DATA SCIENCE PROJECT REPORT

(Project Semester August-December 2021)

ORDERS OF A COMPANY WORLDWIDE

Submitted by

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Registration No: 11909575

Programme: Computer Science and Engineering (Hons.)

Section: KM036

Course Code: INT217

Under the Guidance of

ASHU (23631)

Discipline of CSE/IT

Lovely School of Computer Science and Engineering

Lovely Professional University, Phagwara

CERTIFICATE

This is to certify that **K AKANKSHA** bearing Registration no. **11909575** has completed **INT217** project titled, **"ORDERS OF A COMPANY WORLDWIDE"** 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.

Signature and Name of the Supervisor

Designation of the Supervisor

School of Computer Science and Engineering

Lovely Professional University

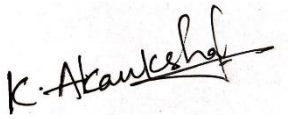
Phagwara, Punjab.

Date: 10/12/2021

DECLARATION

I, K AKANKSHA, student of Lovely Professional University 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: 10/12/2021



Signature

Name of the Student: K AKANKSHA

Registration No. 11909575

ACKNOWLEDGEMENT

A project work is a combination of views, ideas, suggestions and contribution of many people. Thus, one of the pleasant parts of writing the report is to thank those who have contributed towards its fulfilment. I consider it as great privilege to have esteemed Lecturer Ms. Ashu as my project guide. I take this opportunity to express my sincere gratitude to her through constant advice and constructive criticism nourished my interest in the subject and provided a free and pleasant atmosphere to work against all odd situations. I avail this opportunity to extend my heart full thanks and deep respect to faculty member for their able guidance during this project. My gratitude to all those, who responded to my questionnaire in a well-defined manner and helped me acquiring knowledge. I would like to communicate a deep sense of gratitude to all these people without whom my project would not have been such a great learning experience.

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INTRODUCTION

In business, literally, any function in any industry can benefit from those with strong Excel knowledge. Excel is a powerful tool that has become entrenched in business processes worldwide—whether for analyzing stocks or issuers, budgeting, or organizing client sales lists.

Using Excel for business has almost no limits for applications. Here are some examples:

- When planning a team outing to a baseball game, you can use Excel to track the RSVP list and costs.
- Excel creates revenue growth models for new products based on new customer forecasts.
- When planning an editorial calendar for a website, you can list out dates and topics in a spreadsheet.
- When creating a budget for a small product, you can list expense categories in a spreadsheet, update it monthly and create a chart to show how close the product is to budget across each category.
- You can calculate customer discounts based on monthly purchase volume by product.
- Users can summarize customer revenue by product to find areas where to build a stronger customer relationship.
- Use complex calculation methods, like Sharpe ratios.

Excel is not going anywhere, and businesses will continue to use Excel as a primary tool for diverse functions and applications ranging from IT projects to company picnics.

A working knowledge of Excel is vital for most office-based professionals today, and stronger Excel skills can open the door to promotion and leadership opportunities. Excel is a powerful tool but cannot function alone. It takes a savvy computer user to take advantage of everything Excel has to offer to provide the best results for their company.

• Dataset columns

1. Order ID	13. Product ID
2. Order Date	14. Category
3. Ship Date	15. Sub-Category
4. Ship Mode	16. Product Name
5. Customer	17. Sales
6. Customer Name	18. Quantity
7. Segment	19. Discount
8. City	20. Profit
9. State	21. Shipping Cost
10. Country	22. Order Priority
11. Region	
12. Market	

SCOPE OF ANALYSIS

Microsoft Excel is a computer spreadsheet programme that can be used to store and analyze large quantities of data. Excel has many functions to sort and analyze the data that range from basic mathematical functions to complex statistical analyses. It is one of the most widely used programmes of its kind across the globe and has become the industry standard.

Being familiar with Excel is extremely valuable to employers and can increase your chances of getting hired by showing employers that you have great analytical skills. Being proficient in Excel can make you a valuable asset to the company and is discussed in later points. For this reason, many employers specifically request Excel knowledge as part of the job specification.

Organizing and manipulating data manually can be very time consuming and mundane. Excel not only makes this process incredibly fast, but also reduces room for certain human errors such as miscounting or miscalculating. It allows you to analyze large quantities of data in a matter of seconds, and once you have mastered all its advanced features and properties, it can allow you to carry out extremely complicated forms of statistical analyses. Once a user has become fluent in the nuances of Excel, such as keyboard shortcuts, productivity can be increased exponentially. This makes the training of Excel to employees of the utmost importance to any business owner.

The ability to conduct statistical analysis in Excel is incredibly useful for utilizing data effectively. It is one thing to store and manage huge amounts of data, but it is another to discover the relationships between them and draw workable conclusions from such analyses.

Excel is collaborative in its design as any spreadsheet can be shared, edited, and used by other users of your choice. This enables free movement of data and information for people and businesses, no matter their geographical location. As part of the Microsoft Office software package, outputs from Excel can be easily put into different software such as Microsoft Word or PowerPoint to aid in the delivery of written pieces of work and presentations. While it may seem intimidating at first, once you have mastered the basics of Microsoft Excel it can make your life a lot easier. It can boost your employability and career prospects whilst also being a useful tool to analyze data in everyday life, such as when managing personal finances. Excel is an easily accessible software that is a valuable tool in all aspects of life and should be considered critical for personal development.

Organizing and utilizing sales data effectively is key to continuing to scale your company and drive more revenue. Especially when it comes to your team's sales activities. More than likely, as a sales leader, you are inundated with a tremendous amount of sales data each day — from the number of prospecting emails your team sent out last week to how many deals have closed so far this month, and everything in between. Utilizing spreadsheets in Microsoft Excel is still one way to organize your sales data, visualize the data, track activity, and get a birds-eye view of your team's progress toward sales goals, especially if you don't currently have sales software to track it for you. Sales spreadsheets can also help you evaluate how your sales process is performing, where your sales funnel may have bottlenecks, and more. Using Excel spreadsheets is one of the best ways to start organizing your sales data more effectively. But, as your team and company grow and become more advanced, you'll need tracking software that will automate the process.

There are a ton of different things you and your sales team can track through Excel spreadsheets. But overwhelming yourself and your team with all kinds of them will be counterproductive.

Existing System

Before existence of Data Science, analyzing data used to be hectic task and existing system didn't used to analyses the data with perfection. Without existence of current cutting-edge technology of data science, we can get actionable insights in the dataset of the Indian Trade. Following are the benefits which weren't present in the existing system of data analyzing:

1. Making Better Decision with The Help of Data

2. Directing actions based on trends- which later defines the goals required for profit.

3. Doing challenging stuffs with the help of prediction which is done by data.

4. Identifying various opportunities to increase the profit,

5. Making decision with Quantifiable, data driven evidence so that loss doesn't happens.

6. Testing the decisions taken by the data and watching and analyzing the trend.

Source of The Dataset

• The dataset is taken from the references given by my teacher and https://www.springboard.com/blog/data-science/free-public-data-sets-data-science-project/

ANALYSIS OF DATASET

1. Yearly and Quarterly sales report

a) Introduction: The analysis shows the year wise sales data and quarter wise sales data.

b) Specific Requirements/Functions and Formulas:

i)Pivot table of Orders Data

ii)Clustered column chart of Orders Data

iii) Filters for all the quarters between 2012 to 2015

c) Analysis Results:

- We see that in the fourth quarter of every year the sales were high compared to the rest quarters in the same year
- We also notice that each quarter in the previous year has better sales compared to the same quarter in the previous year

	A	B	C
1	sum of sales quaterly		
2			
3	Row Labels	Sum of Sales	
4	2012	2259450.896	
5	Qtr1	338362.8142	
6	Qtr2	480132.8355	
7	Qtr3	611085.9168	
8	Qtr4	829869.329	
9	2013	2677438.694	
10	Qtr1	399367.7084	
11	Qtr2	625592.8592	
12	Qtr3	737768.8931	
13	Qtr4	914709.2337	
14	2014	3405746.449	
15	Qtr1	565019.5879	
16	Qtr2	834839.4934	
17	Qtr3	933036.987	
18	Qtr4	1072850.381	
19	2015	4299865.871	
20	Qtr1	689206.6838	
21	Qtr2	932986.9705	
22	Qtr3	1196482.867	
23	Qtr4	1481189.35	
24	Grand Total	12642501.91	
25			


Sum of Sales
SUM OF SALES QUATERLY
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Qtr1 Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr3 Qtr4 Qtr1 Qtr2 Qtr3 Qtr4
2012
2013
2014
2015
Total
Years
Quarters
Order Date

2. Sales per region basis

a) Introduction: The analysis shows the data of sales highest and lowest in all the regions from where there have been purchases.

b) Specific Requirements/Functions and Formulas:

i)Pivot table of Orders Data

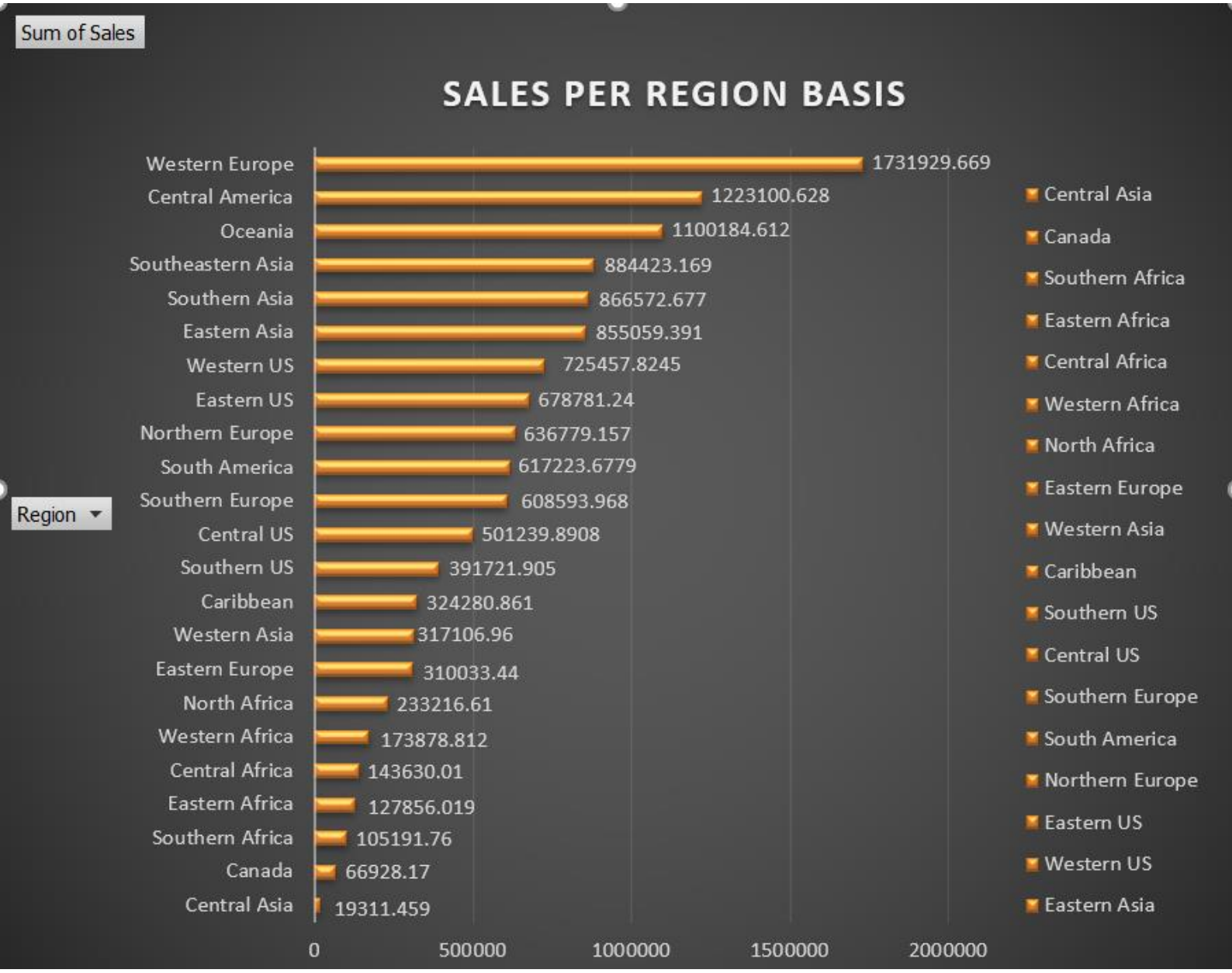
ii)Clustered Bar chart of Orders Data

iii) Sort from smallest to largest

c) Analysis Results:

- We see that sales are high in the Western Europe followed by Central America
- The sales are the lowest in Central Asia

Row Labels	Sum of Sales
Central Asia	19311.459
Canada	66928.17
Southern Africa	105191.76
Eastern Africa	127856.019
Central Africa	143630.01
Western Africa	173878.812
North Africa	233216.61
Eastern Europe	310033.44
Western Asia	317106.96
Caribbean	324280.861
Southern US	391721.905
Central US	501239.8908
Southern Europe	608593.968
South America	617223.6779
Northern Europe	636779.157
Eastern US	678781.24
Western US	725457.8245
Eastern Asia	855059.391
Southern Asia	866572.677
Southeastern Asia	884423.169
Oceania	1100184.612
Central America	1223100.628
Western Europe	1731929.669
Grand Total	**12642501.91**



3. Profit/Loss in each category and sub-category

a) Introduction: The analysis shows the sum of profit/loss in each category and further in each sub-category.

b) Specific Requirements/Functions and Formulas:

i)Pivot table of Orders Data

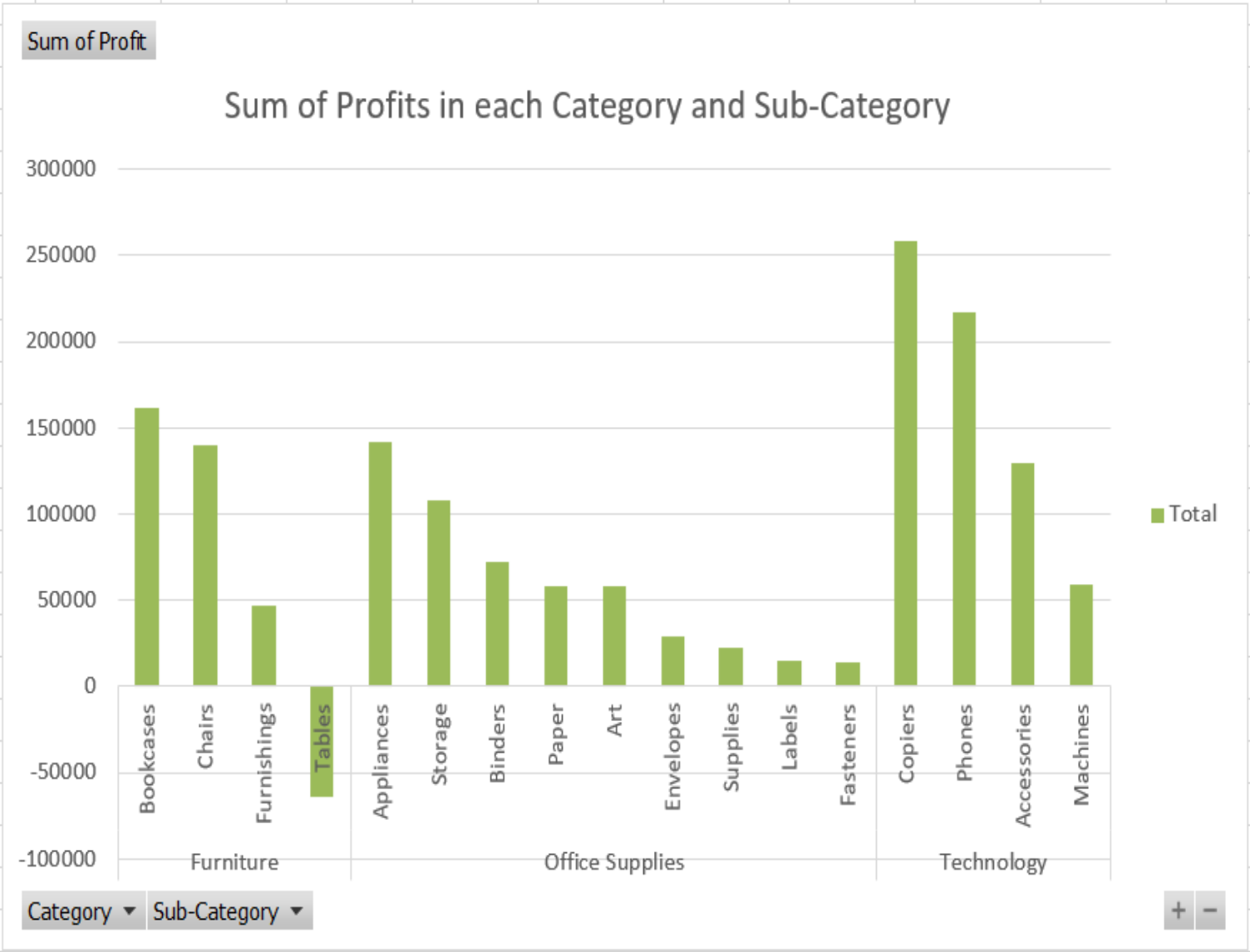
ii)Clustered column chart of Orders Data

iii) sort from smallest to largest

c) Analysis Results:

- We see that the profits are highest in the technology category and in those max profits from copiers sub-category
- Furniture category has the lowest profits and among those bookcases yield the max profits
- Among all the sub-categories only tables have incurred a loss and rest all are in profits.

3	Row Labels	Sum of Profit
4	**Furniture**	**285082.7302**
5	Bookcases	161924.4195
6	Chairs	140396.2675
7	Furnishings	46845.4319
8	Tables	-64083.3887
9	**Office Supplies**	**518595.8279**
10	Appliances	141562.5877
11	Storage	108416.6806
12	Binders	72433.1516
13	Paper	58111.6535
14	Art	57829.8593
15	Envelopes	28849.4873
16	Supplies	22559.1953
17	Labels	14988.9237
18	Fasteners	13844.2889
19	**Technology**	**663778.7332**
20	Copiers	258567.5482
21	Phones	216717.0058
22	Accessories	129626.3062
23	Machines	58867.873
24	**Grand Total**	**1467457.291**


Sum of Profit
Sum of Profits in each Category and Sub-Category
300000
250000
200000
150000
100000
50000
0
-50000
-100000
Bookcases
Chairs
Furnishings
Tables
Appliances
Storage
Binders
Paper
Art
Envelopes
Supplies
Labels
Fasteners
Copiers
Phones
Accessories
Machines
Furniture
Office Supplies
Technology
Total
Category
Sub-Category

4. TYPES OF SHIP MODE OPTED FOR EACH CATEGORY

a) Introduction: The analysis shows the types of shipping mode opted for each category available.

b) Specific Requirements/Functions and Formulas:

i)Pivot table of Orders Data

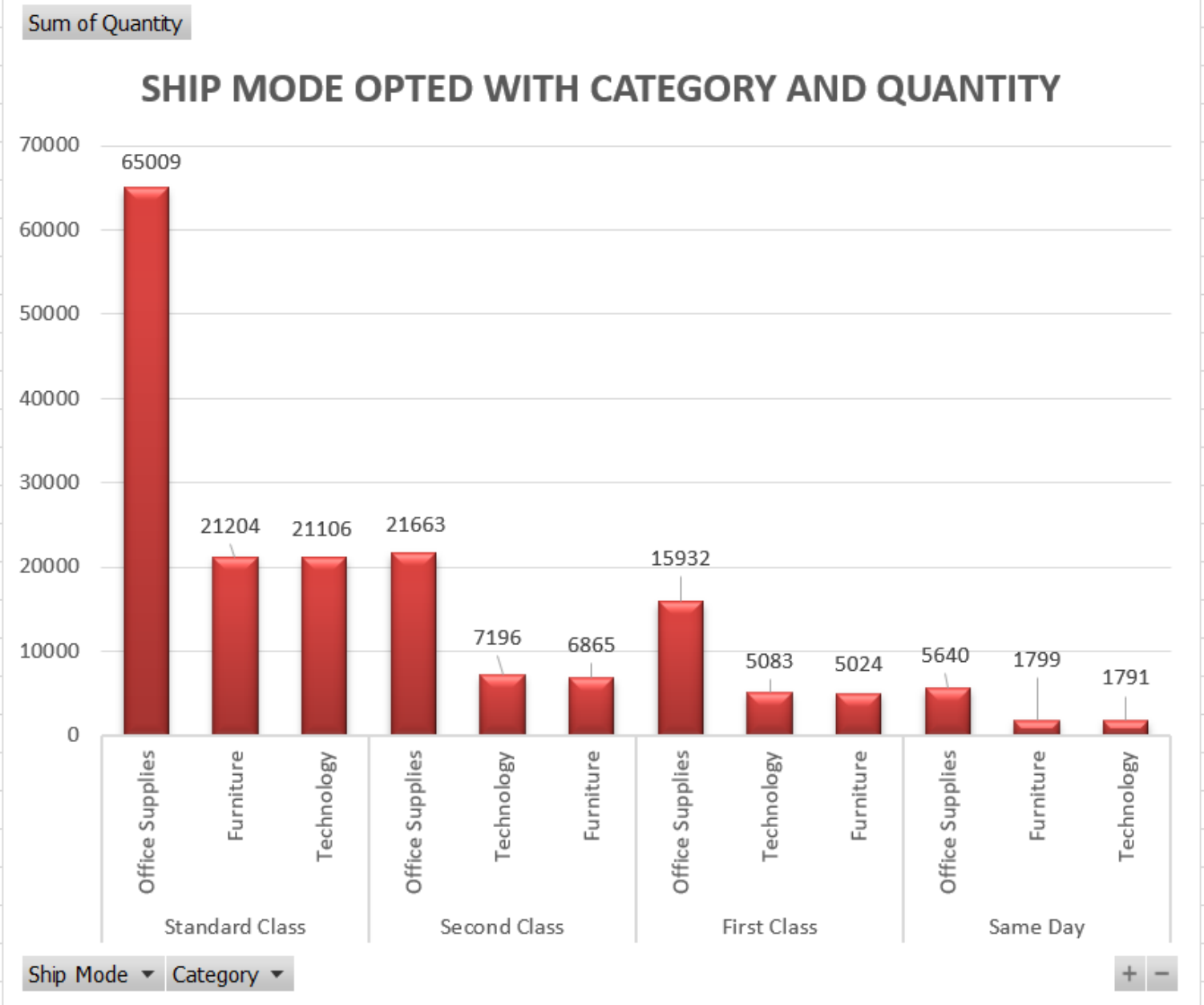
ii)Clustered column chart of Orders Data

iii)Sort from largest to smallest

c) Analysis Results:

- We see that most of the customers have opted for standard class ship mode for each category.
- We also notice that the least opted is same day delivery which means very few people have ordered during an urgency.
- Significant drop compared to standard class compared to others could be because of an additional fee.

Row Labels	Sum of Quantity
Standard Class	**107319**
Office Supplies	65009
Furniture	21204
Technology	21106
Second Class	**35724**
Office Supplies	21663
Technology	7196
Furniture	6865
First Class	**26039**
Office Supplies	15932
Technology	5083
Furniture	5024
Same Day	**9230**
Office Supplies	5640
Furniture	1799
Technology	1791


Sum of Quantity
SHIP MODE OPTED WITH CATEGORY AND QUANTITY
70000
60000
50000
40000
30000
20000
10000
0
65009
21204
21106
21663
7196
6865
15932
5083
5024
5640
1799
1791
Office Supplies
Furniture
Technology
Office Supplies
Technology
Furniture
Office Supplies
Technology
Furniture
Office Supplies
Furniture
Technology
Standard Class
Second Class
First Class
Same Day
Ship Mode
Category

5. Top 10 Countries with the highest quantity of items

a) Introduction: The analysis shows the top 10 countries where the total quantity of items is highest

b) Specific Requirements/Functions and Formulas:

i)Pivot table of Orders Data

ii)Clustered line chart of Orders Data

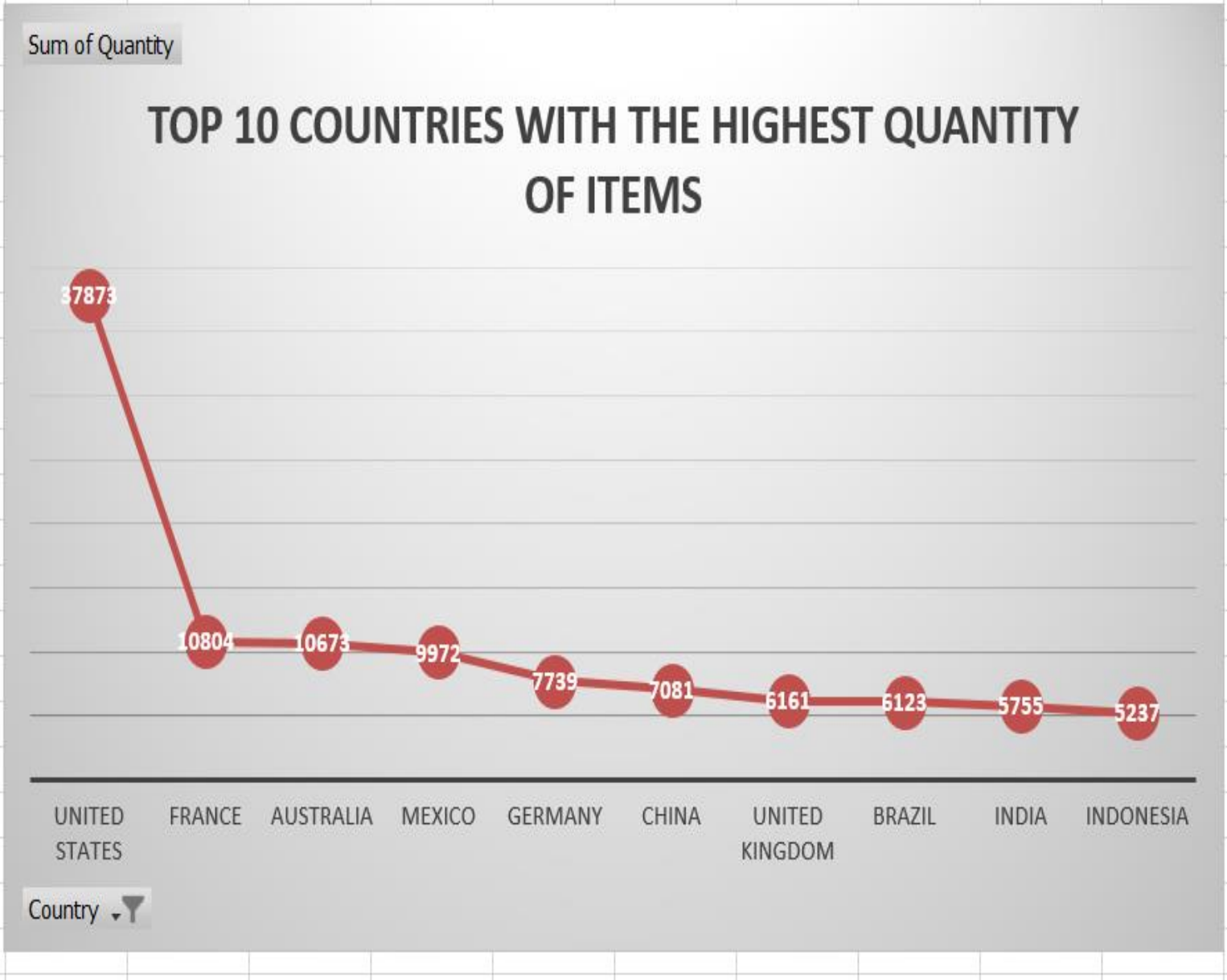
iii) sort from largest to smallest

iv) Filter value by top 10

c) Analysis Results:

- We see that a huge number of items have been shipped to the United States of America.
- We see that after USA they have decreased and the rest follow a relatively straight line.

3	Row Labels	Sum of Quantity
4	United States	37873
5	France	10804
6	Australia	10673
7	Mexico	9972
8	Germany	7739
9	China	7081
10	United Kingdom	6161
11	Brazil	6123
12	India	5755
13	Indonesia	5237
14	**Grand Total**	**107418**


Sum of Quantity
TOP 10 COUNTRIES WITH THE HIGHEST QUANTITY OF ITEMS
37873
10804
10673
9972
7739
7081
6161
6123
5755
5237
UNITED STATES
FRANCE
AUSTRALIA
MEXICO
GERMANY
CHINA
UNITED KINGDOM
BRAZIL
INDIA
INDONESIA
Country

6. Percentage of sales done in each state in India

a) Introduction: The analysis shows the percentage of sales done in each state from total sales in India.

b) Specific Requirements/Functions and Formulas:

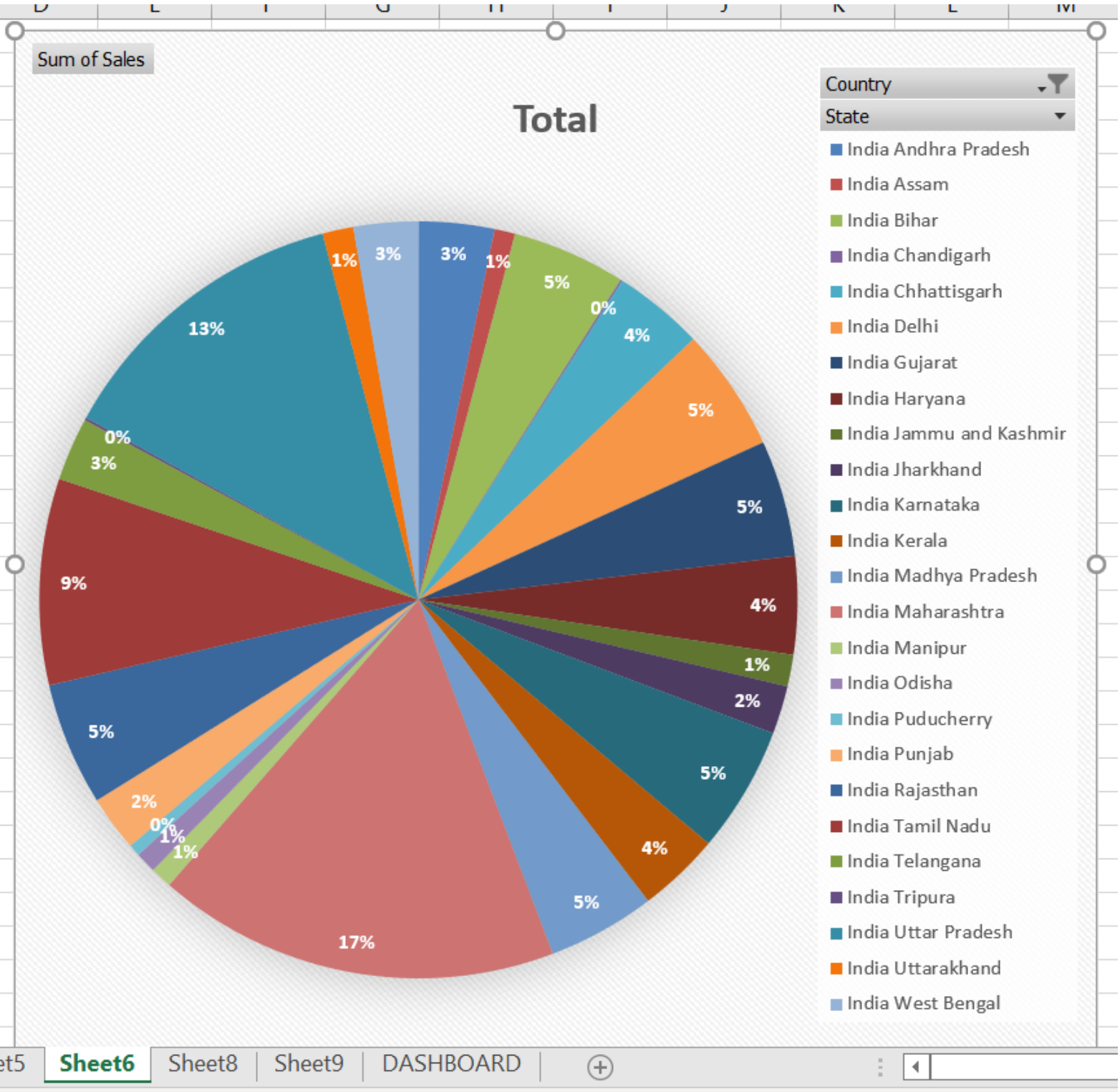
i)Pivot table of Orders Data

ii)Pie Chart of Orders Data

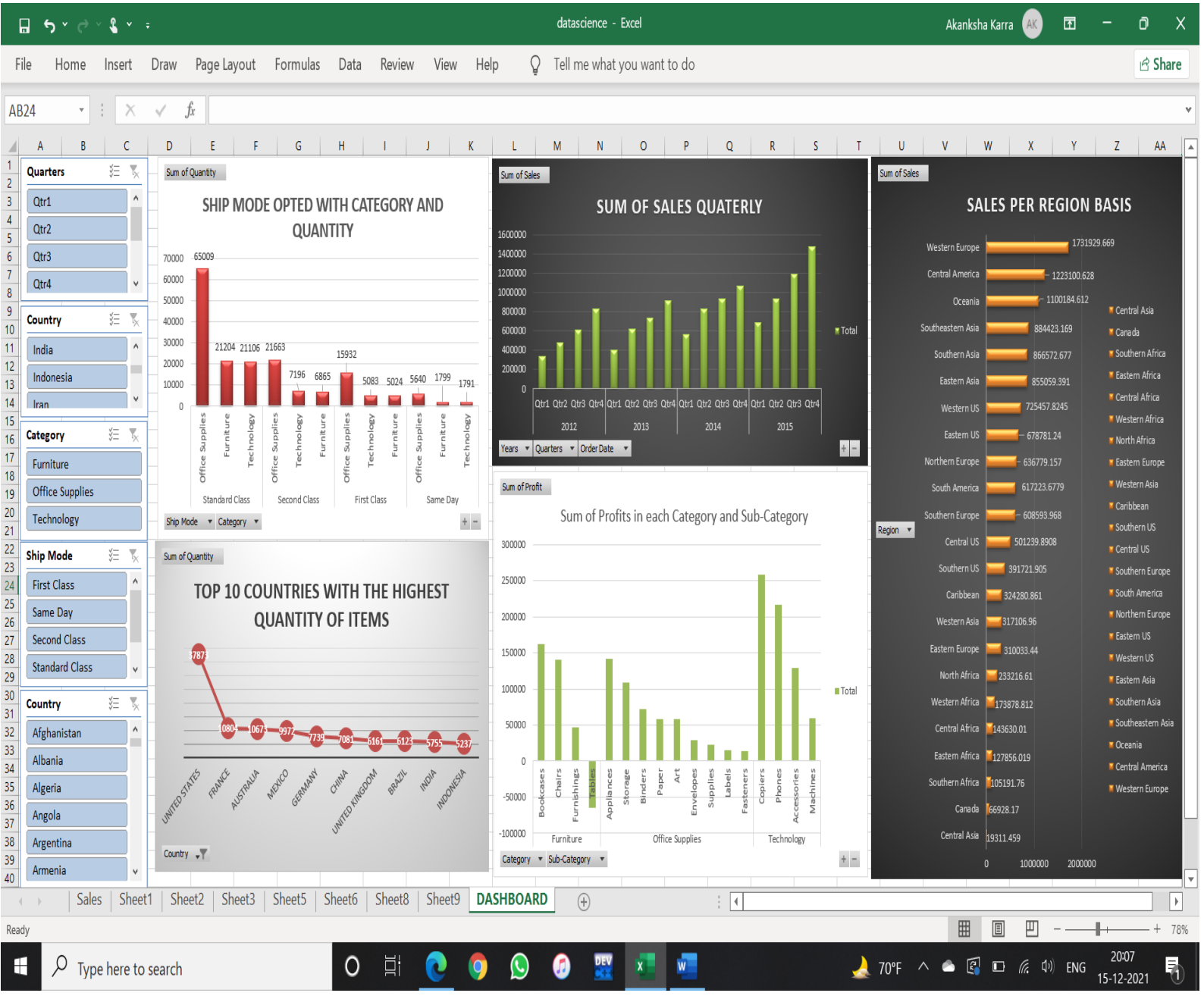
c) Analysis Results:

- We see that the highest sales done in India is in the State Maharashtra followed by Uttar Pradesh
- Rest all the states sales percentage is in single digits.

Row Labels	Sum of Sales
India	**100.00%**
Andhra Pradesh	3.23%
Assam	0.88%
Bihar	4.85%
Chandigarh	0.08%
Chhattisgarh	3.87%
Delhi	5.26%
Gujarat	4.97%
Haryana	4.18%
Jammu and Kashmir	1.35%
Jharkhand	2.06%
Karnataka	5.39%
Kerala	3.51%
Madhya Pradesh	4.59%
Maharashtra	17.19%
Manipur	0.92%
Odisha	0.90%
Puducherry	0.50%
Punjab	2.38%
Rajasthan	5.26%
Tamil Nadu	8.81%
Telangana	2.70%
Tripura	0.11%
Uttar Pradesh	12.94%
Uttarakhand	1.32%
West Bengal	2.75%
Grand Total	**100.00%**


Sum of Sales
Total
Country
State
India Andhra Pradesh
India Assam
India Bihar
India Chandigarh
India Chhattisgarh
India Delhi
India Gujarat
India Haryana
India Jammu and Kashmir
India Jharkhand
India Karnataka
India Kerala
India Madhya Pradesh
India Maharashtra
India Manipur
India Odisha
India Puducherry
India Punjab
India Rajasthan
India Tamil Nadu
India Telangana
India Tripura
India Uttar Pradesh
India Uttarakhand
India West Bengal
3%
1%
5%
0%
4%
5%
5%
4%
1%
2%
5%
4%
5%
17%
1%
1%
0%
2%
5%
9%
3%
0%
13%
1%
3%
Sheet5
Sheet6
Sheet8
Sheet9
DASHBOARD

DASHBOARD


datascience - Excel
Akanksha Karra
File Home Insert Draw Page Layout Formulas Data Review View Help Tell me what you want to do
Share
AB24
Quarters
Qtr1
Qtr2
Qtr3
Qtr4
Country
India
Indonesia
Iran
Category
Furniture
Office Supplies
Technology
Ship Mode
First Class
Same Day
Second Class
Standard Class
Country
Afghanistan
Albania
Algeria
Angola
Argentina
Armenia
Sum of Quantity
SHIP MODE OPTED WITH CATEGORY AND QUANTITY
65009
21204
21106
21663
7196
6865
15932
5083
5024
5640
1799
1791
Office Supplies
Furniture
Technology
Standard Class
Second Class
First Class
Same Day
Ship Mode
Category
Sum of Sales
SUM OF SALES QUATERLY
Total
2012
2013
2014
2015
Years
Quarters
Order Date
Sum of Sales
SALES PER REGION BASIS
Western Europe 1731929.669
Central America 1223100.628
Oceania 1100184.612
Southeastern Asia 884423.169
Southern Asia 866572.677
Eastern Asia 855059.391
Western US 725457.8245
Eastern US 678781.24
Northern Europe 636779.157
South America 617223.6779
Southern Europe 608593.968
Central US 501239.8908
Southern US 391721.905
Caribbean 324280.861
Western Asia 317106.96
Eastern Europe 310033.44
North Africa 233216.61
Western Africa 173878.812
Central Africa 143630.01
Eastern Africa 127856.019
Southern Africa 105191.76
Canada 66928.17
Central Asia 19311.459
Region
Sum of Quantity
TOP 10 COUNTRIES WITH THE HIGHEST QUANTITY OF ITEMS
UNITED STATES
FRANCE
AUSTRALIA
MEXICO
GERMANY
CHINA
UNITED KINGDOM
BRAZIL
INDIA
INDONESIA
Country
Sum of Profit
Sum of Profits in each Category and Sub-Category
Total
Furniture
Office Supplies
Technology
Category
Sub-Category
Sales
Sheet1
Sheet2
Sheet3
Sheet5
Sheet6
Sheet8
Sheet9
DASHBOARD
Ready
78%
Type here to search
70°F
ENG
20:07
15-12-2021

LIST OF ANALYSIS WITH RESULTS

- We see that in the fourth quarter of every year the sales were high compared to the rest quarters in the same year
- We also notice that each quarter in the previous year has better sales compared to the same quarter in the previous year
- We see that sales are high in the Western Europe followed by Central America
- The sales are the lowest in Central Asia
- We see that the profits are highest in the technology category and in those max profits from copiers sub-category
- Furniture category has the lowest profits and among those bookcases yield the max profits
- Among all the sub-categories only tables have incurred a loss and rest all are in profits.
- We see that most of the customers have opted for standard class ship mode for each category.
- We also notice that the least opted is same day delivery which means very few people have ordered during an urgency.
- Significant drop compared to standard class compared to others could be because of an additional fee.
- We see that a huge number of items have been shipped to the United States of America.
- We see that after USA they have decreased and the rest follow a relatively straight line.

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