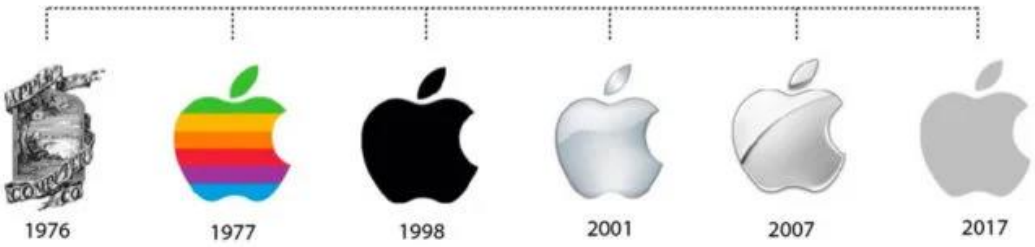
IRevolution:A Data-driven Exploration of Apple's iphone Impact in India



Project Submitted BY:

U.Logeshwari

A.Logeswari

K.Maluthi

N.Nandhini

Introduction:

The world has changed as a consequence of the increasing use of smartphones, which have improved communication, connected people, and revolutioned many different businesses. With its main product, the iphone, capturing markets around the world, Apple Inc. has emerged as a prominent player among the top smartphone markers. India, one of the economies with the greatest economic growth, has seen a tremendous increase in smartphone usage, making it an interesting market to study the effects of Apple's iphone.

In order to shed light on important factors like market penetration, customer preferences, economic ramifications, and societal changes, this research report will perform a data-driven investigation of the impact of the iphone in India. This study will offer invaluable insights into the transformative impact of the iphone on India's technological landscape and the lives of its consumers by using advanced data analytics techniques and analyzing large datasets.

Apple has a special chance to increase its market share and develop a significant presence in India thanks to the country's large population and rising smartphone adoption. Each new iphone model unveiling generates excitement and anticipation among Indian's buyers. By utilizing the plethora of information. Already accessible, this research aims to go beyond conjecture and anecdotal evidence in order to develop a thorugh knowledge of the effects of the iphone.

Milestone 1: Define Problem/ Problem Understanding

Activity 1: Specify the Business Problem

The objective of this study is to obtain a thorough understanding of how Apple's iphone would affect the Indian market. It particular, we want to investigate the market penetration of iphones in India, comprehend consumer preferences and decision-making processes, and assess the social and economic effect of iphone adoption. We aim to offer insights that can direct designs for Apple and other stakeholders active in the Indian smartphone industry by leberaging data analytics and visualizations using tableau.

Activity 2: Business requirements

the project's business needs call for data analysis and visualization in order to understand how apples iphone affected india.

Activity:3 Literature survey

the literature survey would involve a search for relevant publications, articles, and academic papers on the topic, as well as analysis of the various research.

Activity:4 Social are business impact

Social impact:

An important components of this study is the societal impact of apple's iphone in india.

Business Impact:

Research must focus on how apples iphone has affected business in india. We seek to examine the economic effects of iphone uptaking in the Indian market using data analytics and tableau visualisations.

Milestone: 2 Data collection and preparation:

Data collection is the process of gathering and measuring information on variables of interest in a fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes and generate insights from the data.

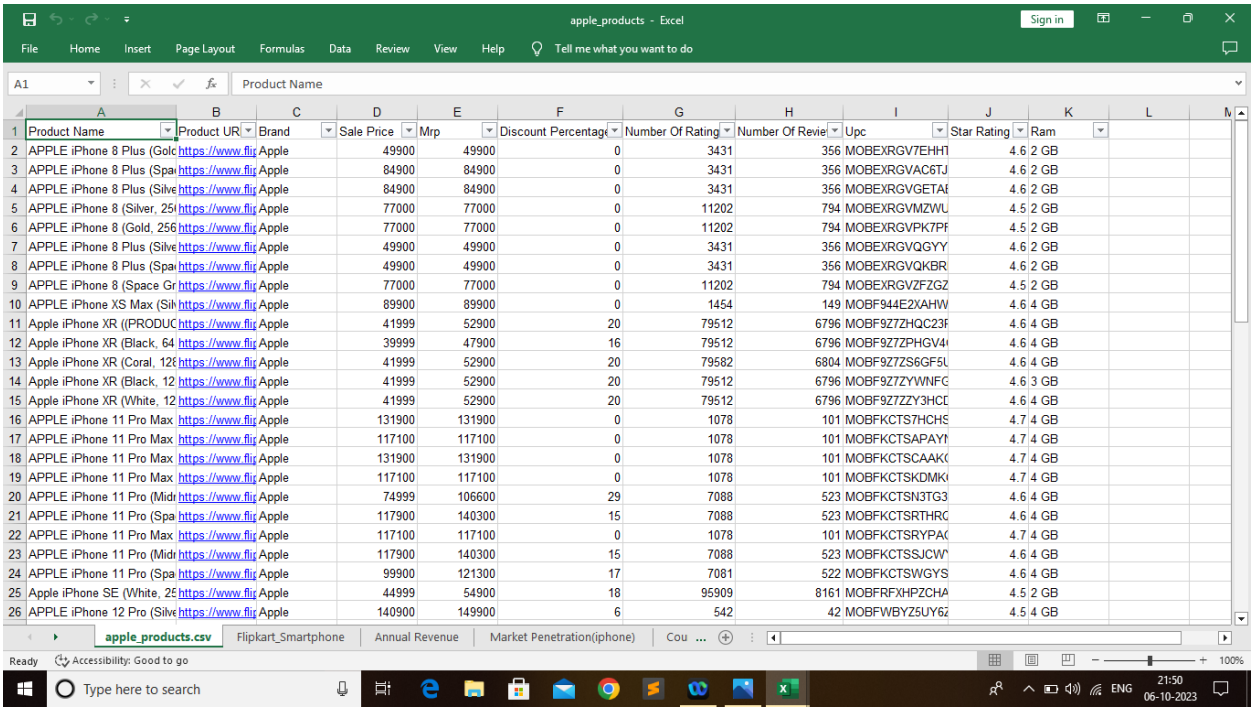
Activity :1 Collect the data set

Activity1.1: Understand the data

Data contains all the meta information regarding the columns descrided in the CSV files. We have provided the XLSX file.

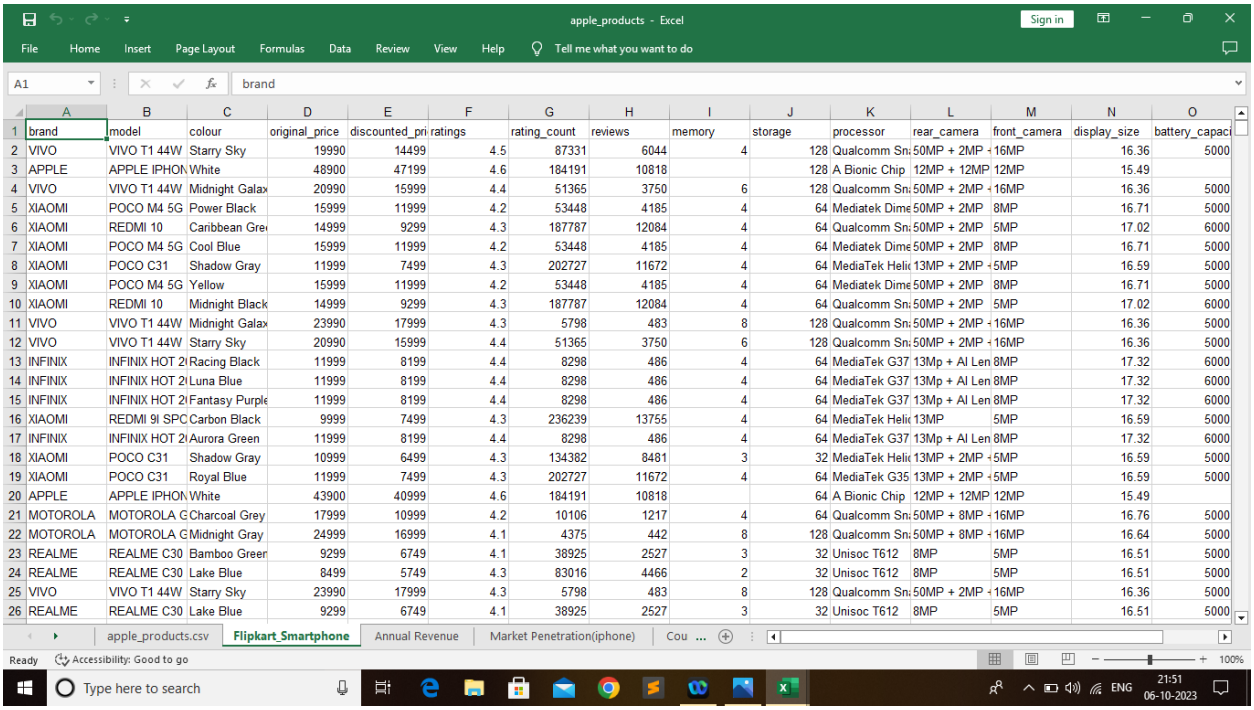
Column description for Big ml dataset CSV:

Apple products CSV



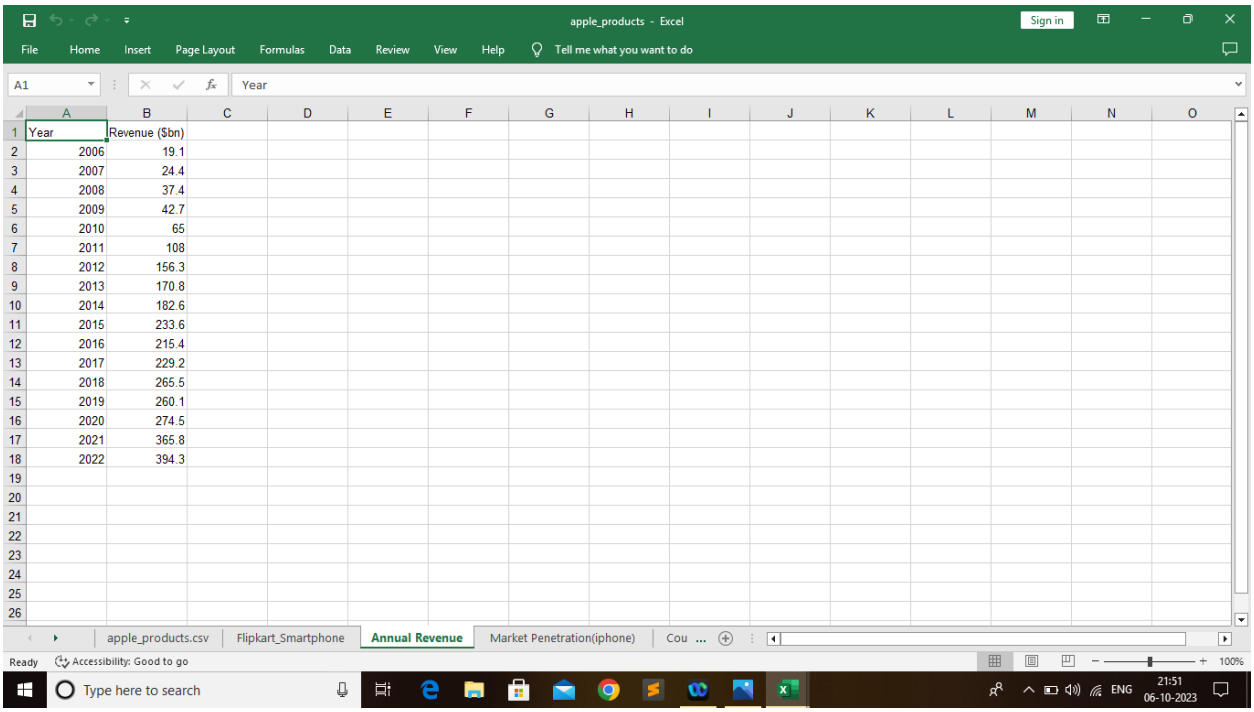
	A	B	C	D	E	F	G	H	I	J	K
1	Product Name	Product UR	Brand	Sale Price	Mrp	Discount Percentage	Number Of Rating	Number Of Revie	Upc	Star Rating	Ram
2	APPLE iPhone 8 Plus (Gold	https://www.flig	Apple	49900	49900	0	3431	356	MOBEXRGV7EHHT	4.6	2 GB
3	APPLE iPhone 8 Plus (Spa	https://www.flig	Apple	84900	84900	0	3431	356	MOBEXRGVAC6TJ	4.6	2 GB
4	APPLE iPhone 8 Plus (Silve	https://www.flig	Apple	84900	84900	0	3431	356	MOBEXRGVGETAE	4.6	2 GB
5	APPLE iPhone 8 (Silver, 25	https://www.flig	Apple	77000	77000	0	11202	794	MOBEXRGVMZWU	4.5	2 GB
6	APPLE iPhone 8 (Gold, 256	https://www.flig	Apple	77000	77000	0	11202	794	MOBEXRGVPK7PF	4.5	2 GB
7	APPLE iPhone 8 Plus (Silve	https://www.flig	Apple	49900	49900	0	3431	356	MOBEXRGVQGYY	4.6	2 GB
8	APPLE iPhone 8 Plus (Spa	https://www.flig	Apple	49900	49900	0	3431	356	MOBEXRGVQKBR	4.6	2 GB
9	APPLE iPhone 8 (Space Gr	https://www.flig	Apple	77000	77000	0	11202	794	MOBEXRGVZFZGZ	4.5	2 GB
10	APPLE iPhone XS Max (Sil	https://www.flig	Apple	89900	89900	0	1454	149	MOBF944E2XAHW	4.6	4 GB
11	Apple iPhone XR ((PRODUC	https://www.flig	Apple	41999	52900	20	79512	6796	MOBF9Z7ZHQC23F	4.6	4 GB
12	Apple iPhone XR (Black, 64	https://www.flig	Apple	39999	47900	16	79512	6796	MOBF9Z7ZPHGV4	4.6	4 GB
13	Apple iPhone XR (Coral, 128	https://www.flig	Apple	41999	52900	20	79582	6804	MOBF9Z7ZS6GF5U	4.6	4 GB
14	Apple iPhone XR (Black, 12	https://www.flig	Apple	41999	52900	20	79512	6796	MOBF9Z7ZYWNFG	4.6	3 GB
15	Apple iPhone XR (White, 12	https://www.flig	Apple	41999	52900	20	79512	6796	MOBF9Z7ZZY3HCD	4.6	4 GB
16	APPLE iPhone 11 Pro Max	https://www.flig	Apple	131900	131900	0	1078	101	MOBFKCTS7HCHS	4.7	4 GB
17	APPLE iPhone 11 Pro Max	https://www.flig	Apple	117100	117100	0	1078	101	MOBFKCTSAPAYM	4.7	4 GB
18	APPLE iPhone 11 Pro Max	https://www.flig	Apple	131900	131900	0	1078	101	MOBFKCTSCAAKG	4.7	4 GB
19	APPLE iPhone 11 Pro Max	https://www.flig	Apple	117100	117100	0	1078	101	MOBFKCTSKDMKG	4.7	4 GB
20	APPLE iPhone 11 Pro (Midr	https://www.flig	Apple	74999	106600	29	7088	523	MOBFKCTSN3TG3	4.6	4 GB
21	APPLE iPhone 11 Pro (Spa	https://www.flig	Apple	117900	140300	15	7088	523	MOBFKCTSRTHRG	4.6	4 GB
22	APPLE iPhone 11 Pro Max	https://www.flig	Apple	117100	117100	0	1078	101	MOBFKCTSRYPAG	4.7	4 GB
23	APPLE iPhone 11 Pro (Midr	https://www.flig	Apple	117900	140300	15	7088	523	MOBFKCTSSJCWY	4.6	4 GB
24	APPLE iPhone 11 Pro (Spa	https://www.flig	Apple	99900	121300	17	7081	522	MOBFKCTSWGYS	4.6	4 GB
25	Apple iPhone SE (White, 25	https://www.flig	Apple	44999	54900	18	95909	8161	MOBFRFXHPZCHA	4.5	2 GB
26	APPLE iPhone 12 Pro (Silve	https://www.flig	Apple	140900	149900	6	542	42	MOBFWBYZ5UY6Z	4.5	4 GB

Flipcart smartphones



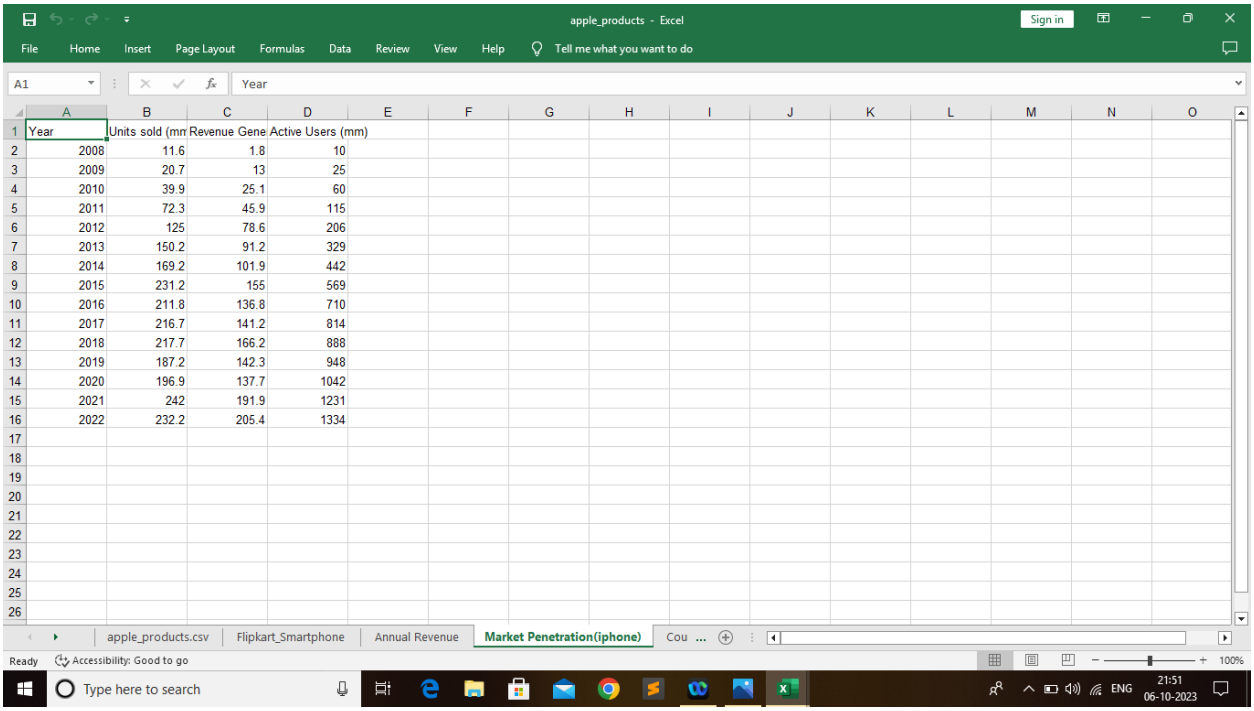
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	brand	model	colour	original_price	discounted_pri	ratings	rating_count	reviews	memory	storage	processor	rear_camera	front_camera	display_size	battery_capaci
2	VIVO	VIVO T1 44W	Starry Sky	19990	14499	4.5	87331	6044	4	128	Qualcomm Sn	50MP + 2MP +	16MP	16.36	5000
3	APPLE	APPLE IPHON	White	48900	47199	4.6	184191	10818		128	A Bionic Chip	12MP + 12MP	12MP	15.49	
4	VIVO	VIVO T1 44W	Midnight Galax	20990	15999	4.4	51365	3750	6	128	Qualcomm Sn	50MP + 2MP +	16MP	16.36	5000
5	XIAOMI	POCO M4 5G	Power Black	15999	11999	4.2	53448	4185	4	64	Mediatek Dime	50MP + 2MP	8MP	16.71	5000
6	XIAOMI	REDMI 10	Caribbean Gre	14999	9299	4.3	187787	12084	4	64	Qualcomm Sn	50MP + 2MP	5MP	17.02	6000
7	XIAOMI	POCO M4 5G	Cool Blue	15999	11999	4.2	53448	4185	4	64	Mediatek Dime	50MP + 2MP	8MP	16.71	5000
8	XIAOMI	POCO C31	Shadow Gray	11999	7499	4.3	202727	11672	4	64	MediaTek Helic	13MP + 2MP +	5MP	16.59	5000
9	XIAOMI	POCO M4 5G	Yellow	15999	11999	4.2	53448	4185	4	64	Mediatek Dime	50MP + 2MP	8MP	16.71	5000
10	XIAOMI	REDMI 10	Midnight Black	14999	9299	4.3	187787	12084	4	64	Qualcomm Sn	50MP + 2MP	5MP	17.02	6000
11	VIVO	VIVO T1 44W	Midnight Galax	23990	17999	4.3	5798	483	8	128	Qualcomm Sn	50MP + 2MP +	16MP	16.36	5000
12	VIVO	VIVO T1 44W	Starry Sky	20990	15999	4.4	51365	3750	6	128	Qualcomm Sn	50MP + 2MP +	16MP	16.36	5000
13	INFINIX	INFINIX HOT 2(	Racing Black	11999	8199	4.4	8298	486	4	64	MediaTek G37	13Mp + AI Len	8MP	17.32	6000
14	INFINIX	INFINIX HOT 2(	Luna Blue	11999	8199	4.4	8298	486	4	64	MediaTek G37	13Mp + AI Len	8MP	17.32	6000
15	INFINIX	INFINIX HOT 2(	Fantasy Purple	11999	8199	4.4	8298	486	4	64	MediaTek G37	13Mp + AI Len	8MP	17.32	6000
16	XIAOMI	REDMI 9I SPC	Carbon Black	9999	7499	4.3	236239	13755	4	64	MediaTek Helic	13MP	5MP	16.59	5000
17	INFINIX	INFINIX HOT 2(	Aurora Green	11999	8199	4.4	8298	486	4	64	MediaTek G37	13Mp + AI Len	8MP	17.32	6000
18	XIAOMI	POCO C31	Shadow Gray	10999	6499	4.3	134382	8481	3	32	MediaTek Helic	13MP + 2MP +	5MP	16.59	5000
19	XIAOMI	POCO C31	Royal Blue	11999	7499	4.3	202727	11672	4	64	MediaTek G35	13MP + 2MP +	5MP	16.59	5000
20	APPLE	APPLE IPHON	White	43900	40999	4.6	184191	10818		64	A Bionic Chip	12MP + 12MP	12MP	15.49	
21	MOTOROLA	MOTOROLA G	Charcoal Grey	17999	10999	4.2	10106	1217	4	64	Qualcomm Sn	50MP + 8MP +	16MP	16.76	5000
22	MOTOROLA	MOTOROLA G	Midnight Gray	24999	16999	4.1	4375	442	8	128	Qualcomm Sn	50MP + 8MP +	16MP	16.64	5000
23	REALME	REALME C30	Bamboo Green	9299	6749	4.1	38925	2527	3	32	Unisoc T612	8MP	5MP	16.51	5000
24	REALME	REALME C30	Lake Blue	8499	5749	4.3	83016	4466	2	32	Unisoc T612	8MP	5MP	16.51	5000
25	VIVO	VIVO T1 44W	Starry Sky	23990	17999	4.3	5798	483	8	128	Qualcomm Sn	50MP + 2MP +	16MP	16.36	5000
26	REALME	REALME C30	Lake Blue	9299	6749	4.1	38925	2527	3	32	Unisoc T612	8MP	5MP	16.51	5000

Annual revenue



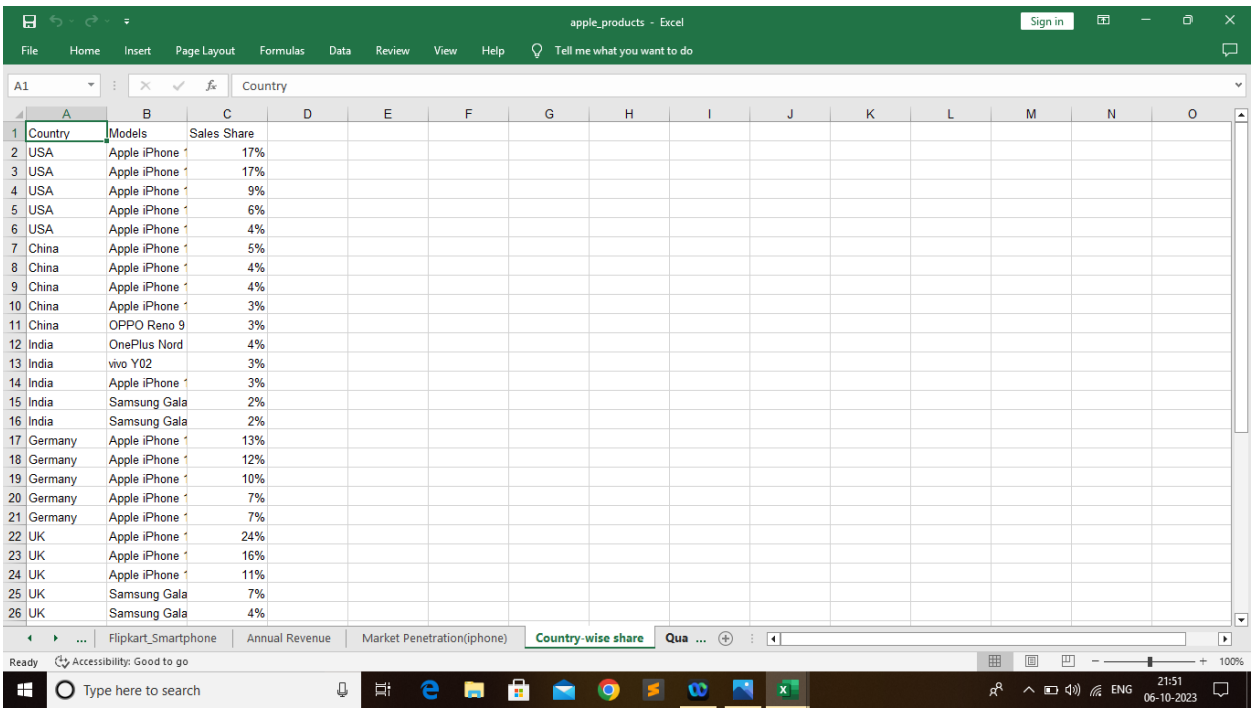
	A	B
1	Year	Revenue ($bn)
2	2006	19.1
3	2007	24.4
4	2008	37.4
5	2009	42.7
6	2010	65
7	2011	108
8	2012	156.3
9	2013	170.8
10	2014	182.6
11	2015	233.6
12	2016	215.4
13	2017	229.2
14	2018	265.5
15	2019	260.1
16	2020	274.5
17	2021	365.8
18	2022	394.3

Market penetration



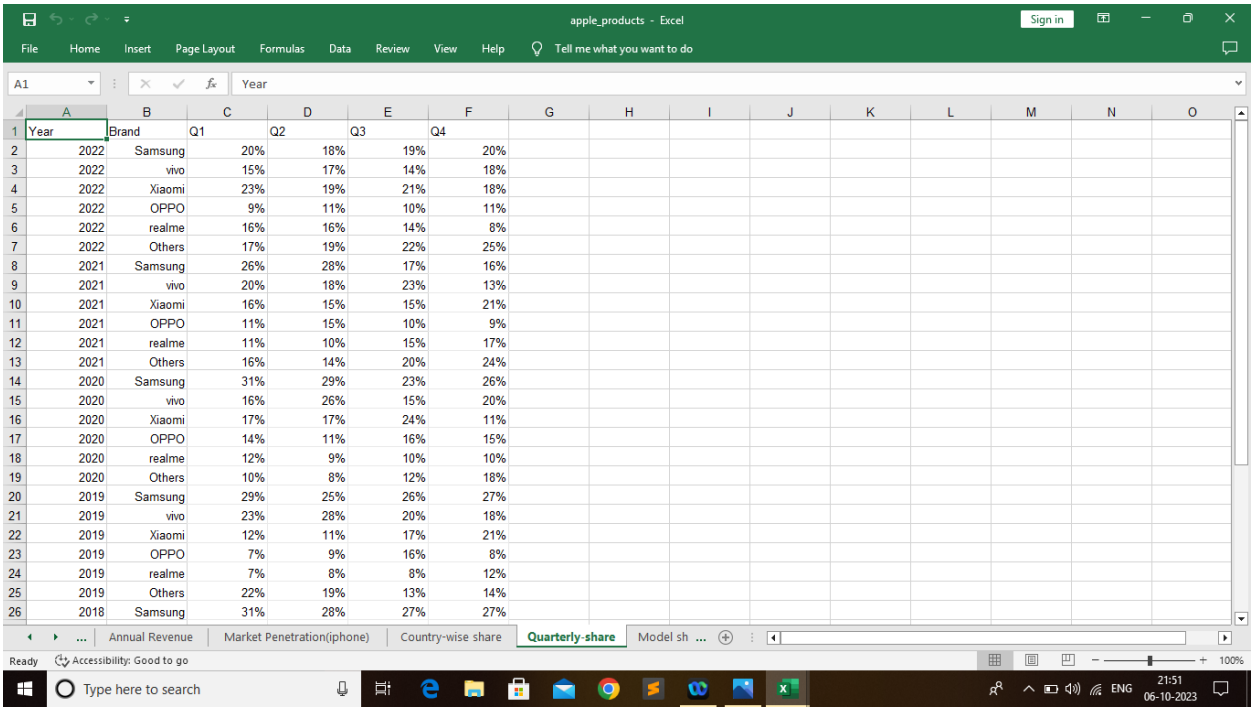
Year	Units sold (mn	Revenue Gene	Active Users (mm)
2008	11.6	1.8	10
2009	20.7	13	25
2010	39.9	25.1	60
2011	72.3	45.9	115
2012	125	78.6	206
2013	150.2	91.2	329
2014	169.2	101.9	442
2015	231.2	155	569
2016	211.8	136.8	710
2017	216.7	141.2	814
2018	217.7	166.2	888
2019	187.2	142.3	948
2020	196.9	137.7	1042
2021	242	191.9	1231
2022	232.2	205.4	1334

Country wise share



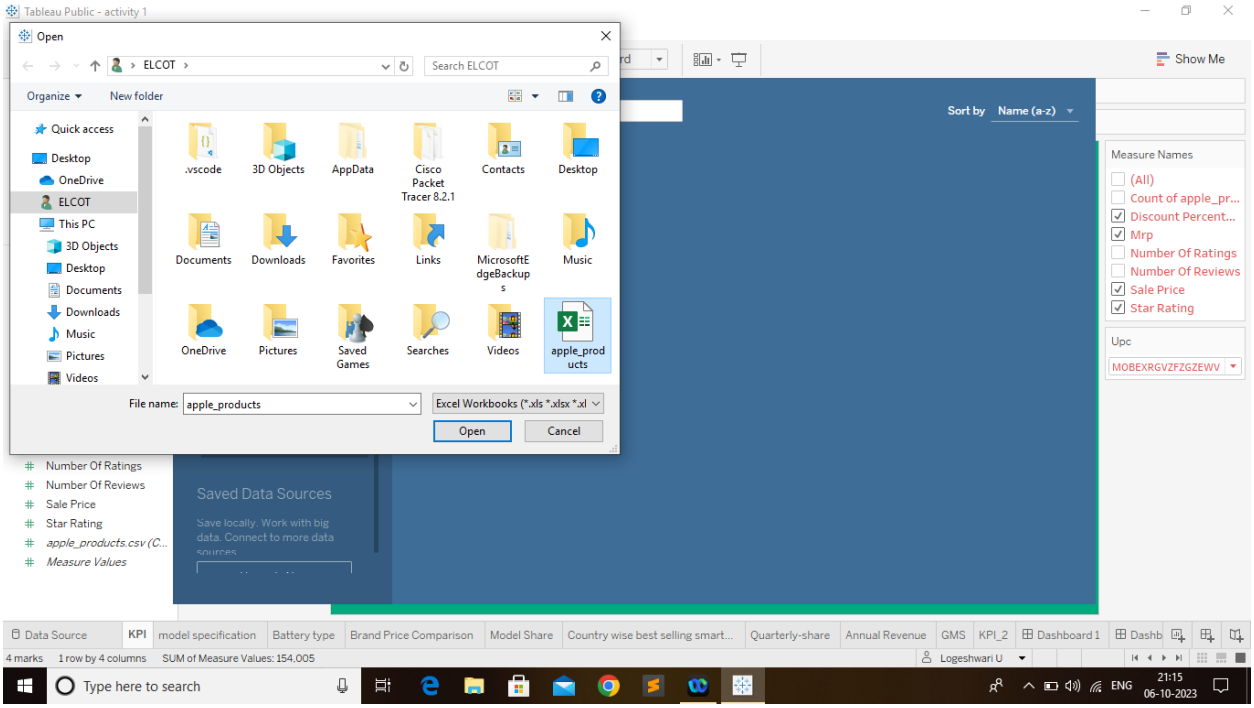
Country	Models	Sales Share
USA	Apple iPhone 1	17%
USA	Apple iPhone 1	17%
USA	Apple iPhone 1	9%
USA	Apple iPhone 1	6%
USA	Apple iPhone 1	4%
China	Apple iPhone 1	5%
China	Apple iPhone 1	4%
China	Apple iPhone 1	4%
China	Apple iPhone 1	3%
China	OPPO Reno 9	3%
India	OnePlus Nord	4%
India	vivo Y02	3%
India	Apple iPhone 1	3%
India	Samsung Gala	2%
India	Samsung Gala	2%
Germany	Apple iPhone 1	13%
Germany	Apple iPhone 1	12%
Germany	Apple iPhone 1	10%
Germany	Apple iPhone 1	7%
Germany	Apple iPhone 1	7%
UK	Apple iPhone 1	24%
UK	Apple iPhone 1	16%
UK	Apple iPhone 1	11%
UK	Samsung Gala	7%
UK	Samsung Gala	4%

Quarterly-share



Year	Brand	Q1	Q2	Q3	Q4
2022	Samsung	20%	18%	19%	20%
2022	vivo	15%	17%	14%	18%
2022	Xiaomi	23%	19%	21%	18%
2022	OPPO	9%	11%	10%	11%
2022	realme	16%	16%	14%	8%
2022	Others	17%	19%	22%	25%
2021	Samsung	26%	28%	17%	16%
2021	vivo	20%	18%	23%	13%
2021	Xiaomi	16%	15%	15%	21%
2021	OPPO	11%	15%	10%	9%
2021	realme	11%	10%	15%	17%
2021	Others	16%	14%	20%	24%
2020	Samsung	31%	29%	23%	26%
2020	vivo	16%	26%	15%	20%
2020	Xiaomi	17%	17%	24%	11%
2020	OPPO	14%	11%	16%	15%
2020	realme	12%	9%	10%	10%
2020	Others	10%	8%	12%	18%
2019	Samsung	29%	25%	26%	27%
2019	vivo	23%	28%	20%	18%
2019	Xiaomi	12%	11%	17%	21%
2019	OPPO	7%	9%	16%	8%
2019	realme	7%	8%	8%	12%
2019	Others	22%	19%	13%	14%
2018	Samsung	31%	28%	27%	27%

Activity 2: Connect datasets with tableau



Milestone 3: Data preparation

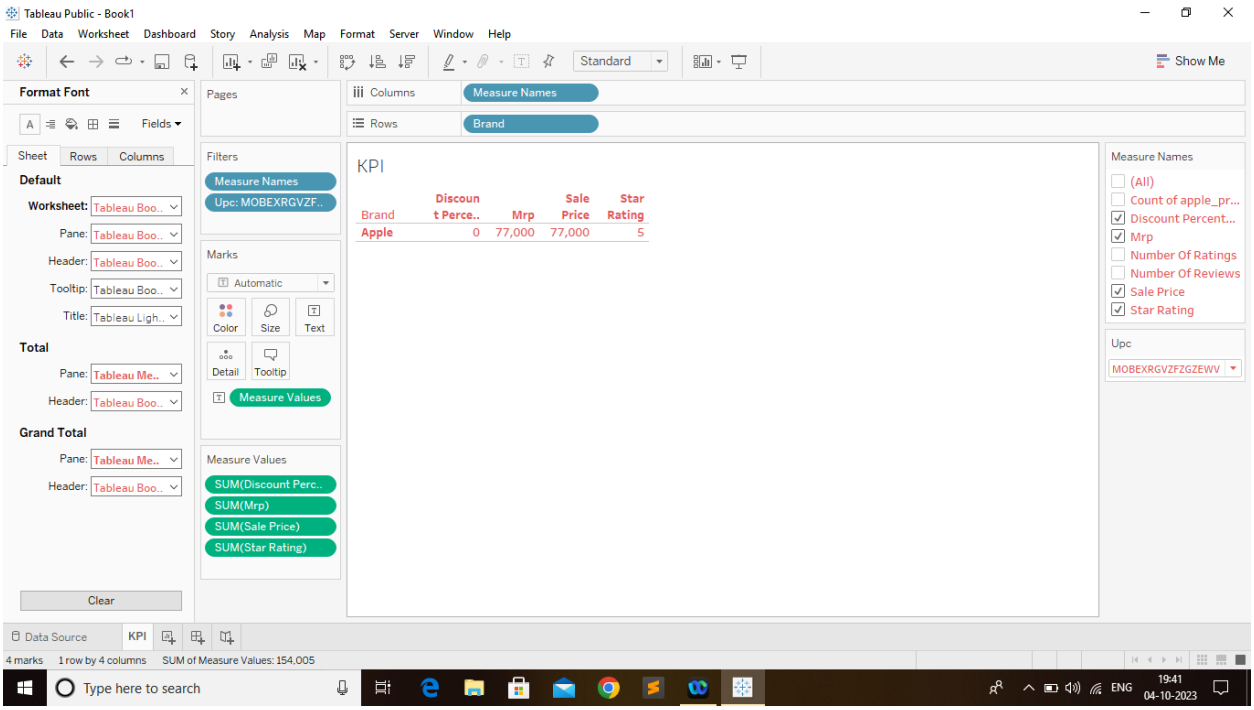
Activity 1: prepare the data for visualization

Data and rules for combaining and shaping data to prepare it for analysis and visualization in tableau. Data module sources data madule can be based on data servers, pakages, uploaded files, data sets, and other data moduls

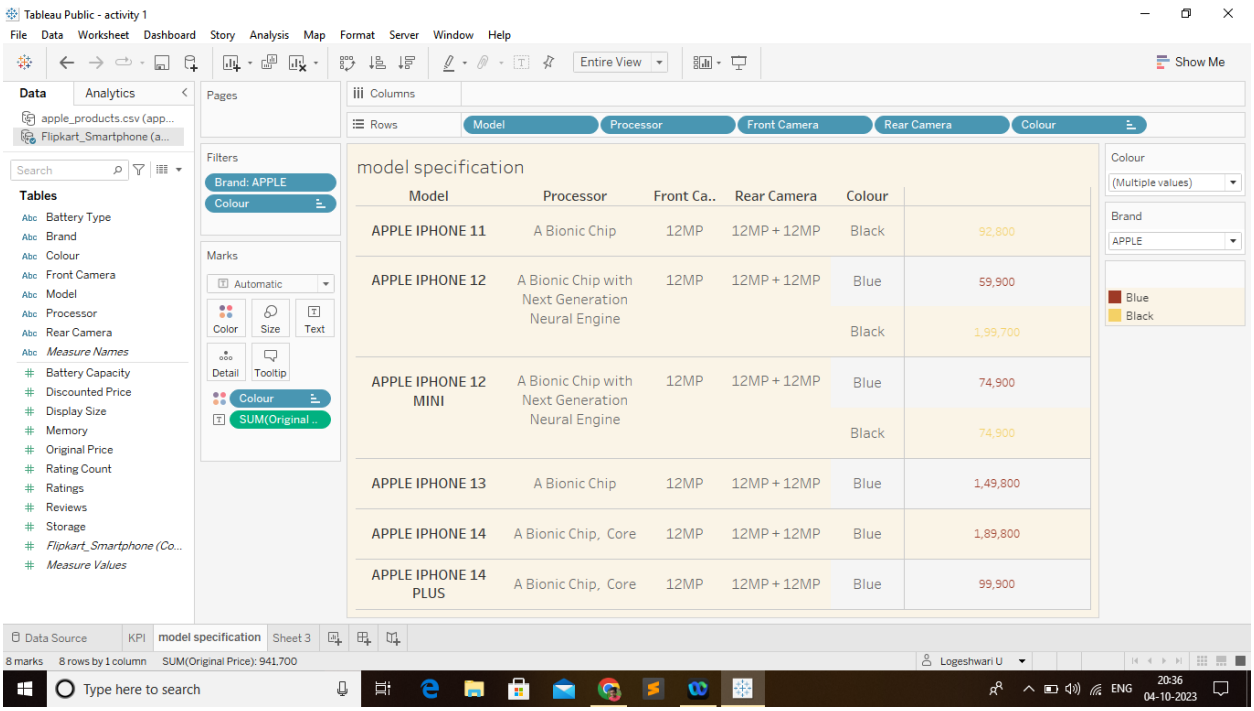
Milestone:4 Data visualization:

Activity 1: No of unique visualisations

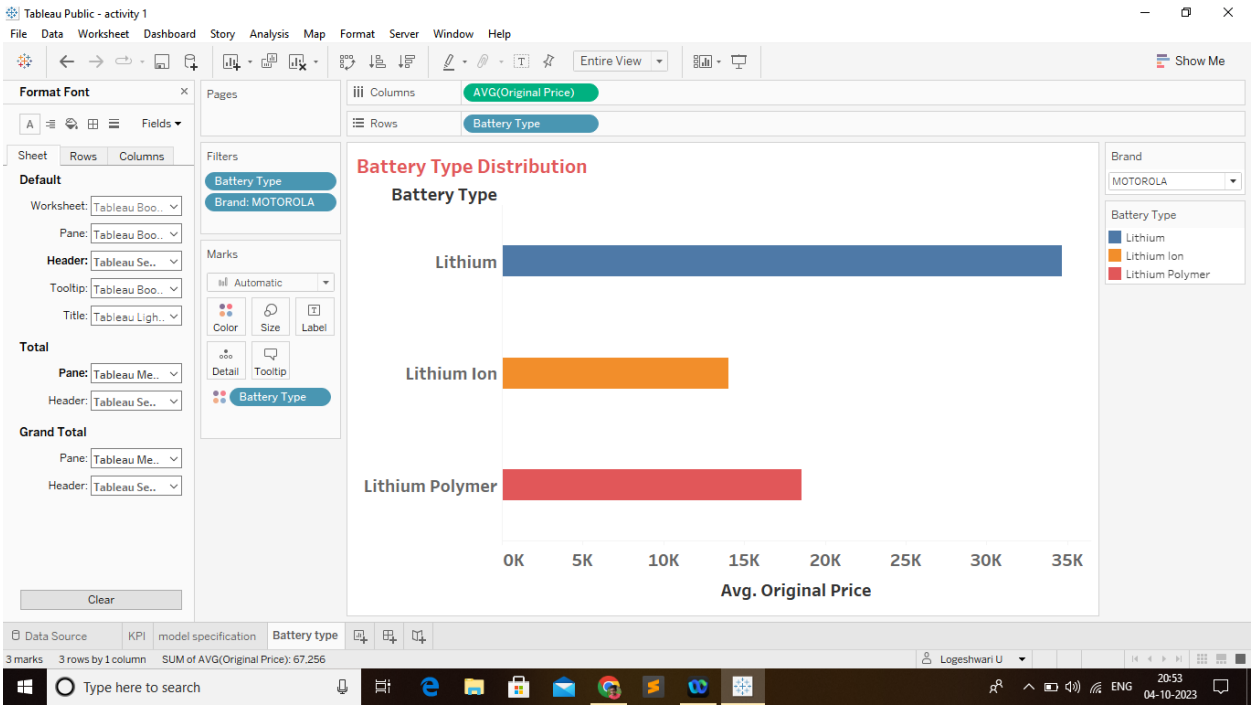
Activity1.1: KPI



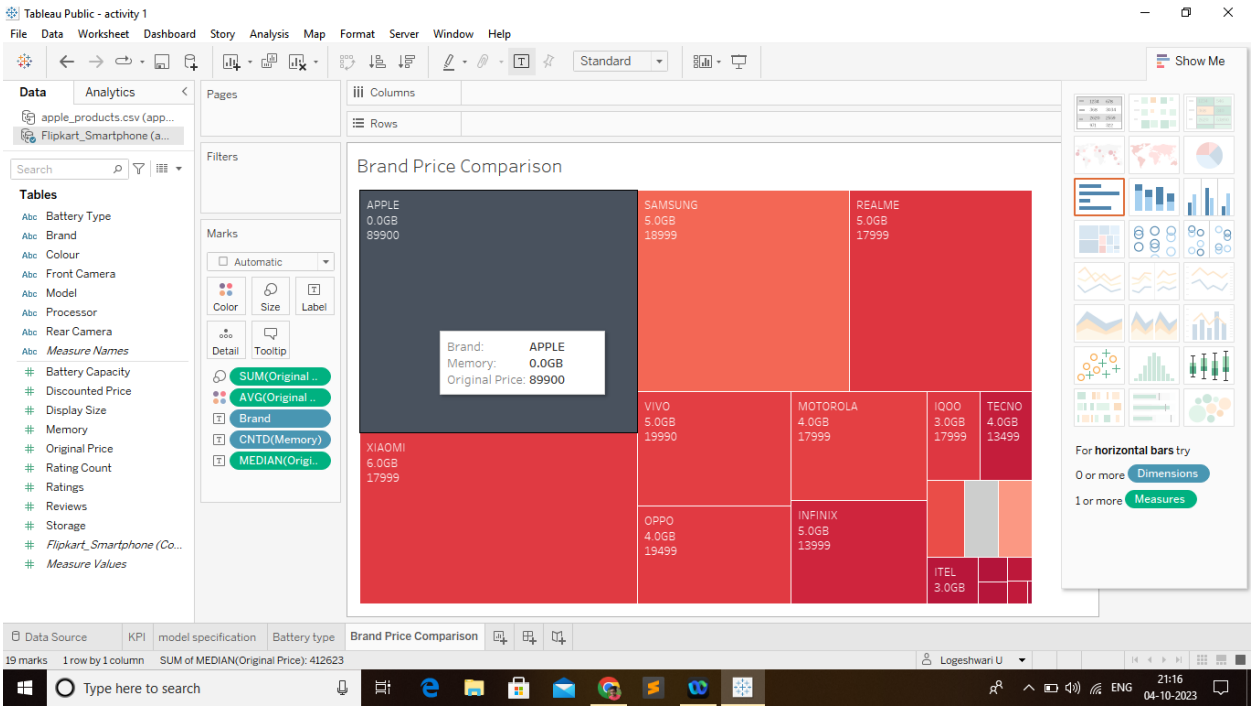
Activity 1.2: Model specification



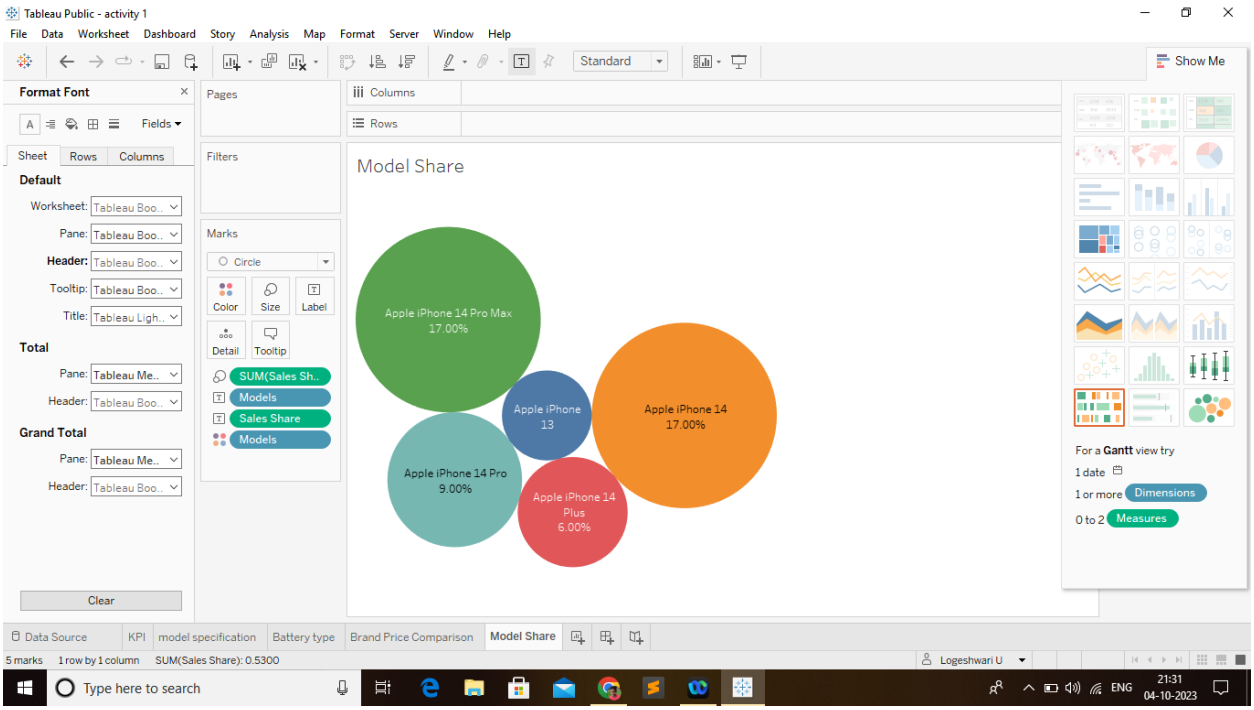
Activity 1.3: Bar chart showing battery-type disrribution



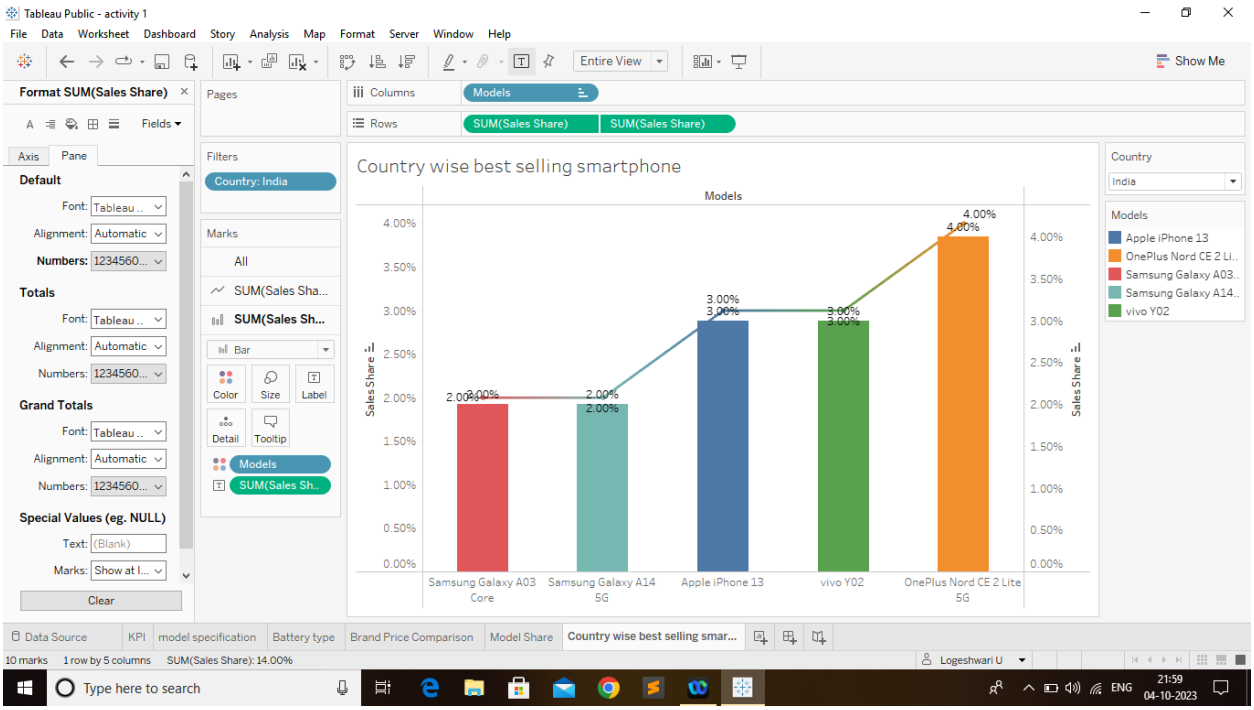
Activity 1.4: Treemap showing brand-price comparison



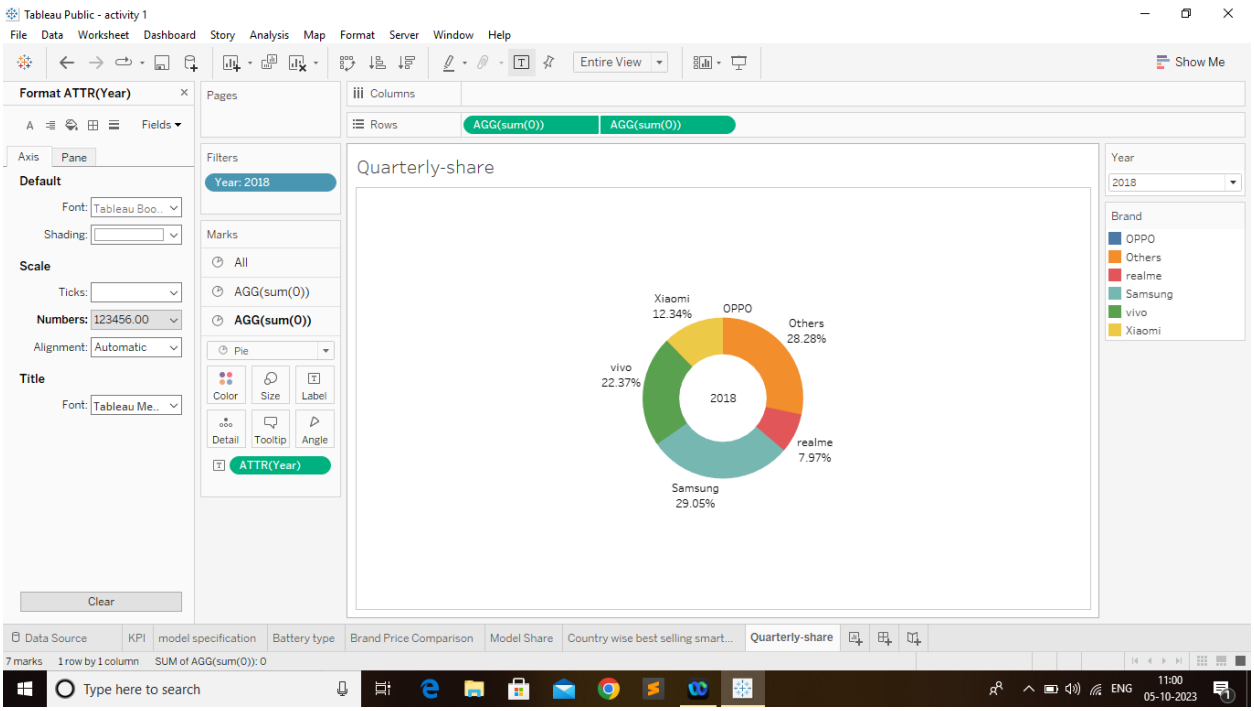
Activity 1.5: Bubble Chart showing Model-wise share of iphone



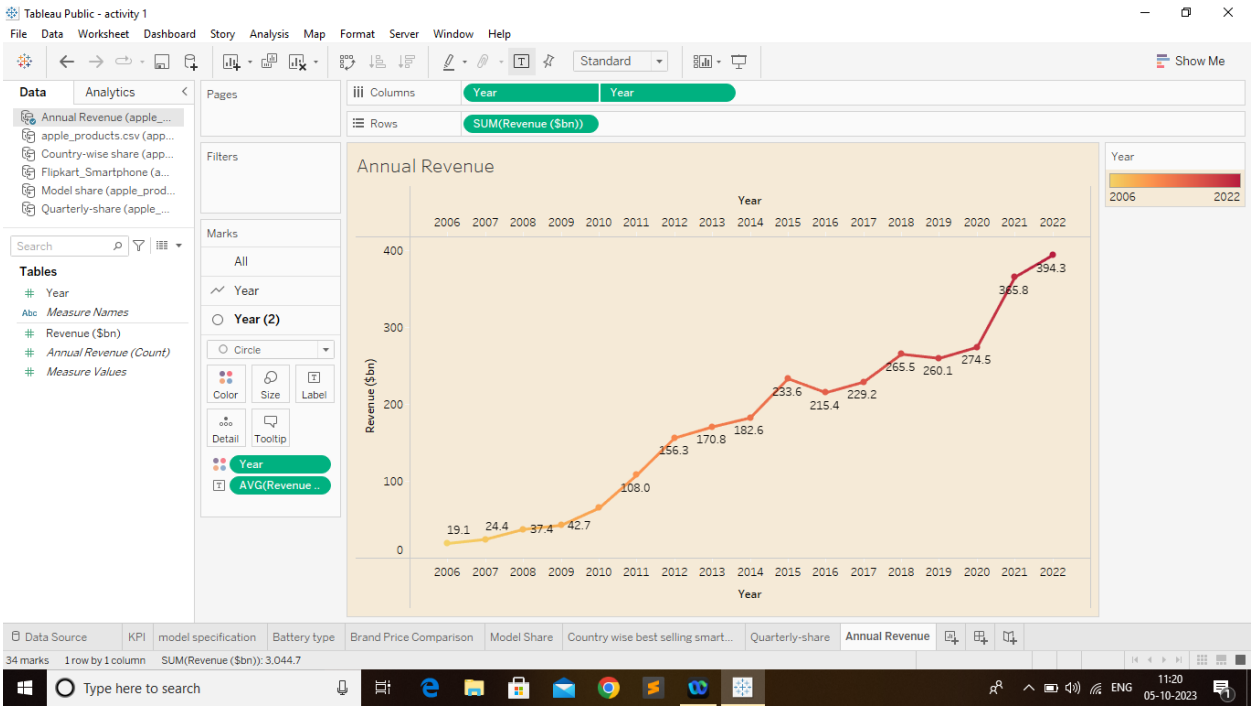
Activity 1.6: Lined bar-chart showing Country-wise best selling smartphone



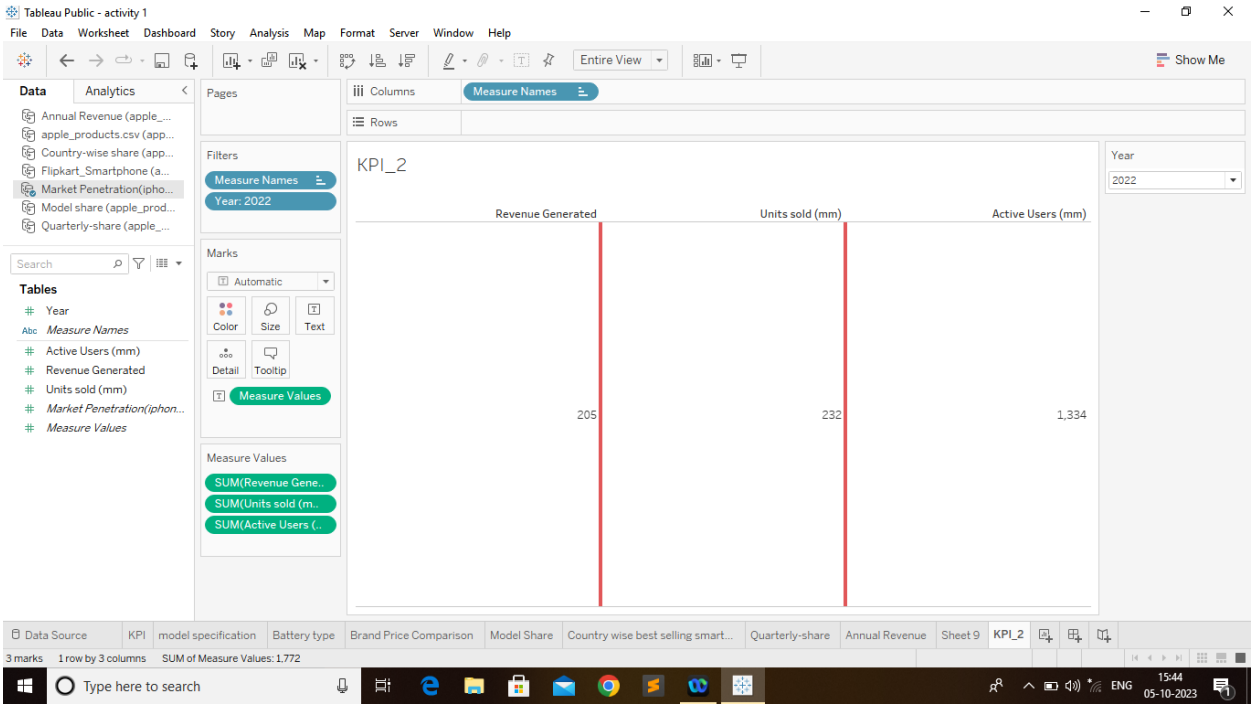
Activity 1.7: Donut chart for Quarterly share



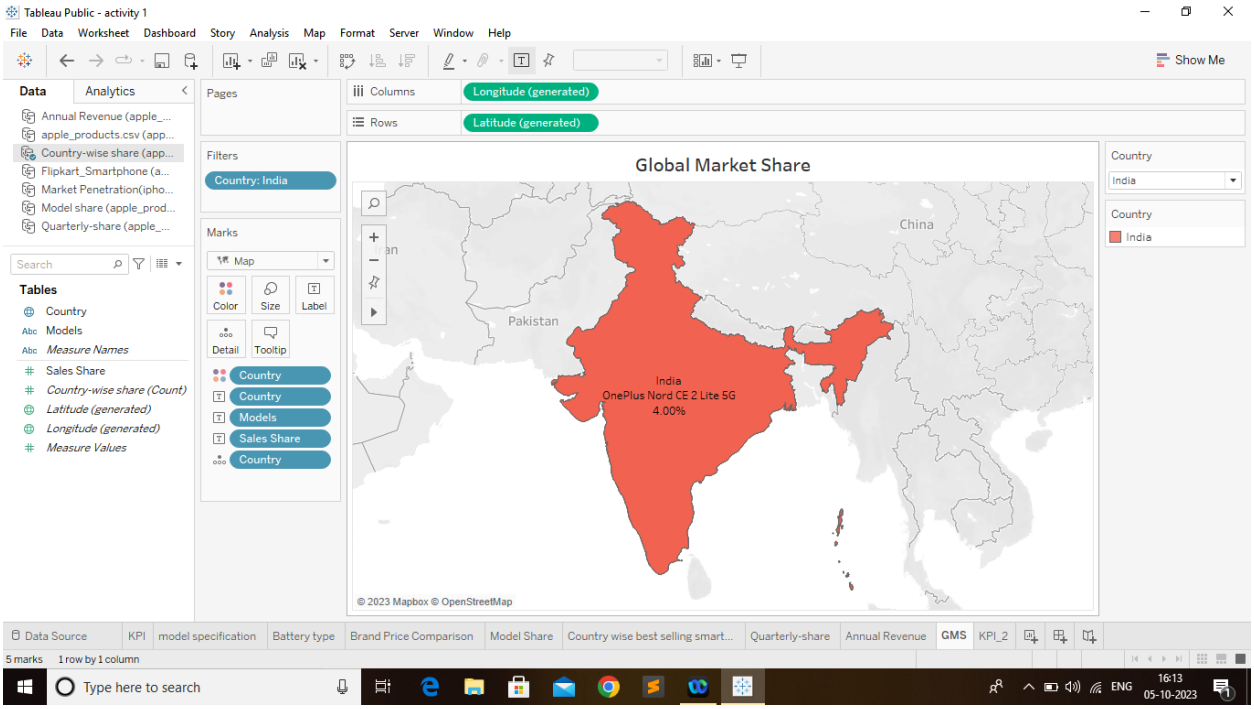
Activity 1.8: Line chart for Annual revenue year-wise



Activity 1.9: Text table for yearly KPI

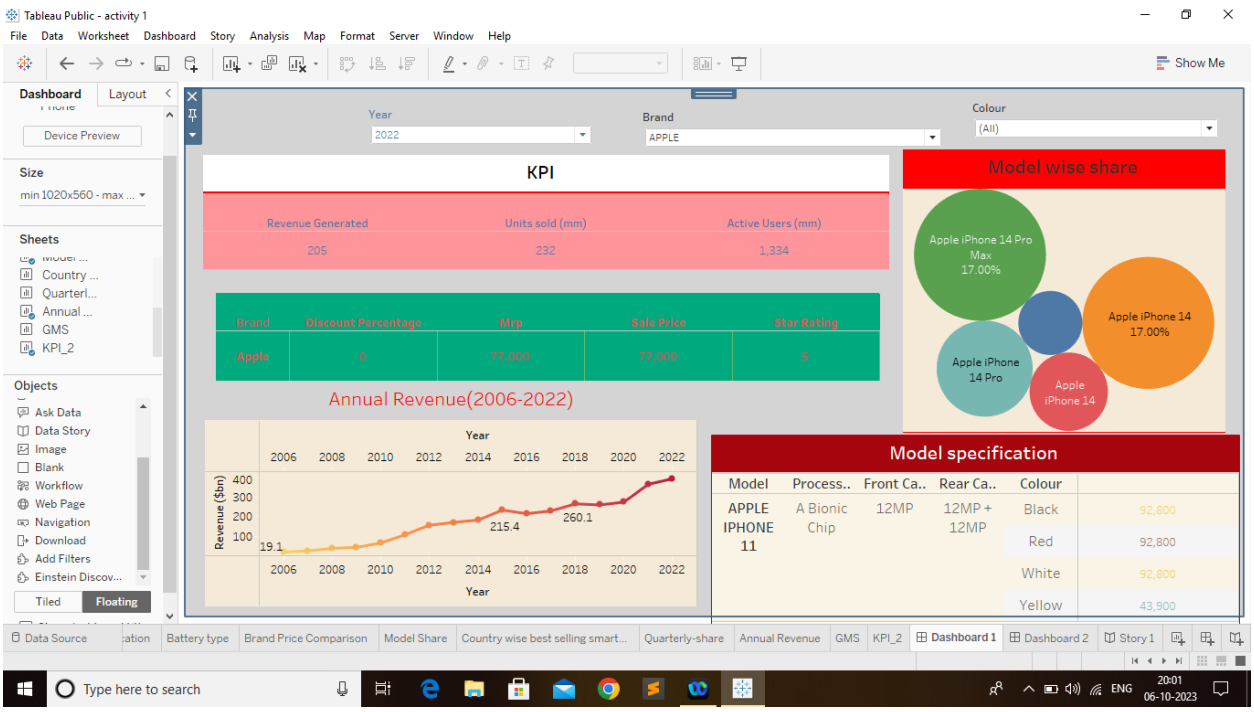


Activity 1.10 Map showing global market share



Milestone 5: Dashboard

Activity:1-Response and design of dashboard



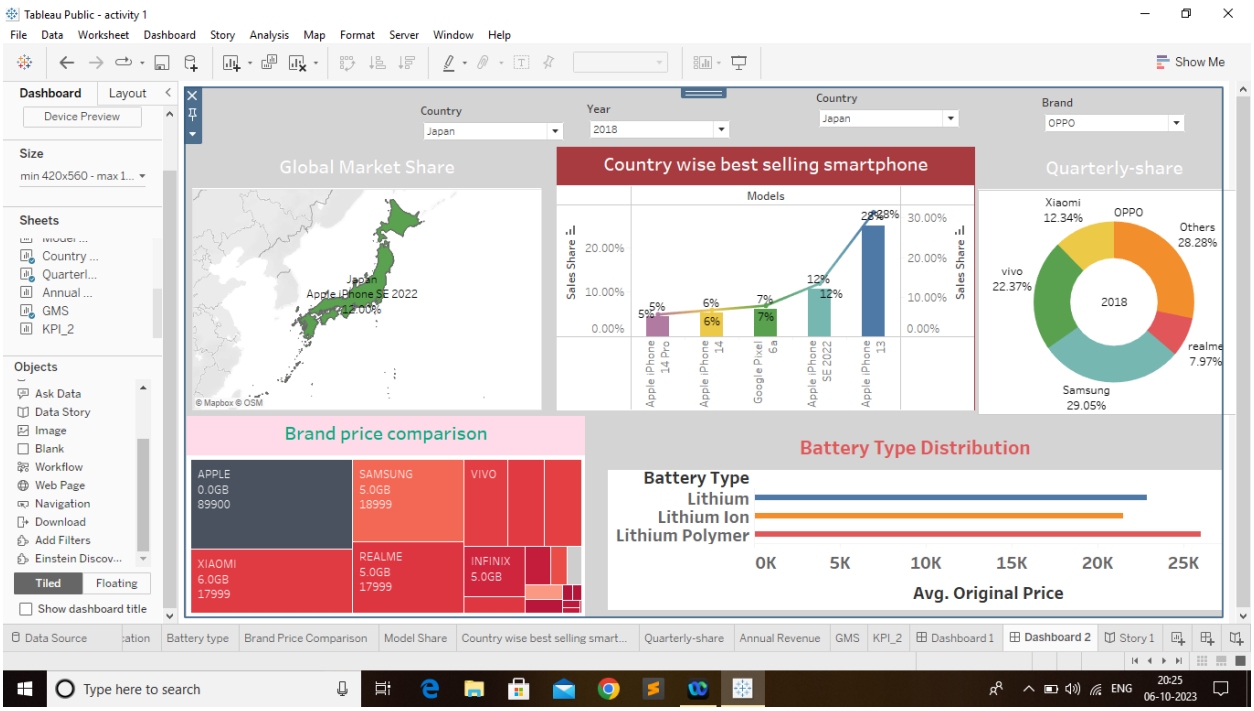
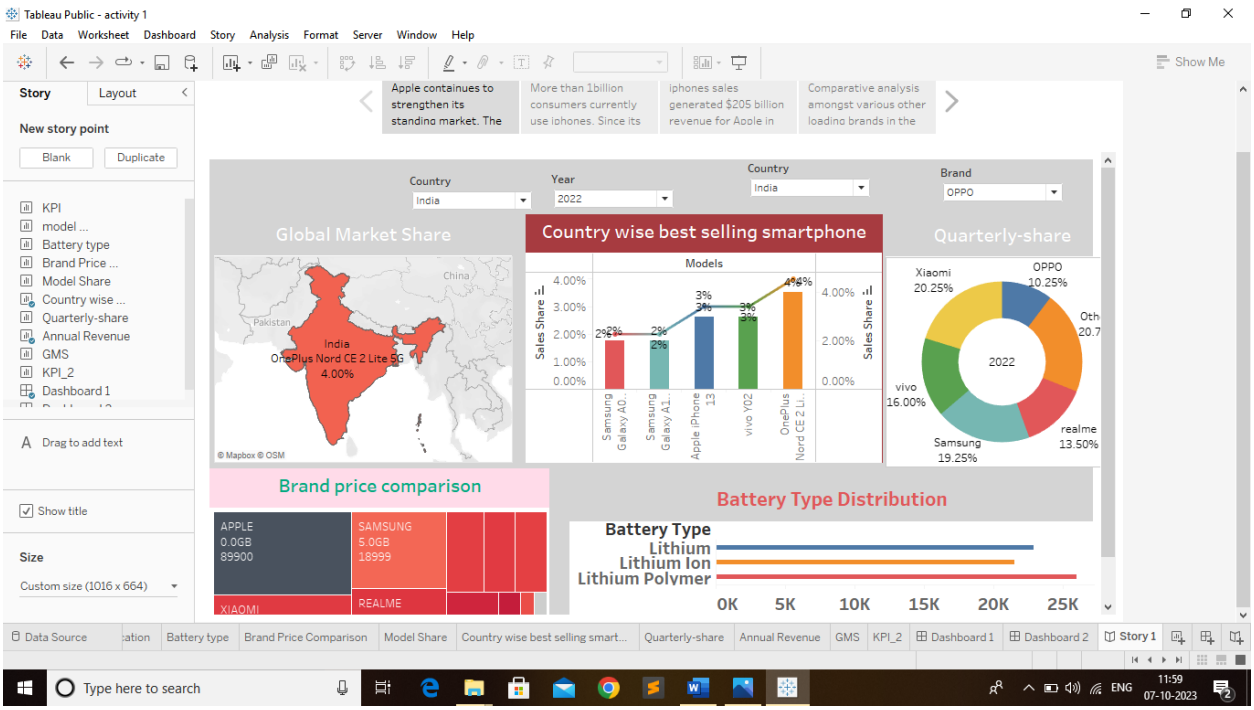
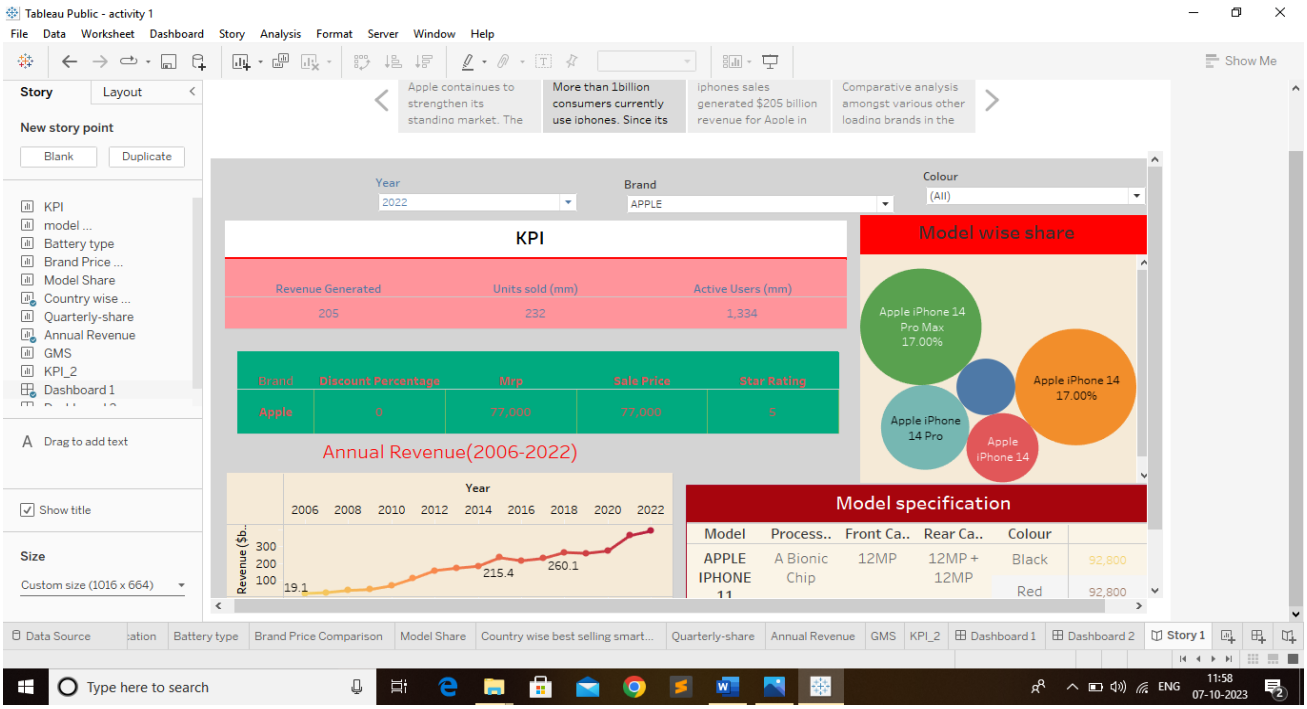


Tableau Public - activity 1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Show Me
Dashboard Layout
Device Preview
Size
min 420x560 - max 1...
Sheets
Country ...
Quarterl...
Annual ...
GMS
KPI_2
Objects
Ask Data
Data Story
Image
Blank
Workflow
Web Page
Navigation
Download
Add Filters
Einstein Discov...
Tiled Floating
Show dashboard title
Country
Japan
Year
2018
Country
Japan
Brand
OPPO
Global Market Share
Japan
Apple iPhone SE 2022
12.00%
© Mapbox © OSM
Country wise best selling smartphone
Models
Sales Share
30.00%
20.00%
10.00%
0.00%
5%
6%
7%
12%
28.28%
Apple iPhone 14 Pro
Apple iPhone 14
Google Pixel 6a
Apple iPhone SE 2022
Apple iPhone 13
Quarterly-share
Xiaomi 12.34%
OPPO
Others 28.28%
vivo 22.37%
2018
realme 7.97%
Samsung 29.05%
Brand price comparison
APPLE 0.0GB 89900
SAMSUNG 5.0GB 18999
VIVO
XIAOMI 6.0GB 17999
REALME 5.0GB 17999
INFINIX 5.0GB
Battery Type Distribution
Battery Type
Lithium
Lithium Ion
Lithium Polymer
0K 5K 10K 15K 20K 25K
Avg. Original Price
Data Source
Battery type
Brand Price Comparison
Model Share
Country wise best selling smart...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Dashboard 2
Story 1
Type here to search
ENG
20:25
06-10-2023

Milestone 6: Story

Activity:1- No of Scenes of story





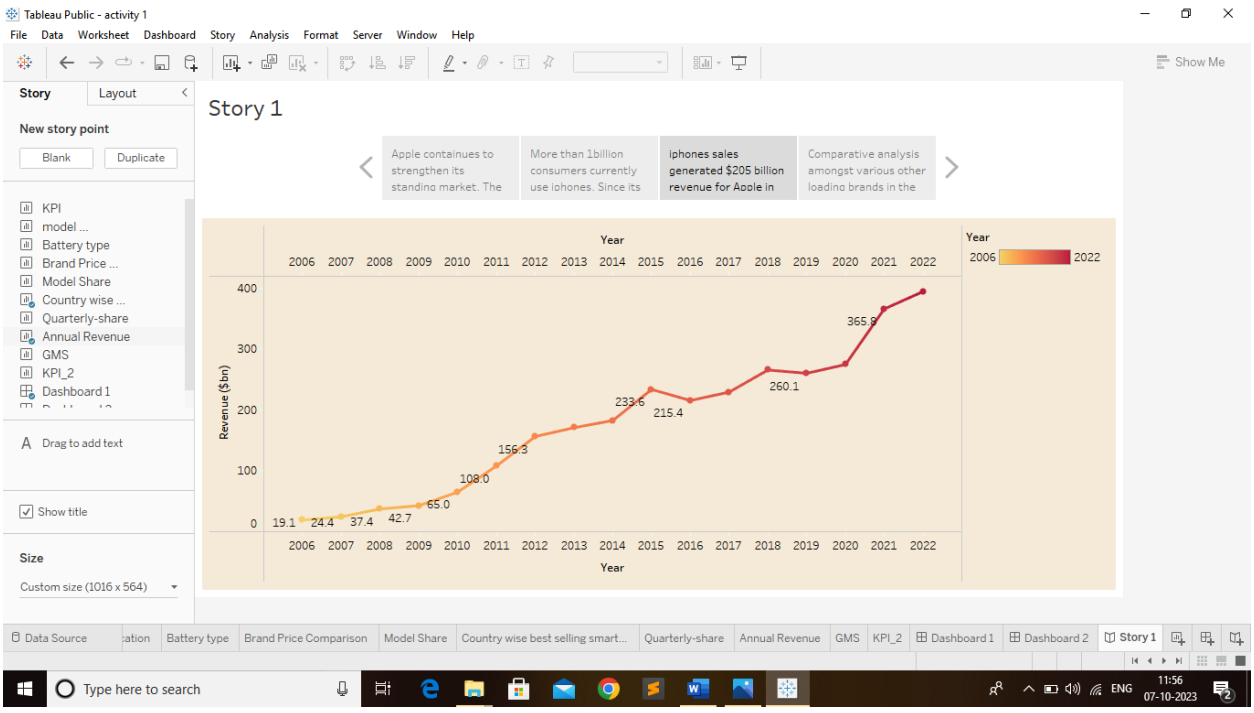


Tableau Public - activity 1
File Data Worksheet Dashboard Story Analysis Format Server Window Help
Show Me
Story
Layout
New story point
Blank
Duplicate
KPI
model ...
Battery type
Brand Price ...
Model Share
Country wise ...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Drag to add text
Show title
Size
Custom size (1016 x 564)
Story 1
Apple containues to strengthen its standing market. The
More than 1billion consumers currently use iphones. Since its
iphones sales generated $205 billion revenue for Apple in
Comparative analysis amongst various other loading brands in the
Year
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Year
2006
2022
Revenue ($bn)
400
300
200
100
0
19.1
24.4
37.4
42.7
65.0
108.0
156.3
233.6
215.4
260.1
365.8
Year
Data Source
Battery type
Brand Price Comparison
Model Share
Country wise best selling smart...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Dashboard 2
Story 1
Type here to search
ENG
11:56
07-10-2023

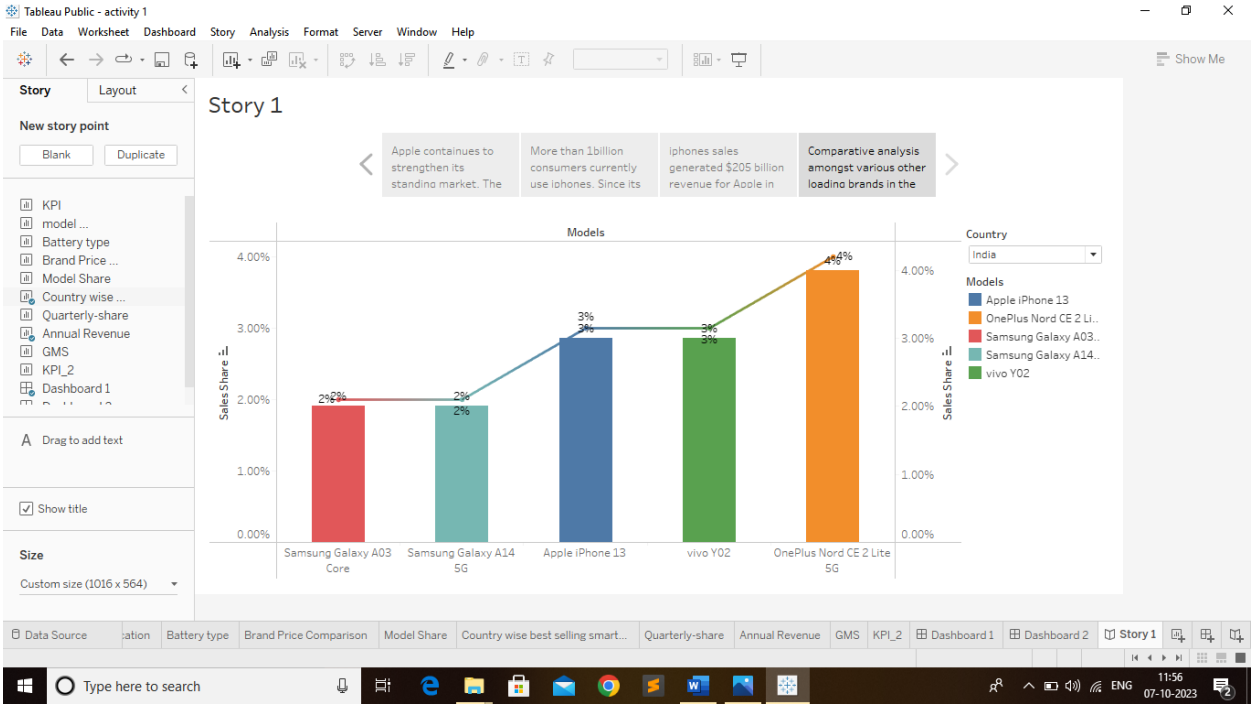
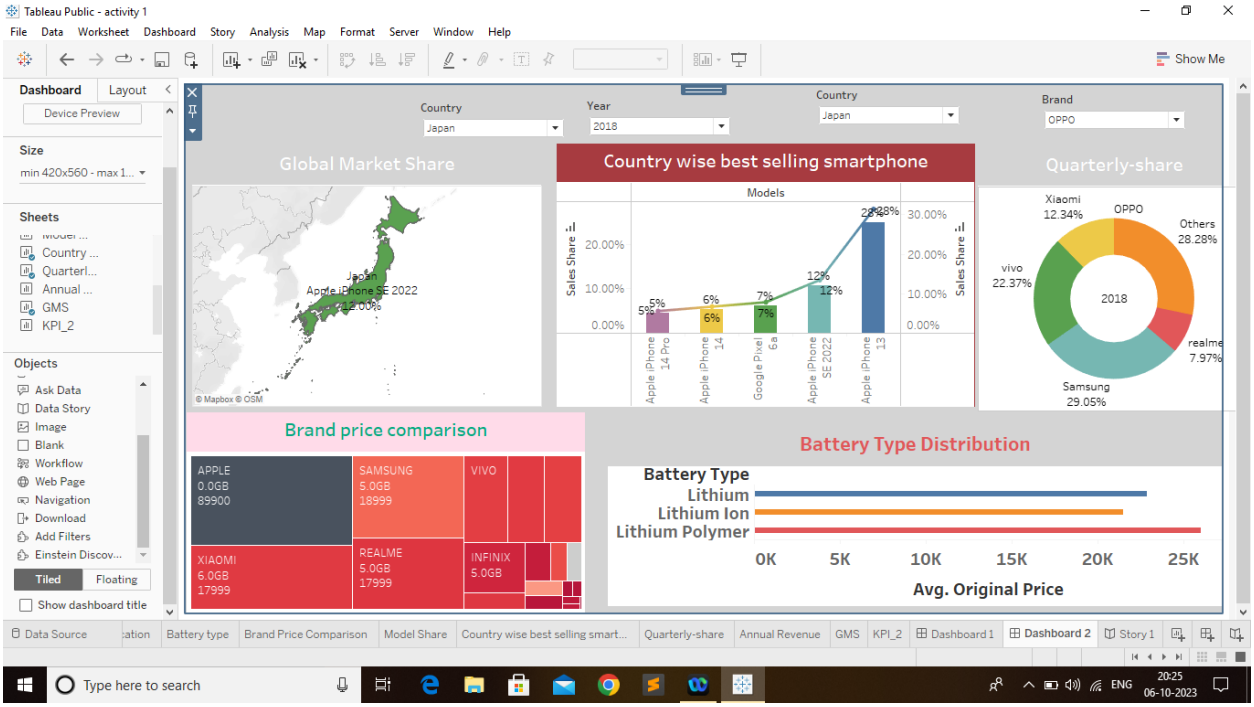
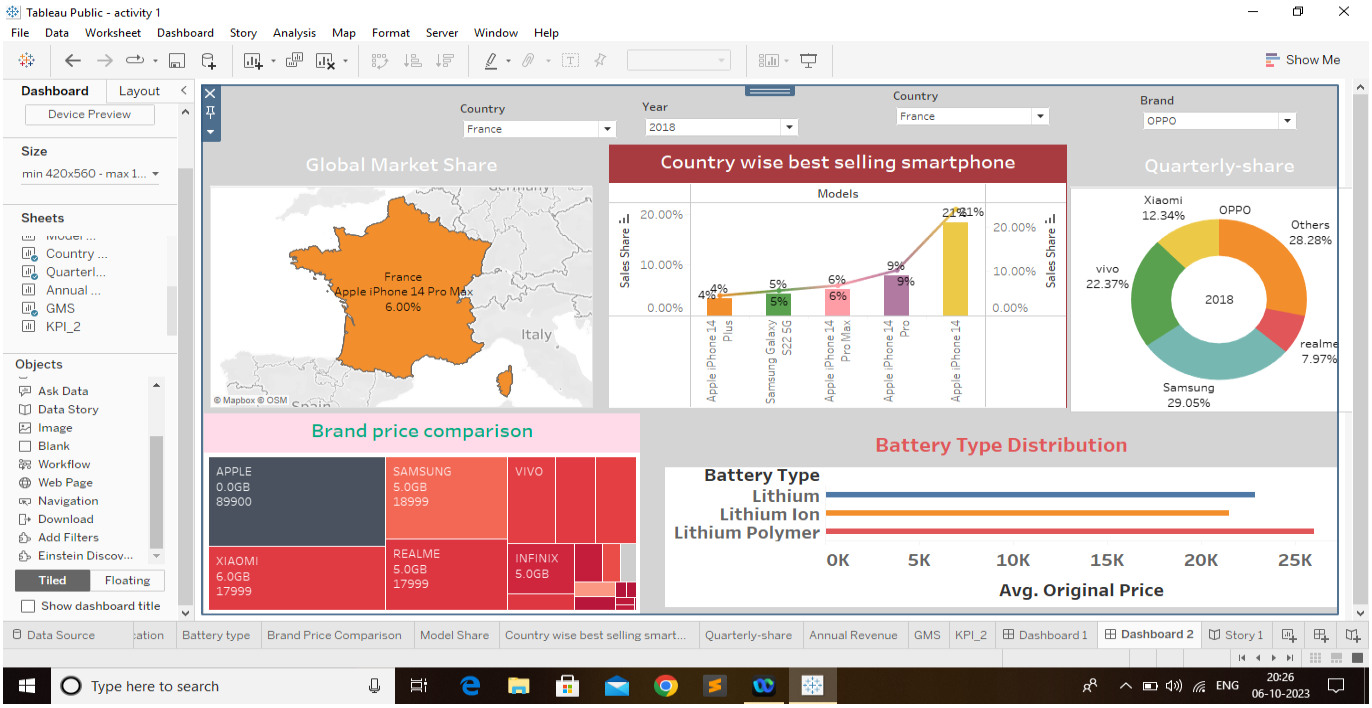


Tableau Public - activity 1
File Data Worksheet Dashboard Story Analysis Format Server Window Help
Show Me
Story
Layout
New story point
Blank
Duplicate
KPI
model ...
Battery type
Brand Price ...
Model Share
Country wise ...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Drag to add text
Show title
Size
Custom size (1016 x 564)
Story 1
Apple containues to strengthen its standing market. The
More than 1billion consumers currently use iphones. Since its
iphones sales generated $205 billion revenue for Apple in
Comparative analysis amongst various other loading brands in the
Models
Sales Share
4.00%
3.00%
2.00%
1.00%
0.00%
2%
2%
3%
3%
4%
Samsung Galaxy A03 Core
Samsung Galaxy A14 5G
Apple iPhone 13
vivo Y02
OnePlus Nord CE 2 Lite 5G
Country
India
Models
Apple iPhone 13
OnePlus Nord CE 2 Li..
Samsung Galaxy A03..
Samsung Galaxy A14..
vivo Y02
Data Source
Battery type
Brand Price Comparison
Model Share
Country wise best selling smart...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Dashboard 2
Story 1
Type here to search
ENG
11:56
07-10-2023

Milestone 7: Performance Testing

Activity 1: Utillization of testing





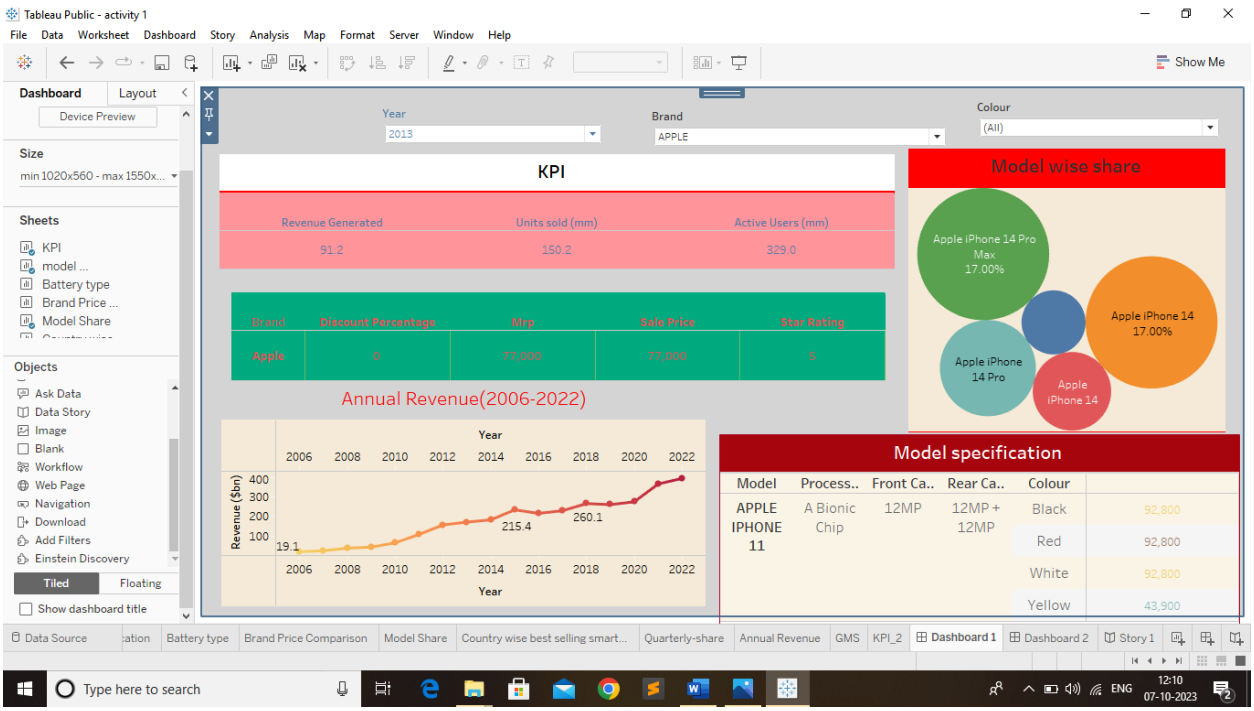
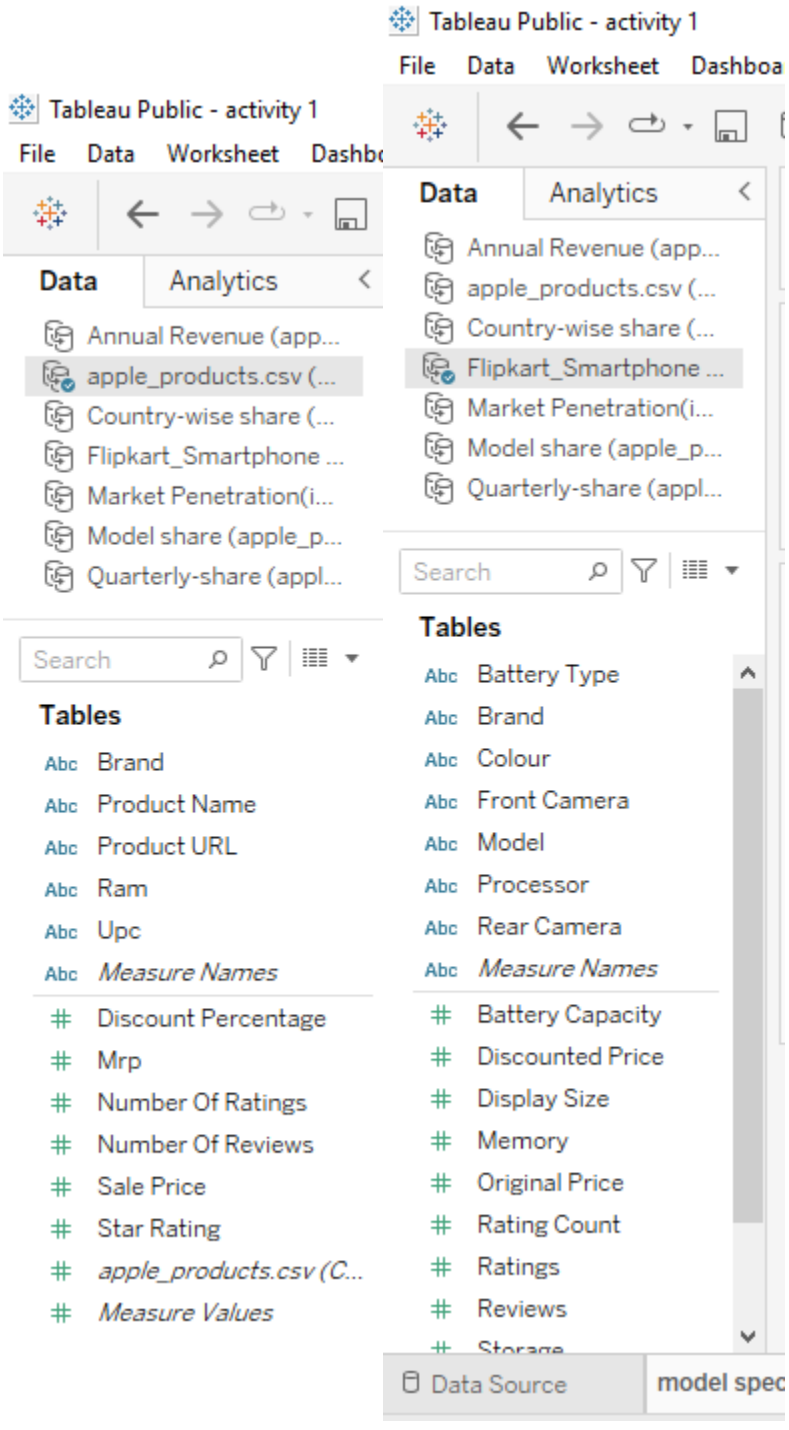


Tableau Public - activity 1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Show Me
Dashboard Layout
Device Preview
Size
min 1020x560 - max 1550x...
Sheets
KPI
model ...
Battery type
Brand Price ...
Model Share
Objects
Ask Data
Data Story
Image
Blank
Workflow
Web Page
Navigation
Download
Add Filters
Einstein Discovery
Tiled Floating
Show dashboard title
Year
2013
Brand
APPLE
Colour
(All)
KPI
Revenue Generated
Units sold (mm)
Active Users (mm)
91.2
150.2
329.0
Brand
Discount Percentage
Mrp
Sale Price
Star Rating
Apple
0
77,000
77,000
5
Annual Revenue(2006-2022)
Year
Revenue ($bn)
19.1
215.4
260.1
Model wise share
Apple iPhone 14 Pro Max 17.00%
Apple iPhone 14 17.00%
Apple iPhone 14 Pro
Apple iPhone 14
Model specification
Model
Process..
Front Ca..
Rear Ca..
Colour
APPLE IPHONE 11
A Bionic Chip
12MP
12MP + 12MP
Black
92,800
Red
92,800
White
92,800
Yellow
43,900
Data Source
Battery type
Brand Price Comparison
Model Share
Country wise best selling smart...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Dashboard 2
Story 1
Type here to search
ENG
12:10
07-10-2023

Activity 2: No of Calculation fields



Activity 3: NOof visualizations/graph

- KPI

- Model Specification
- Model-wise share
- Battery-type distribution
- Brand-price Comparison
- Model-wise Share of iphone
- Country-wise best-selling smartphone
- Annual Revenue year-wise
- KPI-2
- Global Market Share

Milestone 8:Publishing

Publishing dashboard and reports to tableau public

Step 1 Go to data source and select Extract so that hyper extension files are created and save it at your desktop.

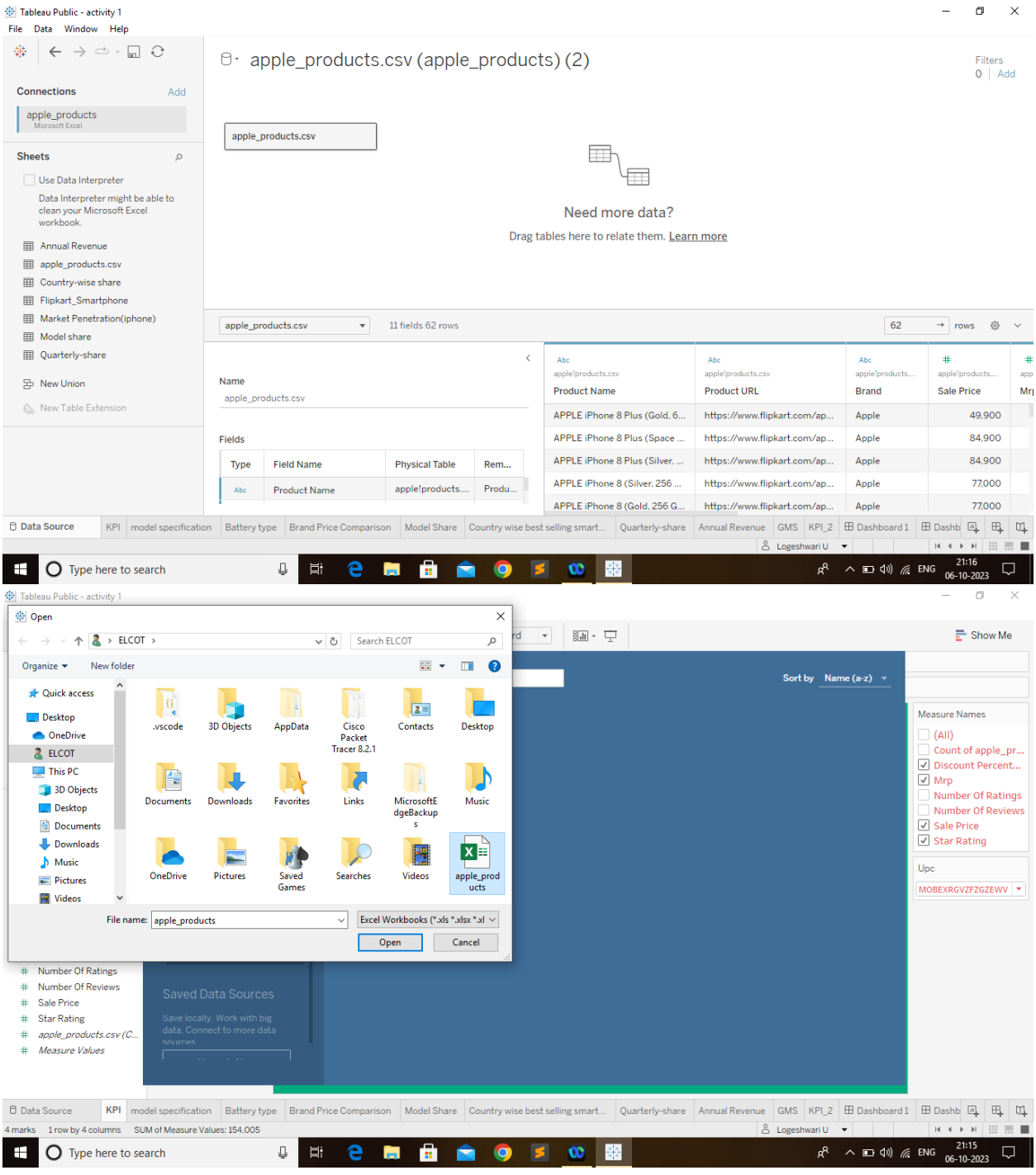
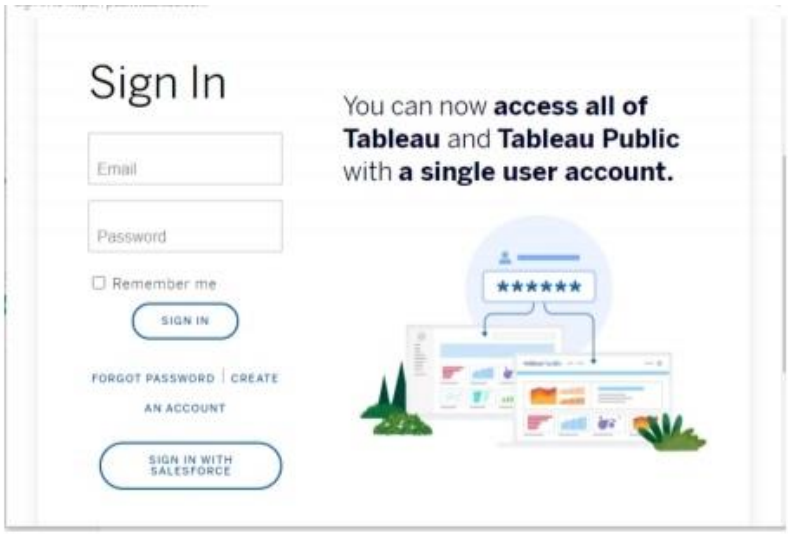


Tableau Public - activity 1
File Data Window Help
apple_products.csv (apple_products) (2)
Connections
apple_products
Sheets
Use Data Interpreter
Annual Revenue
apple_products.csv
Country-wise share
Flipkart_Smartphone
Market Penetration(iphone)
Model share
Quarterly-share
New Union
New Table Extension
Filters
0 Add
Need more data?
Drag tables here to relate them. Learn more
11 fields 62 rows
Name
Fields
Type
Field Name
Physical Table
Product Name
Product URL
Brand
Sale Price
APPLE iPhone 8 Plus (Gold, 6...
APPLE iPhone 8 Plus (Space ...
APPLE iPhone 8 Plus (Silver, ...
APPLE iPhone 8 (Silver, 256 ...
APPLE iPhone 8 (Gold, 256 G...
Data Source
KPI
model specification
Battery type
Brand Price Comparison
Model Share
Country wise best selling smart...
Quarterly-share
Annual Revenue
GMS
KPI_2
Dashboard 1
Type here to search
ENG
21:16
06-10-2023
Open
ELCOT
Search ELCOT
Organize
New folder
Quick access
Desktop
OneDrive
This PC
3D Objects
Documents
Downloads
Music
Pictures
Videos
.vscode
AppData
Cisco Packet Tracer 8.2.1
Contacts
Favorites
Links
MicrosoftEdgeBackups
Saved Games
Searches
apple_products
File name: apple_products
Excel Workbooks (*.xls *.xlsx *.xl
Open
Cancel
Show Me
Sort by Name (a-z)
Measure Names
(All)
Count of apple_pr...
Discount Percent...
Mrp
Number Of Ratings
Number Of Reviews
Sale Price
Star Rating
Upc
MOBEXRGVZFZGZEWV
Saved Data Sources
Save locally. Work with big data. Connect to more data sources
Number Of Ratings
Number Of Reviews
Sale Price
Star Rating
apple_products.csv (C...
Measure Values
4 marks
1 row by 4 columns
SUM of Measure Values: 154,005
21:15
06-10-2023

Step:2 GO to Dashboard/story, click on share button on the top ribbon

Give the server address of your tableau account and click on connect.



Sign in to your tableau public account or create a new account if you don’t have one. You can visit the tableau public website and click on the “sign in” or “join” button.

In the “tableau public sign in” window, enter your tableau public accont credentials and click “sign in”.

Next, you’ll need to proide a title and description for your workbook. Fill in the appropriate details in the provided field of workbook title.

Click on the “save” button to start the publishing process. Tableau Desktop will uploaded your workbook to tableau public.

Once the upload is complete, a browser will automatically open, displaying your published workbook on tableau public. Review the workbook to ensure that everything appears as expected.

Advantages and Dis advantages:

Advantages:

- Fast proccesers for better performance
- Apple blends hardware and software well
- Apple has always been the clear winner
- User friendly interference
- High quality display

Dis Advantages:

- Cost
- Non removable battery
- Limited customisation
- Frailty
- No Expandable Storage

Conclusion:

In this project we analysis iphone users in india in year on year.