2	300
Mississippi	35.8	76
Missouri	47.2	405
Montana	47.5	122
Nebraska	56.5	172

Figure 9 Map

The map used in the project as shown above is created from pivot table5. We must make sure there are no errors in the names of the states as it will give error. After creating the table, we must copy the data as values in some other location as maps function does not take pivot table as input data. After copying the data simply select the data and go to map and put the map.

Nevada	50.0	672
New Hampshire	53.3	132
New Jersey	50.3	677
New Mexico	50.6	179
New York	48.0	1763
North Carolina	50.8	953
North Dakota	42.6	128
Ohio	53.1	617
Oklahoma	50.6	522
Oregon	51.9	474
Pennsylvania	52.8	277
Rhode Island	39.5	88
South Carolina	46.7	339
South Dakota	48.7	96
Tennessee	50.8	612
Texas	48.3	3717
Utah	45.5	354
Virginia	50.2	850
Washington	46.3	780
Wisconsin	52.8	264

Channel Analysis

Pivot table9.

Table 11 channel sales

Row Labels	Sum of Order Quantity
Distributor	17%
In-Store	41%
Online	30%
Wholesale	11%

Pivot table10.

Table 10channel profit

Row Labels	Sum of Profits
Distributor	18.23%
In-Store	41.26%
Online	28.92%
Wholesale	11.60%

Pivot table11.

Table 9 channel revenue

Row Labels	Sum of Revenue
Distributor	13169147.65
In-Store	30102904.7
Online	21698558.86
Wholesale	8172768.54

This chart is combined from the above 3 pivot tables to make it more organized in the dashboard

Figure 10 Channel analysis

The charts used in the above figure are pie charts and treemap.

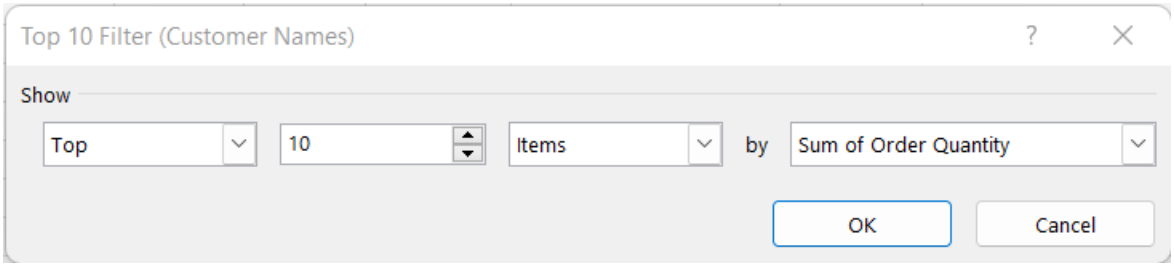
The labels are written on the top as all the charts comprise of same fields.

The percentage in the pie charts are made by custom formatting them to grand total percentage.

Purchases and Sales team Analysis

The next tables are for customer and sales team as they play an important role in the dashboard. For filtering the top 10 of sales team sales and customer purchases we use filter.

Figure 11 Filtering



Pivot table12.

Table 13 Customer purchases

Customer	Sum of Order Quantity
Eminence Corp	785
Qualitest	787
OUR Ltd	796
Apollo Ltd	805
Victory Ltd	812
Ei	818
OHTA'S Corp	819
Apotheca, Ltd	828
Elorac, Corp	880
Medline	970

Pivot table13.

Table 12 Sales Team sales

SalesTeam	Sum of Order Quantity
Joshua Little	1318
Anthony Berry	1337
Adam Hernandez	1366
Jerry Green	1371
Samuel Fowler	1388
Donald Reynolds	1391
Carl Nguyen	1393
George Lewis	1409
Todd Roberts	1474
Shawn Wallace	1476

Chart2. Made from Pivot table9

Figure 12 Sales Team Chart

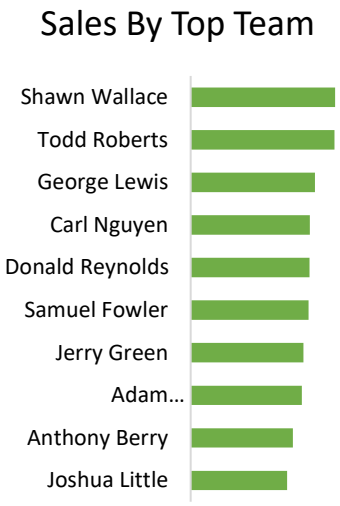


Chart3. Made from Pivot table10

Figure 13 Customer Chart

Note: When taking top performers, we must be aware that after using the slicers and clearing the filters in the slicers, the chart and pivot table it is connected will get refresh

And it will no longer show top 10. So, to avoid this we must avoid the fields which we are using to display the top performers

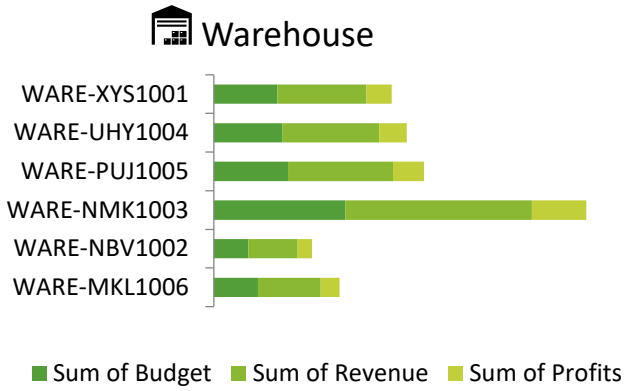
Pivot table14. Warehouse budget, revenue, and profits Analysis

Table 14 Warehouse Budget Revenue Profit

SalesTeam	Sum of Budget	Sum of Revenue	Sum of Profits
WARE-MKL1006	$5,466,064.22	$ 7,813,119.74	$ 2,347,055.53
WARE-NBV1002	$4,308,172.56	$ 6,096,532.17	$ 1,788,359.61
WARE-NMK1003	$16,354,289.42	$ 23,136,974.16	$ 6,782,684.73
WARE-PUJ1005	$9,219,735.26	$ 13,056,173.42	$ 3,836,438.16
WARE-UHY1004	$8,548,733.01	$ 11,985,686.11	$ 3,436,953.10
WARE-XYS1001	$7,921,058.12	$ 11,054,894.14	$ 3,133,836.02

Chart4.

Figure 14 Warehouse chart



This bar chart shows us the overall budget, revenue, and profits according to various warehouses. The warehouses are represented by individual codes given to them.

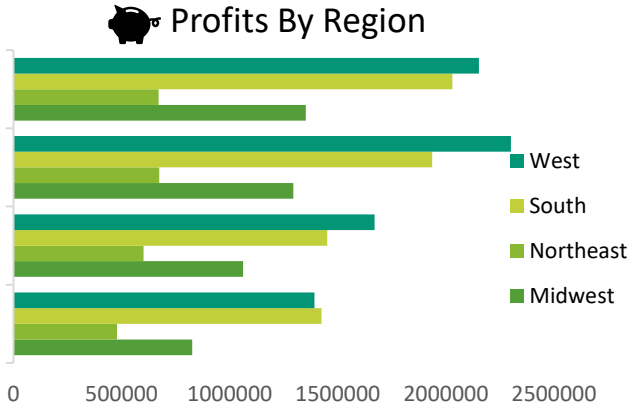
Table 15 Region wise Quarterly trend

Pivot table15. Region wise Distribution of Profits Analysis

Sum of Profits	Column Labels				
Row Labels	Midwest	Northeast	South	West	Grand Total
Qtr1	827108.6015	479393.844	1424571.387	1391728.355	4122802.187
Qtr2	1061775.666	602459.2095	1451758.948	1671386.121	4787379.944
Qtr4	1294866.355	674223.8475	1937285.738	2300940.465	6207316.405
Qtr3	1352791.339	671395.1075	2030459.254	2153182.92	6207828.619

Chart5.

Figure 15 Profits by region Chart



Quarterly Analysis of Revenue and Budget

*The figures used are in Dollars.

Table 16 Quarterly wise revenue budget

Pivot table16.

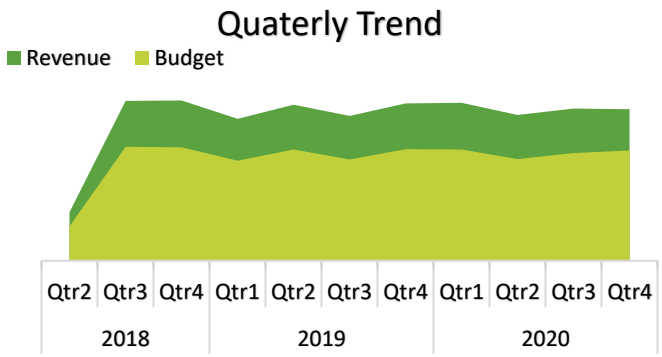
This table show the quarterly trends in various fields

Row Labels	Revenue	Budget
2018		
Qtr2	2249845.93	1602162.357
Qtr3	7415845.42	5286165.732
Qtr4	7436941.71	5267050.699
2019		
Qtr1	6589445.143	4637135.057
Qtr2	7244569.803	5158806.437
Qtr3	6718858.825	4705040.16
Qtr4	7301421.815	5172737.479
2020		
Qtr1	7327600.558	5157108.456
Qtr2	6769848.003	4715914.997
Qtr3	7059563.038	4995232.771
Qtr4	7029439.503	5120698.445

Chart6.

Area chart for quarterly trend

Figure 16 Quarterly trend Chart



The chart shows the area for revenue and area for budget.

In the year 2018 the sales start form month may so the first quarter of the year 2018 is missing.

Product Analysis

Chart 7.

Figure 17 Product Chart

Pivot table17.

Table 17 Top Products

Row Labels	Sum of Order Quantity
2018	
Floor Lamps	144
Mirrors	174
Photo Frames	211
Stemware	175
Wine Storage	167
2019	
Accessories	362
Bathroom Furniture	272
Ornaments	296
Outdoor Decor	273
Table Lamps	310
2020	
Candles	314
Computers	273
Cookware	243
Floral	332

In this chart the top 5 products of every year are displayed using filter finction.

Warehouse Sales Analysis

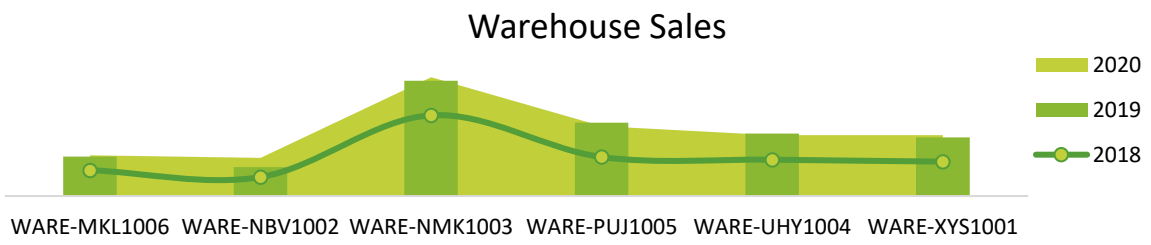
This table has warehouse codes and their sales in the particular year.

Pivot table18.

Warehouse	2018	2019	2020
WARE-MKL1006	931	1418	1467
WARE-NBV1002	684	1039	1378
WARE-NMK1003	2911	4159	4281
WARE-PUJ1005	1405	2647	2520
WARE-UHY1004	1310	2256	2199
WARE-XYS1001	1241	2118	2198

Figure 18 Warehouse Sales Chart

Chart8.



The combo chart used in this has bar type for year 2019, line type for year 2018 and stacked area type for year 2020. Using this comparison can be made with each other.

It is important to use a normal table for a combinational chart because when using pivot table and when slicers are applied for filtering the rows which don't have any data in that condition may display nothing and that may change the type of chart.

After careful analysis and research, we may conclude that using a normal table will be best for combinational charts. But there may be other advanced solutions for this instead of using normal tables. So, we cannot say only a single solution exist for the issue.

Figure 19 Slicers

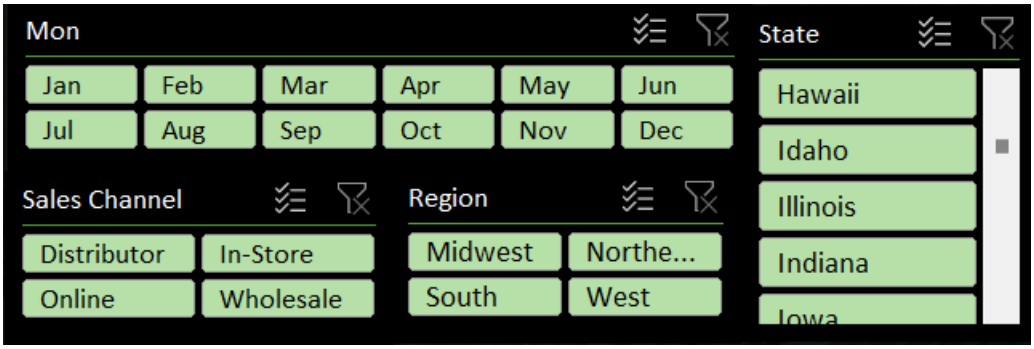
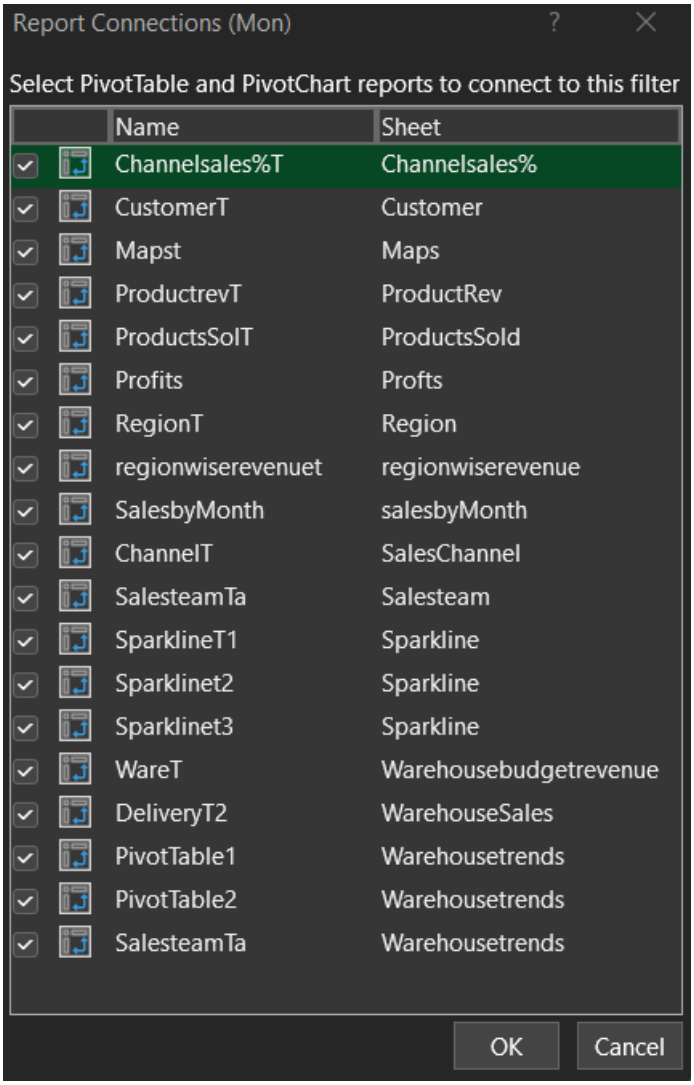


Figure 12.

Figure 20 Slicer Connections



There are 4 slicers present in this project. As shown in figure11, the connections are applied for all of the slicers present.

Final Dashboard

We put all the charts in the dashboard in an organized way.

The final sheet of dashboard looks like this. Background image is added to make it more look like business related.

Figure 21 Final Dashboard

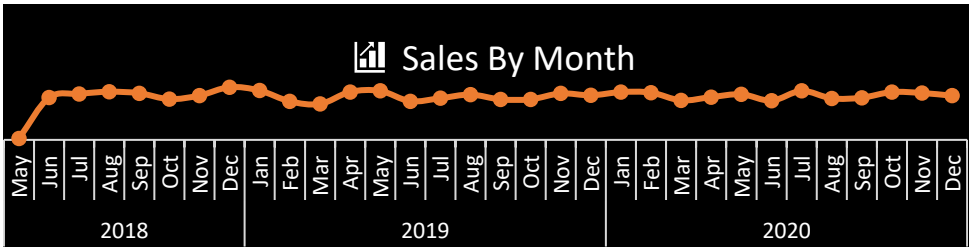
A total of 12 charts are used in the dashboard.

3 sparkline trends are shown in the table format.

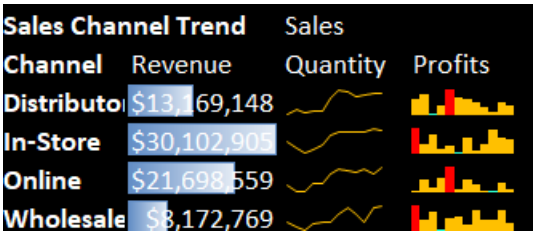
Total 4 slicers are used. Month, Sales Channel, State and Region. The whole will respond to the slicers once they are activated.

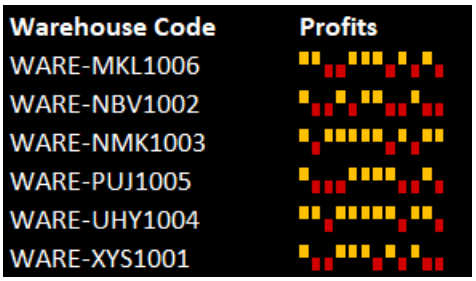
6.List of all analysis with result

1. Sales by month



2. Sparkline analysis



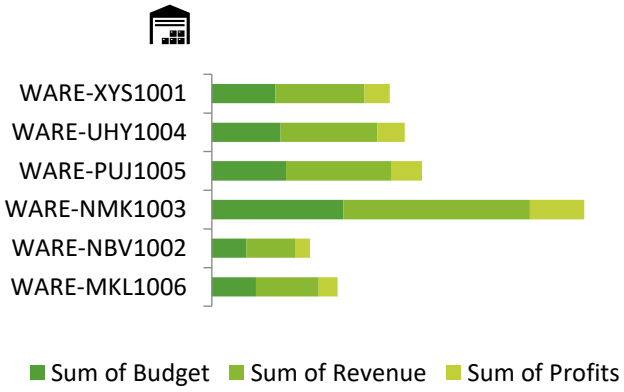


3. Map analysis

4. Channel analysis

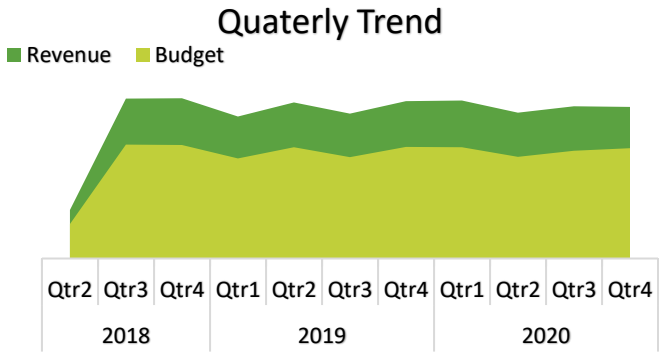
5. Purchases and sales team analysis

6. Warehouse budget, revenue and profits Analysis



7. Region wise distribution of profits analysis

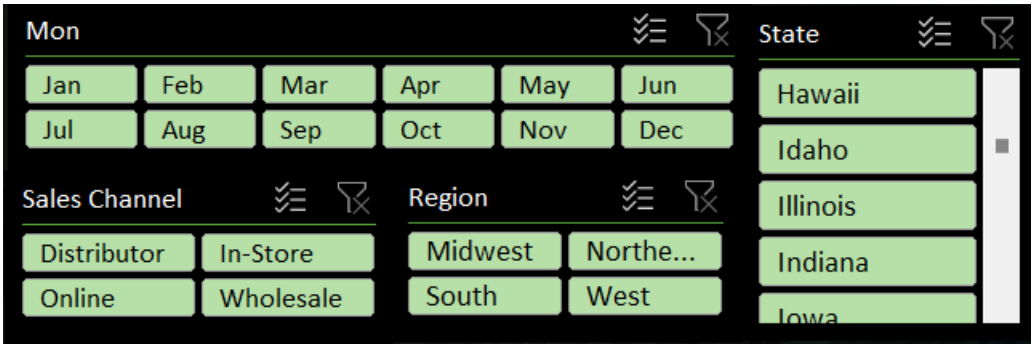
8. Quarterly Analysis of Revenue and Budget



9. Product Analysis

10. Warehouse sales analysis

11. Slicer's analysis



7.References

[1] Cindy, "Microsoft Answers," Microsft, [Online]. Available: https://answers.microsoft.com/en-us/msoffice/forum/all/pivot-chart-issue-custom-combination-type-changing/5417b4ac-1e16-41a9-a0da-c0138ab6dbc6. [Accessed 30 11 2021].

[2] L. Gharani, "4 Hidden Excel Dashboard Design Tips for Beautiful Reports," 30 11 2021. [Online]. Available: https://www.youtube.com/watch?v=p2bFHuAR8Z0&t=526s.

[3] T. O. Lab, "How to Create Impressive Interactive Excel Dashboard | Ultimate Excel Dashboard," The Office Lab, [Online]. Available: https://www.youtube.com/watch?v=cKkXtyjleX4&t=1820s. [Accessed 30 11 2021].

[4] M. Treacy, "How to build Interactive Excel Dashboards that Update with ONE CLICK!," MyOnlineTrainingHub, [Online]. Available: https://www.youtube.com/watch?v=K74_FNnlIF8&t=1087s. [Accessed 15 11 2021].

[5] Byju's, "Profit Formula," Byju's, [Online]. Available: https://byjus.com/profit-formula/. [Accessed 16 11 2021].

[6] S. Factor, "How to Calculate Total Revenue," Scale Factor, [Online]. Available: https://scalefactor.com/ask-the-experts/how-to-calculate-total-revenue/. [Accessed 15 11 2021].

[7] R. D. Campos, "cargo Photos," Pexels, [Online]. Available: https://www.pexels.com/photo/harbor-located-near-rippling-sea-water-4256976/. [Accessed 21 11 2021].

[8] M. Traecy, "Pivot Charts - Chart type changes based on slicer selection," MyOnlineTrainingHub, [Online]. Available: https://www.myonlinetraininghub.com/excel-forum/dashboards-charts/pivot-charts-chart-type-changes-based-on-slicer-selection. [Accessed 16 11 2021].

[9] U. k. Chatterjee, "US Regional Sales Data," data.world, [Online]. Available: https://data.world/dataman-udit/us-regional-sales-data. [Accessed 10 11 2021].

[10] E. T. Community, "Use slicers to filter data," Microsoft, [Online]. Available: https://support.microsoft.com/en-us/office/use-slicers-to-filter-data-249f966b-a9d5-4b0f-b31a-12651785d29d. [Accessed 16 11 2021].

[11] T. Mynda, "EXCEL," myonlinetraininghub, [Online]. Available: https://www.myonlinetraininghub.com/. [Accessed 16 11 2021].

[12] "Basic Excel Formulas," Corporate Finance Institute, [Online]. Available: https://corporatefinanceinstitute.com/resources/excel/study/basic-excel-formulas-beginners/. [Accessed 21 11 2021].

[13] M. Alexander, "10 Excel Chart Types and When to Use Them," Dummies, [Online]. Available: https://www.dummies.com/software/microsoft-office/excel/10-excel-chart-types-and-when-to-use-them/. [Accessed 21 11 2021].

8.Bibliography

[1] Cindy, "Microsoft Answers," Microsft, [Online]. Available: https://answers.microsoft.com/en-us/msoffice/forum/all/pivot-chart-issue-custom-combination-type-changing/5417b4ac-1e16-41a9-a0da-c0138ab6dbc6. [Accessed 30 11 2021].

[2] L. Gharani, "4 Hidden Excel Dashboard Design Tips for Beautiful Reports," 30 11 2021. [Online]. Available: https://www.youtube.com/watch?v=p2bFHuAR8Z0&t=526s.

[3] T. O. Lab, "How to Create Impressive Interactive Excel Dashboard | Ultimate Excel Dashboard," The Office Lab, [Online]. Available: https://www.youtube.com/watch?v=cKkXtyjleX4&t=1820s. [Accessed 30 11 2021].

[4] M. Treacy, "How to build Interactive Excel Dashboards that Update with ONE CLICK!," MyOnlineTrainingHub, [Online]. Available: https://www.youtube.com/watch?v=K74_FNnlIF8&t=1087s. [Accessed 15 11 2021].

[5] Byju's, "Profit Formula," Byju's, [Online]. Available: https://byjus.com/profit-formula/. [Accessed 16 11 2021].

[6] S. Factor, "How to Calculate Total Revenue," Scale Factor, [Online]. Available: https://scalefactor.com/ask-the-experts/how-to-calculate-total-revenue/. [Accessed 15 11 2021].

[7] R. D. Campos, "cargo Photos," Pexels, [Online]. Available: https://www.pexels.com/photo/harbor-located-near-rippling-sea-water-4256976/. [Accessed 21 11 2021].

[8] M. Traecy, "Pivot Charts - Chart type changes based on slicer selection," MyOnlineTrainingHub, [Online]. Available: https://www.myonlinetraininghub.com/excel-forum/dashboards-charts/pivot-charts-chart-type-changes-based-on-slicer-selection. [Accessed 16 11 2021].

[9] U. k. Chatterjee, "US Regional Sales Data," data.world, [Online]. Available: https://data.world/dataman-udit/us-regional-sales-data. [Accessed 10 11 2021].

[10] E. T. Community, "Use slicers to filter data," Microsoft, [Online]. Available: https://support.microsoft.com/en-us/office/use-slicers-to-filter-data-249f966b-a9d5-4b0f-b31a-12651785d29d. [Accessed 16 11 2021].

[11] T. Mynda, "EXCEL," myonlinetraininghub, [Online]. Available: https://www.myonlinetraininghub.com/. [Accessed 16 11 2021].

[12] "Basic Excel Formulas," Corporate Finance Institute, [Online]. Available: https://corporatefinanceinstitute.com/resources/excel/study/basic-excel-formulas-beginners/. [Accessed 21 11 2021].

[13] M. Alexander, "10 Excel Chart Types and When to Use Them," Dummies, [Online]. Available: https://www.dummies.com/software/microsoft-office/excel/10-excel-chart-types-and-when-to-use-them/. [Accessed 21 11 2021].