IRevolution: A Data-Driven Exploration Of Apple's IPhone Impact In India Using Tableau

Project Description:

"iRevolution: A Data-driven Exploration of Apple's iPhone Impact in India using Tableau" is a project that aims to investigate and visualize the influence and effects of Apple's iPhone on the Indian market. Utilizing Tableau's powerful data visualization capabilities, the project explores various aspects such as market penetration, sales trends, user demographics, and the cultural impact of iPhone adoption in India. By examining data from sources like sales records, social media sentiment, and market research, the project provides valuable insights for industry stakeholders, including Apple, local competitors, and market analysts.

Scenario 1: Market Penetration and Sales Trends

The visualization tool allows users to analyze iPhone sales data over time, across different regions in India. This includes examining trends in market penetration and identifying periods of high sales. Such insights help stakeholders understand how iPhone adoption has grown and where it has been most successful.

Scenario 2: User Demographics and Preferences

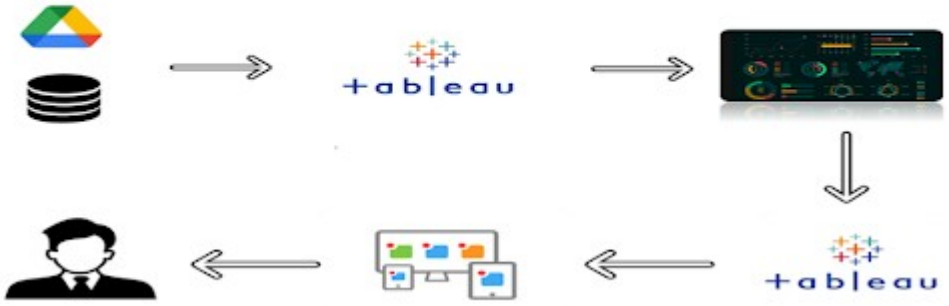
The project uses Tableau to explore the demographics of iPhone users in India, including age groups, income levels, and geographic distribution. This analysis can reveal which segments of the population are adopting iPhones and how user preferences vary across different regions, informing targeted marketing and product development strategies.

Scenario 3: Cultural and Social Media Impact

Through data visualization, the project assesses the cultural and social media impact of iPhone adoption in India. By analyzing sentiment and conversations on platforms like Twitter and Instagram, users can understand how the iPhone influences trends, lifestyles, and aspirations

within Indian society. This insight helps stakeholders gauge brand perception and its role in shaping cultural narratives.

Technical Architecture:



Project Flow:
To accomplish this, we have to complete all the activities listed below,
? Define Problem / Problem Understanding
o Specify the business problem
o Business requirements
o Literature Survey
o Social or Business Impact.
? Data Collection & Extraction from Database
o Collect the dataset,
o Storing Data in DB2
o Perform SQL Operations
o Connect DB2 with Cognos
? Data Preparation
o Prepare the Data for Visualization
? Data Visualizations
o No of Unique Visualizations
? Dashboard
o Responsive and Design of Dashboard
? Story
o No of Scenes of Story
? Report
o No of Visualization with detail information
? Performance Testing
o Amount of Data Rendered to DB2
o Utilization of Data Filters
o No of Calculation Fields

o No of Visualizations/ Graphs
? Web Integration
o Dashboard, Report and Story embed with UI With Flask
? Project Demonstration & Documentation
o Record explanation Video for project end to end solution
o Project Documentation-Step by step project development procedure

Data Collection & Extraction From Database

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

Data Preparation

This Mile stone explains about Data Preparation. Clean, transform, and organize the connected data to ensure consistency and accuracy. Create calculated fields, handle null values, and structure the data appropriately for effective visualization and insightful analysis in Tableau.

Data Visualization

Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

No Of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of a project include bar charts, line charts, heat maps, scatter plots, pie charts, Maps, etc. These visualizations can be used to compare performance, track changes over time, and show distribution, and relationships between variables.

KPI

KPI

Brand	Discount Percent..	Mrp	Star Rating	Sale Price	Sales difference
Apple	0	77,000	5	77,000	0

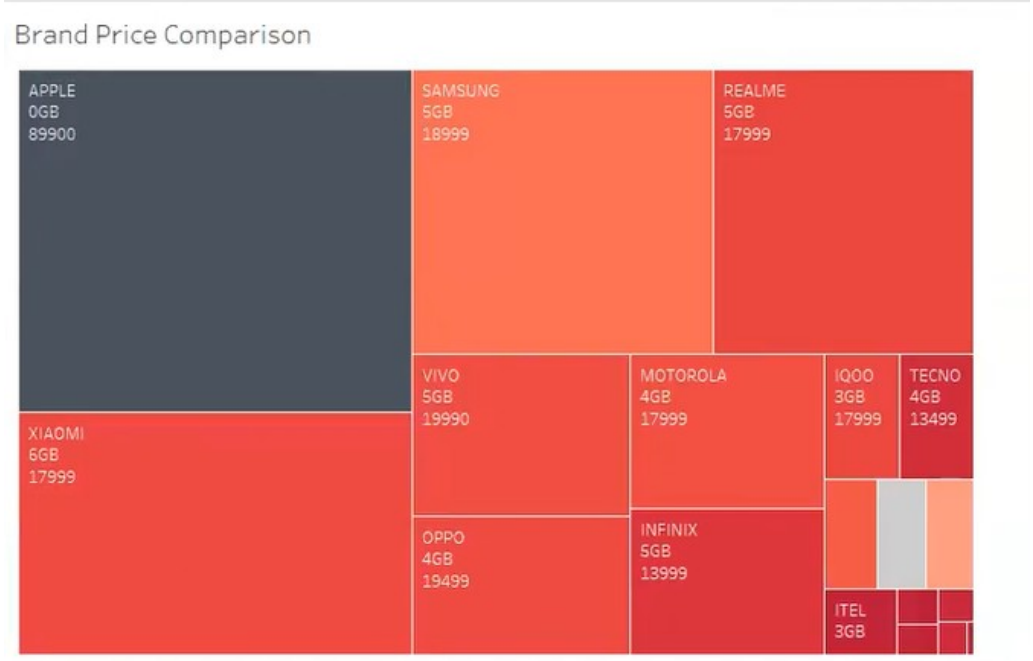
Model Specification

Sheet 2

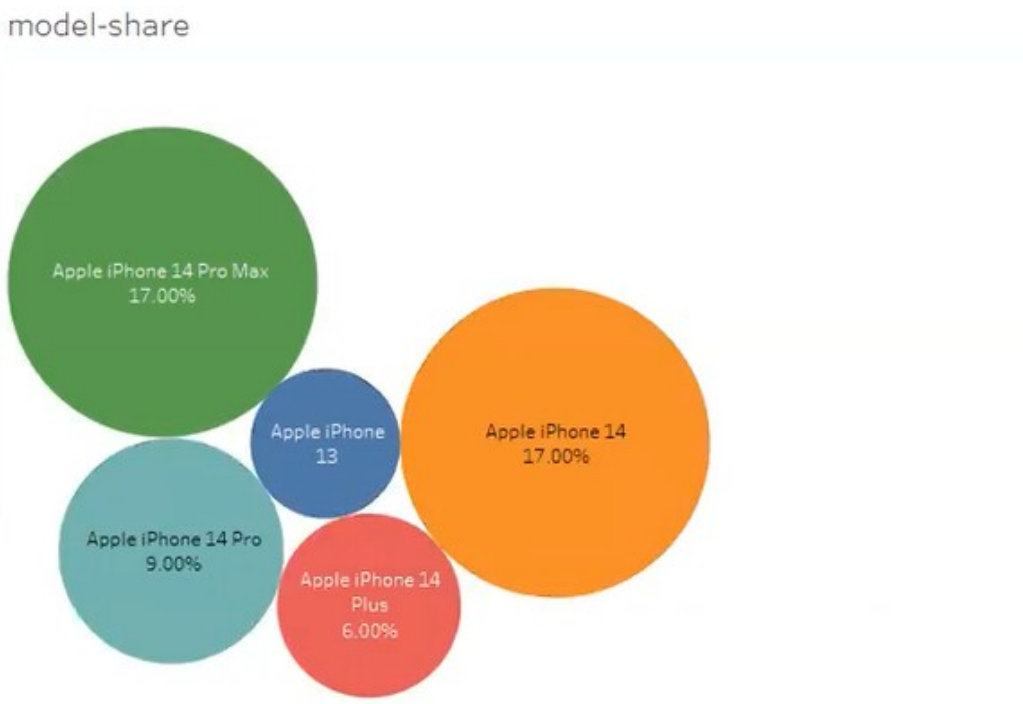
Model	Processor	Front Ca..	Rear Camera	Col..	
APPLE IPHONE 11	A Bionic Chip	12MP	12MP + 12MP	Black	92,800
APPLE IPHONE 12	A Bionic Chip with Next Generation Neural Engine	12MP	12MP + 12MP	Black	199,700
				Blue	59,900
APPLE IPHONE 12 MINI	A Bionic Chip with Next Generation Neural Engine	12MP	12MP + 12MP	Blue	74,900
				Black	74,900
APPLE IPHONE 13	A Bionic Chip	12MP	12MP + 12MP	Blue	149,800
APPLE IPHONE 14	A Bionic Chip, Core	12MP	12MP + 12MP	Blue	189,800
APPLE IPHONE 14 PLUS	A Bionic Chip, Core	12MP	12MP + 12MP	Blue	99,900

Bar Chart showing Battery-Type

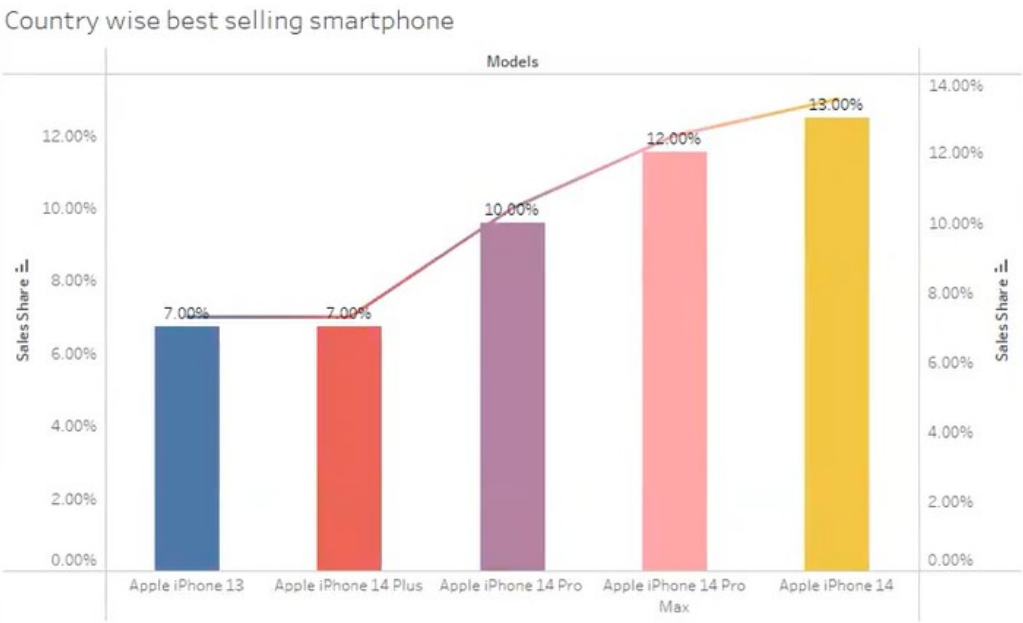
Treemap showing Brand- Price Comparison



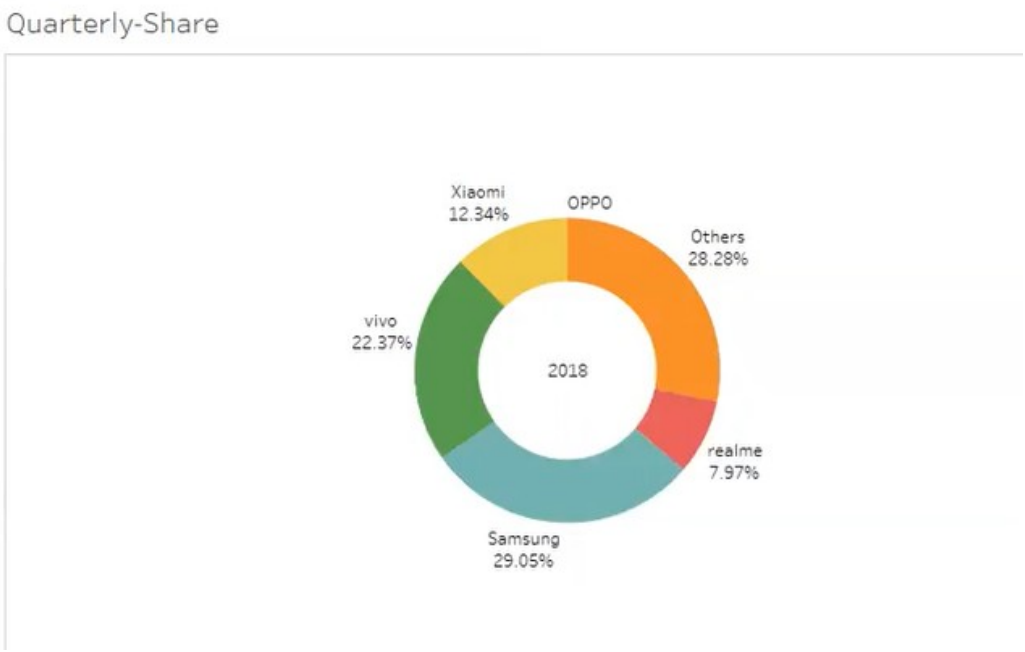
Bubble Chart showing Model- Wise Share of iPhone



Lined Bar-Chart showing Country-Wise Best Selling Smartphone



Donut Chart for Quarterly Share



Line Chart for Annual Revenue Year-Wise

Map Showing Global Market Share

indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

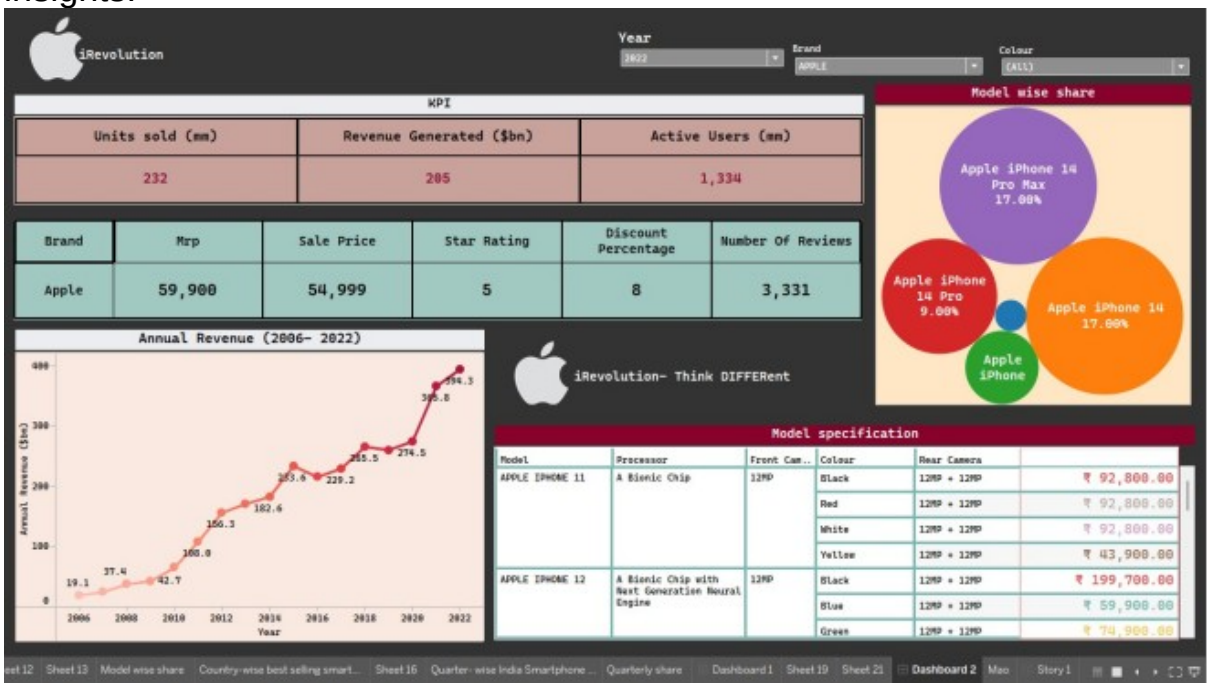
Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance

Responsive And Design Of Dashboard

The responsiveness and design of a dashboard for Data-Driven insights on iRevolution: A Data-driven Exploration of Apple's iPhone Impact in India is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, a data-driven approach,

accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights.



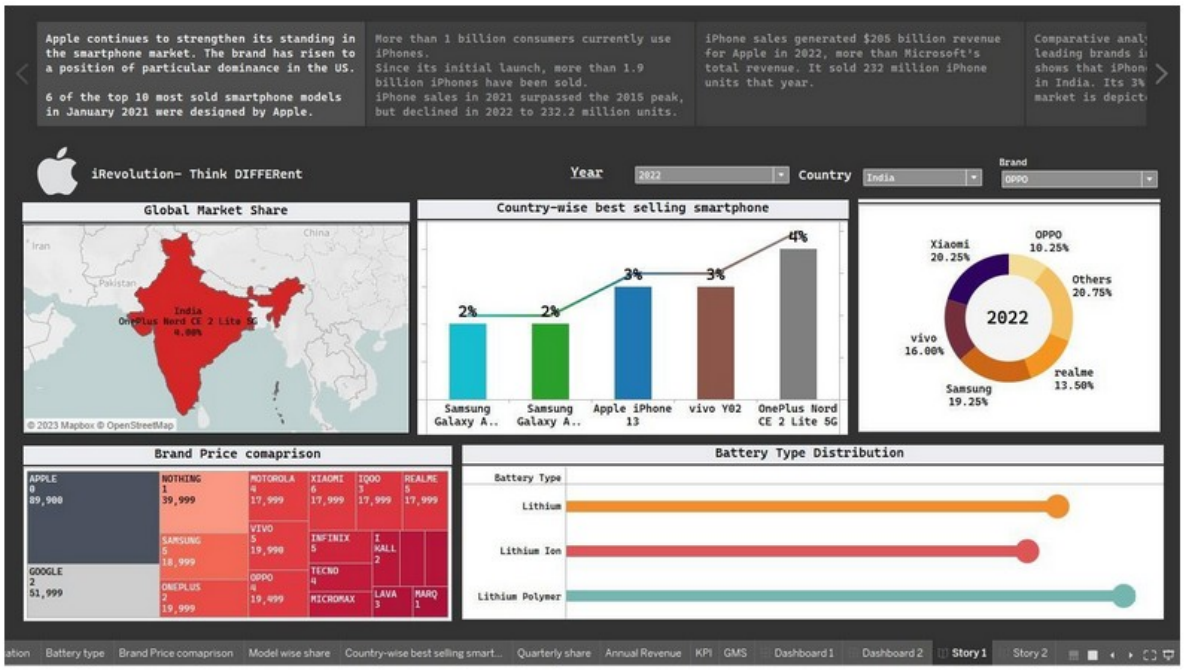
Story

A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key ?ndings and highlights their implications. Data

stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

No Of Scenes Of Story

The number of scenes in a storyboard for iRevolution will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.



Performance Testing

Performance testing involves assessing the volume of data rendered from the database, the impact of data filters on system responsiveness, and the complexity introduced by the number of visualizations. Optimizing these factors ensures the dashboard operates efficiently, providing timely and reliable insights.

Amount Of Data Rendered To Tableau

Monitor the volume of data being pulled and rendered from the database to ensure queries are optimized and not overloading the system.The amount of data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data.

Utilization Of Filters

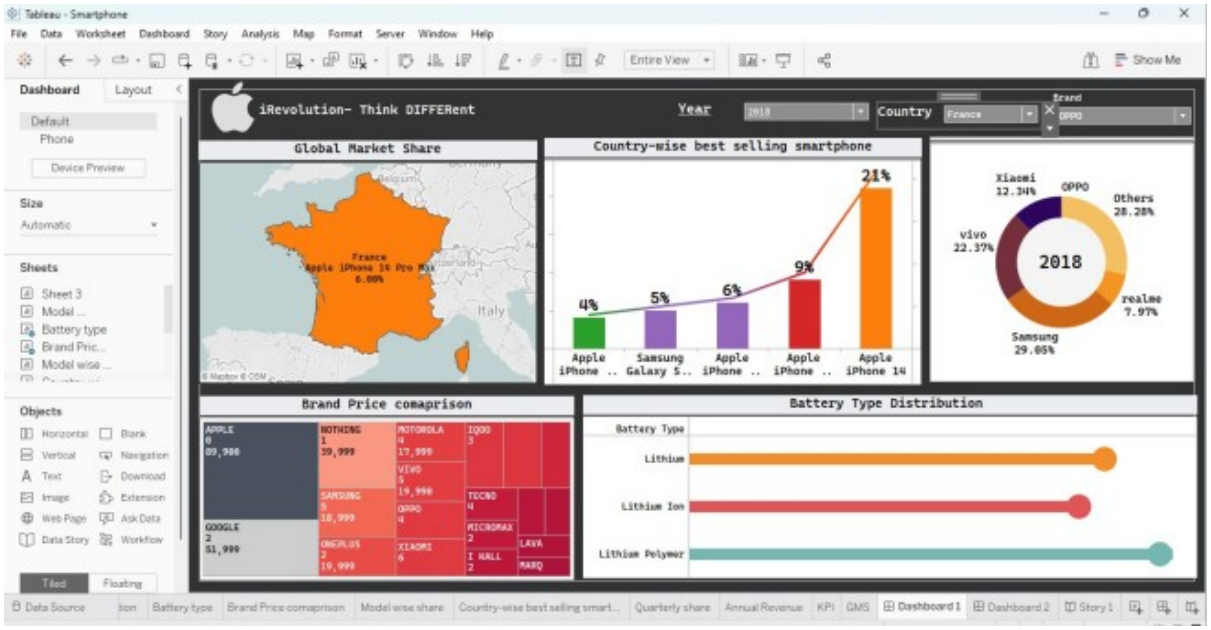
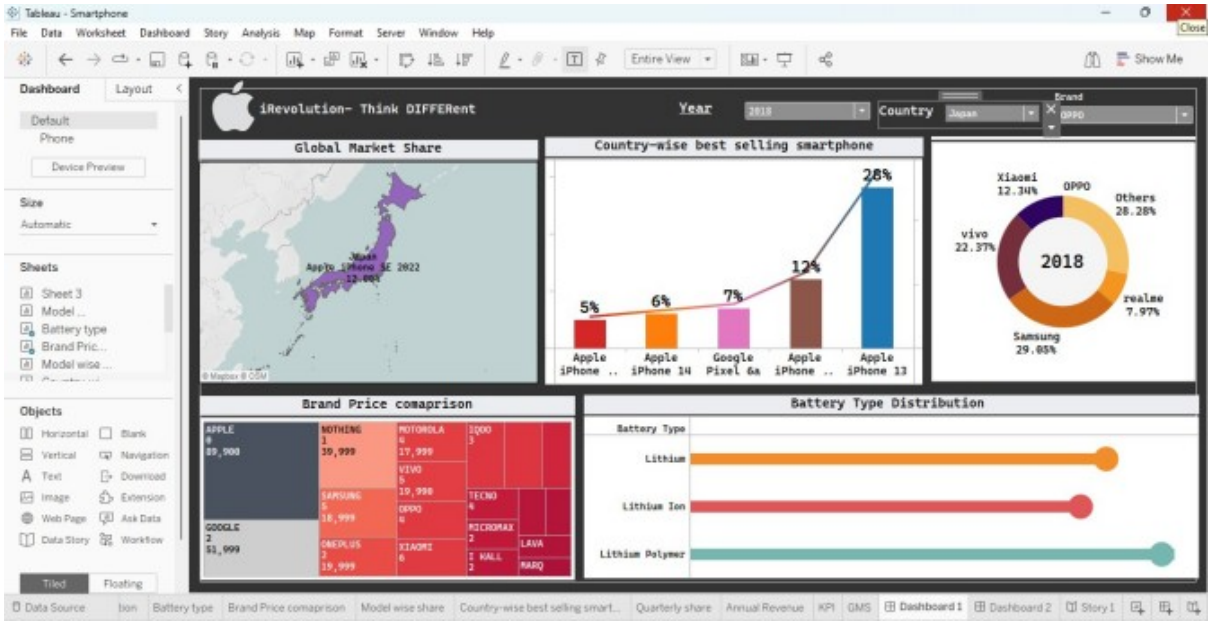


Tableau - Smartphone
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Dashboard Layout
iRevolution- Think DIFFERent
Year
Country
France
Global Market Share
Country-wise best selling smartphone
4%
5%
6%
9%
21%
Apple iPhone ..
Samsung Galaxy S..
Apple iPhone ..
Apple iPhone ..
Apple iPhone 14
Xiaomi 12.34%
OPPO
Others 28.28%
vivo 22.37%
2018
realme 7.97%
Samsung 29.05%
Brand Price comaprison
Battery Type Distribution
Battery Type
Lithium
Lithium Ion
Lithium Polymer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Apple iPhone 14
Google Pixel 6a
Apple iPhone ..
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OPPO
Others 28.28%
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2018
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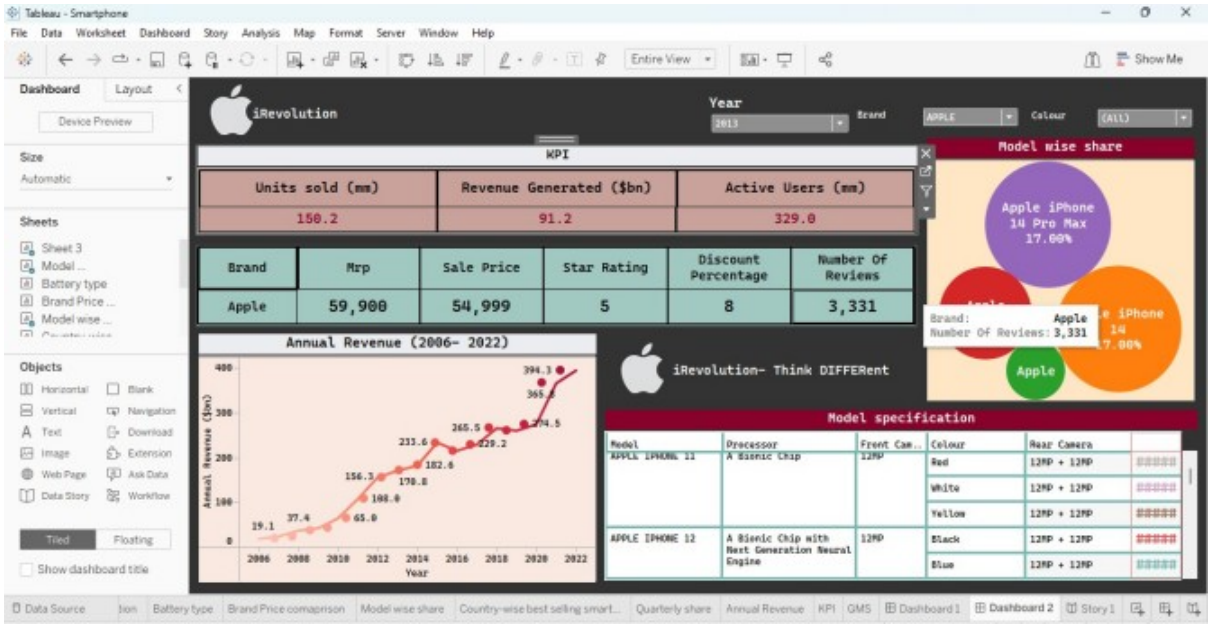
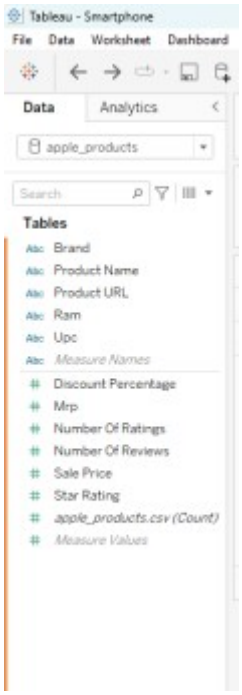


No Of Calculation Fields

A **calculated field** is like making your **own custom column** in Tableau. Instead of only using the dataset values as they are, you can create **new values** using formulas.

Step-by-Step:

1. **Open Tableau** and connect your dataset.
2. In the **Data pane** (left side where all fields are listed), **Right-click** ? choose **Create Calculated Field**.

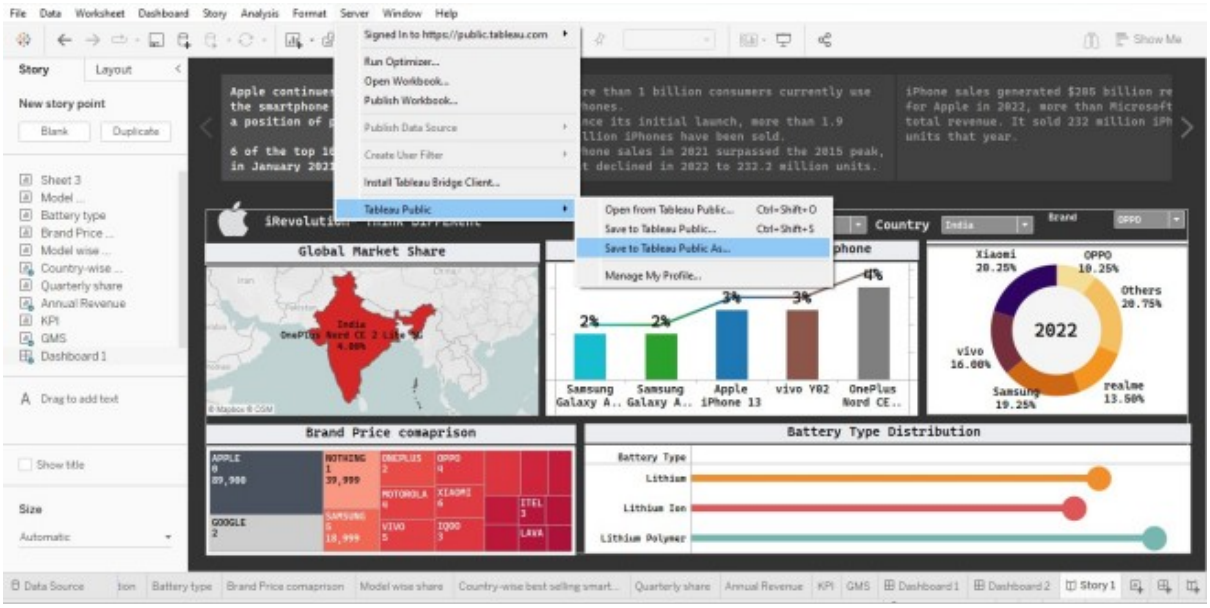


No Of Visualizations/ Graphs

- KPI
- Model Speci?cation
- Model- Wise share
- Battery-Type distribution
- Brand- Price Comparison
- Model- Wise Share of iPhone
- Country-Wise Best-Selling Smartphone
- Annual Revenue Year-Wise
- Global Market Share

Web Integration

- Web integration of a Tableau Dashboard Story involves embedding interactive visualizations into a website or web application. This allows users to explore data insights directly within a web interface, enhancing accessibility and engagement. It supports real-time updates, user filtering, and seamless navigation for a dynamic data storytelling experience.



public.tableau.com/app/profile/kamya.paliwal/viz/iRevolutionApplesiPhoneImpactinIndia/Story1?publish=yes
The New Chart Types pilot featuring Sankey and Radial charts is ending soon on June 30. If you participated in the pilot, tell us what you think! Share your feedback
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Apple continues to strengthen its standing in the smartphone market. The brand has risen to a position of particular dominance in the US.
6 of the top 10 most sold smartphone models in January 2021 were designed by Apple.
More than 1 billion consumers currently use iPhones.
Since its initial launch, more than 1.9 billion iPhones have been sold.
iPhone sales in 2021 surpassed the 2015 peak, but declined in 2022 to 232.2 million units.
iPhone sales generated $205 billion revenue for Apple in 2022, more than Microsoft's total revenue. It sold 232 million iPhone units that year.
Comparative a leading brand shows that iP in India. Its market is dep
iRevolution- Think DIFFERent
Year
2022
Country
India
Brand
OPPO
Global Market Share
Country-wise best selling smartphone
Samsung Galaxy A0..
Samsung Galaxy A1..
Apple iPhone 13
vivo Y02
OnePlus Nord CE ..
Xiaomi 20.25%
Others 20.75%
vivo 16.00%
Samsung 19.25%
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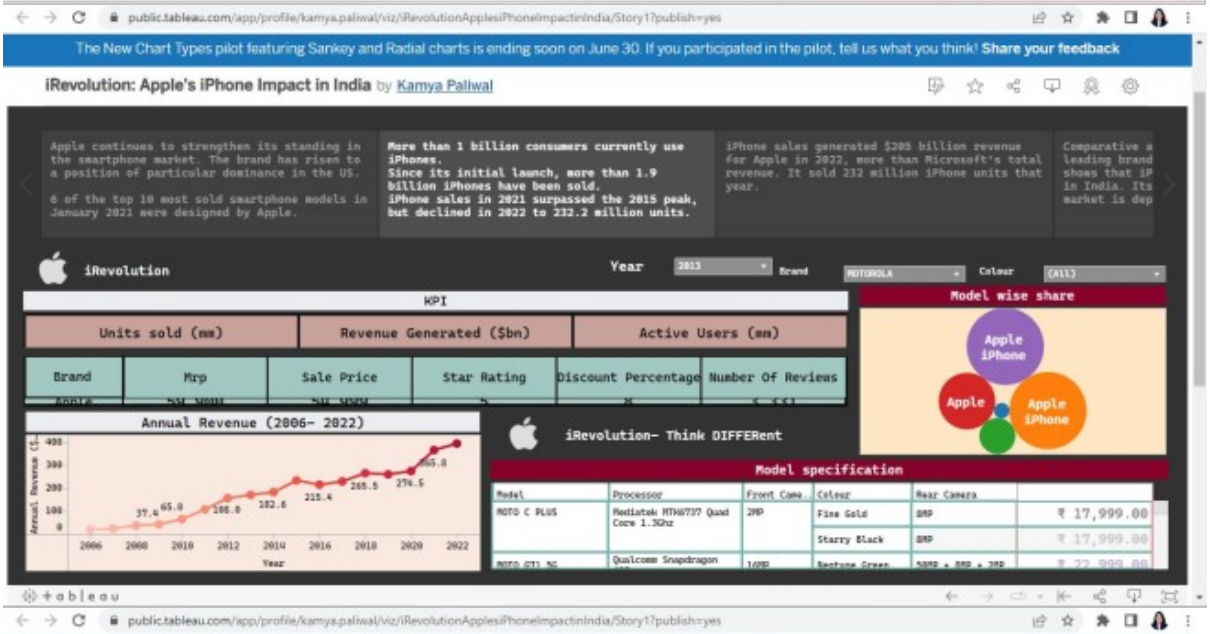
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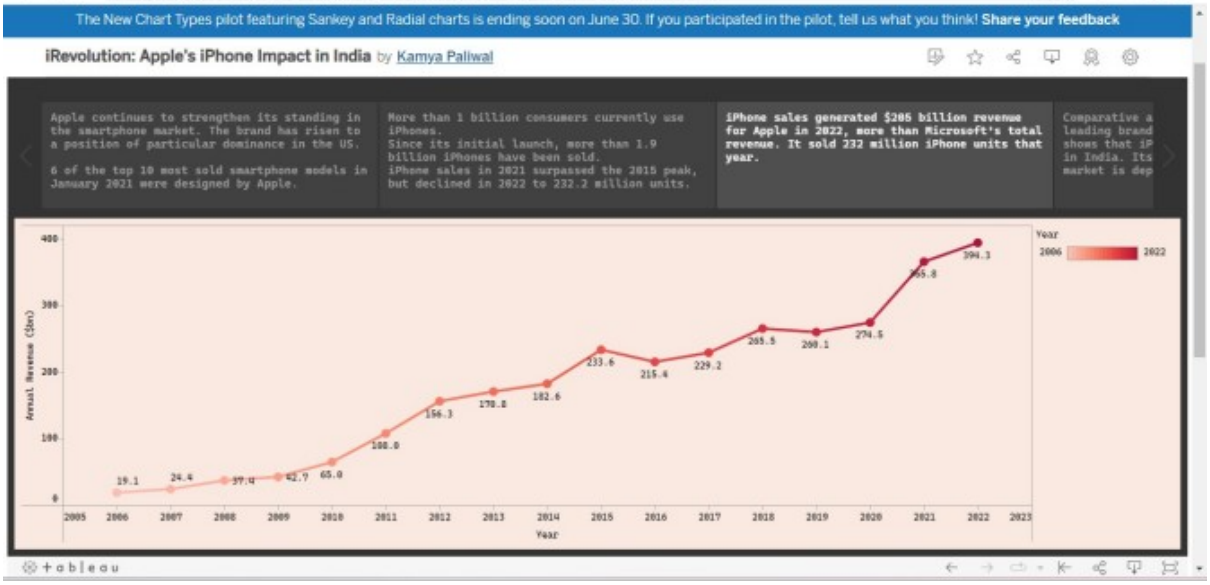
iRevolution
Year
2013
Brand
MOTOROLA
Colour
(All)
KPI
Units sold (mn)
Revenue Generated ($bn)
Active Users (mn)
Brand
Mrp
Sale Price
Star Rating
Discount Percentage
Number Of Reviews
Model wise share
Apple iPhone
Apple
Apple iPhone
Annual Revenue (2006- 2022)
Annual Revenue ($)
Year
iRevolution- Think DIFFERent
Model specification
Model
Processor
Front Came..
Colour
Rear Camera
MOTO C PLUS
Mediatek MTH6737 Quad Core 1.3Ghz
2MP
Fine Gold
8MP
₹ 17,999.00
Starry Black
8MP
₹ 17,999.00
+ableau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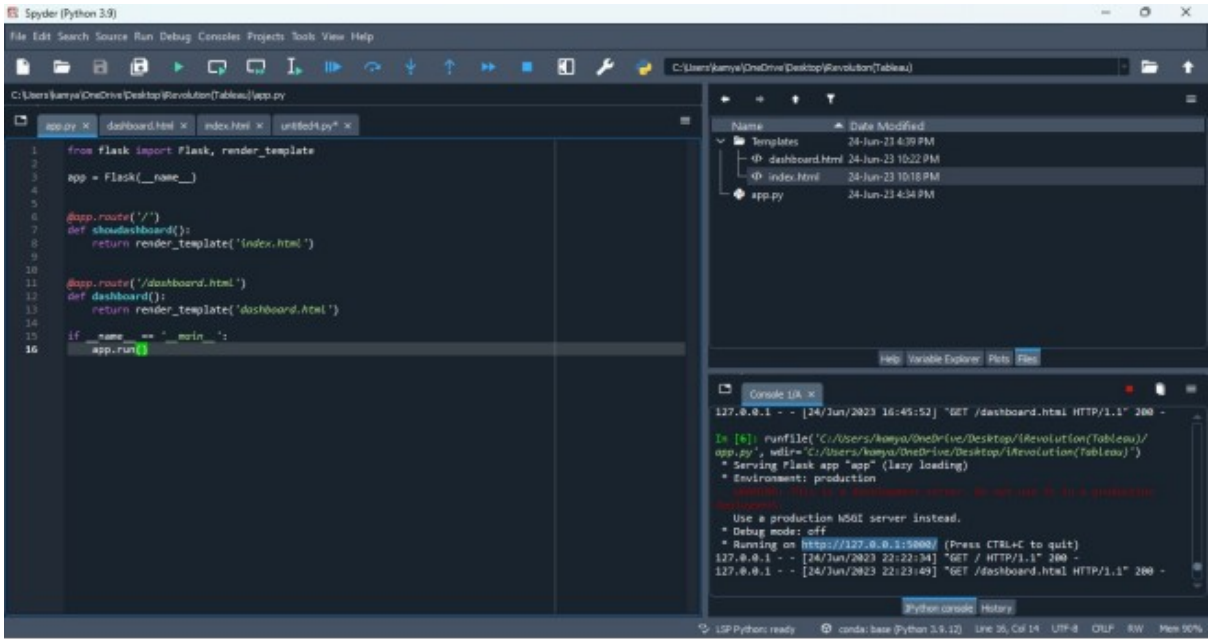
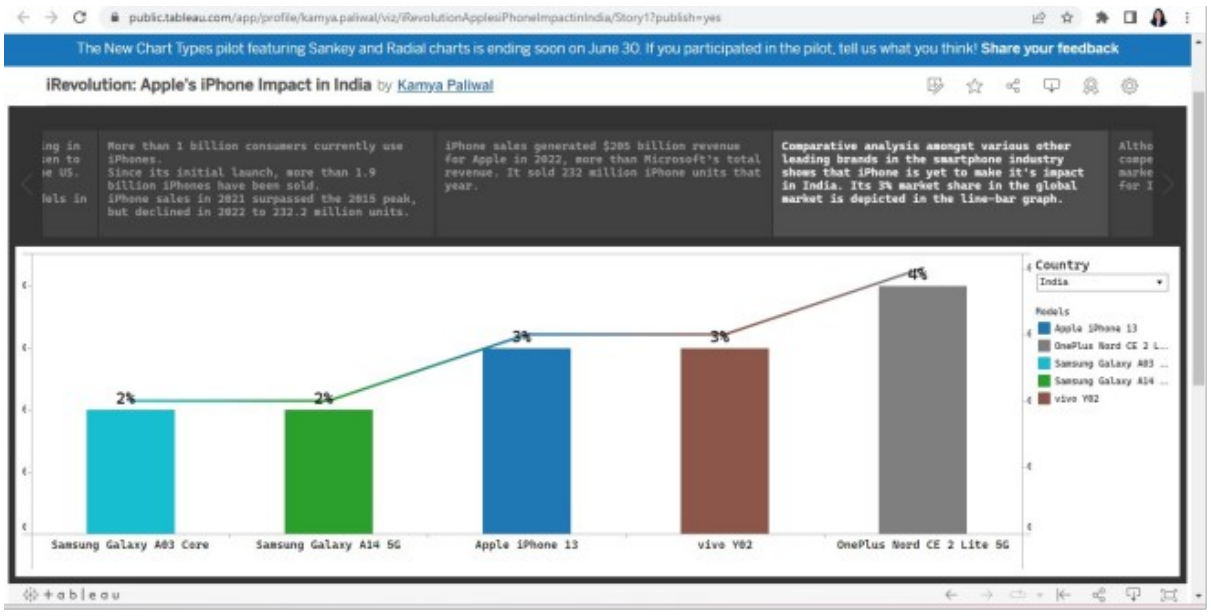
Annual Revenue ($bn)
Year
2006
2022
19.1
24.4
37.4
42.7
65.0
108.0
156.3
170.8
182.6
233.6
215.4
229.2
265.5
260.1
274.5
265.8
394.3
+ableau

- 
Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
app.py
dashboard.html
index.html
from flask import Flask, render_template
app = Flask(__name__)
@app.route('/')
def showdashboard():
return render_template('index.html')
@app.route('/dashboard.html')
def dashboard():
return render_template('dashboard.html')
if __name__ == '__main__':
app.run()
Name
Date Modified
Templates
24-Jun-23 4:39 PM
dashboard.html 24-Jun-23 10:22 PM
index.html 24-Jun-23 10:18 PM
app.py 24-Jun-23 4:34 PM
Console 1/A
127.0.0.1 - - [24/Jun/2023 16:45:52] "GET /dashboard.html HTTP/1.1" 200 -
* Serving Flask app "app" (lazy loading)
* Environment: production
Use a production WSGI server instead.
* Debug mode: off
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [24/Jun/2023 22:22:34] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [24/Jun/2023 22:23:49] "GET /dashboard.html HTTP/1.1" 200 -
-
- 
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Comparative analysis amongst various other leading brands in the smartphone industry shows that iPhone is yet to make it's impact in India. Its 3% market share in the global market is depicted in the line-bar graph.
2%
2%
3%
3%
4%
Country
India
Models
Apple iPhone 13
OnePlus Nord CE 2 L...
Samsung Galaxy A03 ...
Samsung Galaxy A14 ...
vivo Y02
Samsung Galaxy A03 Core
Samsung Galaxy A14 5G
Apple iPhone 13
vivo Y02
OnePlus Nord CE 2 Lite 5G
+ableau
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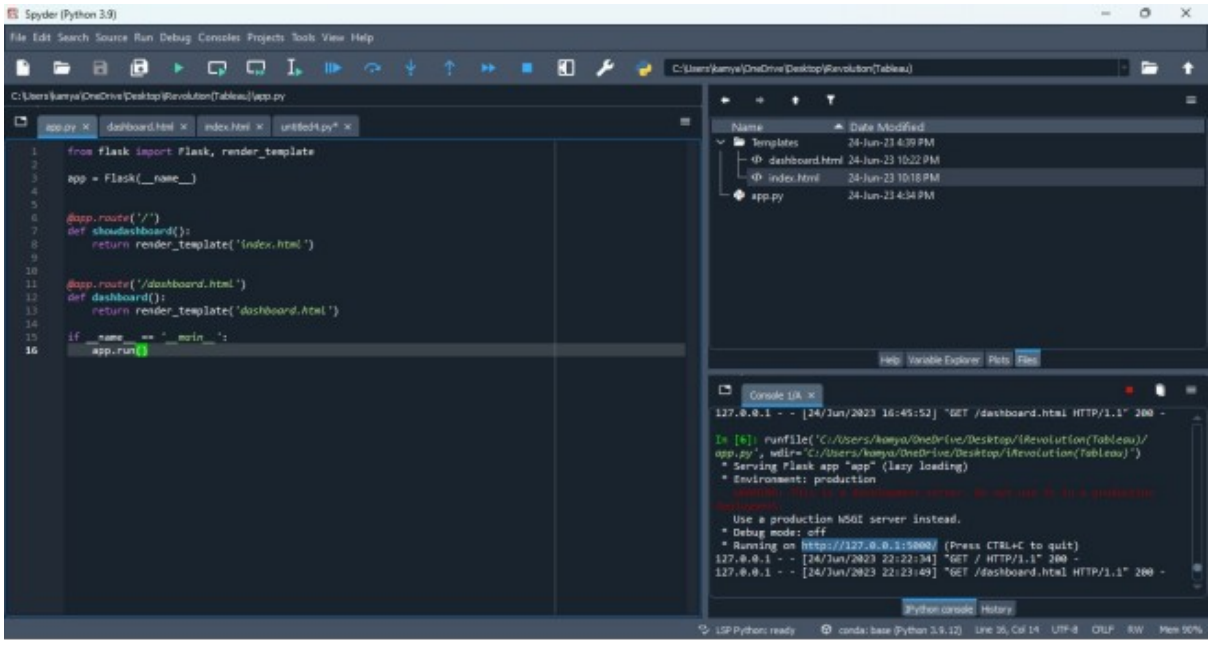
- Flask Integration



Dashboard, Report And Story Embed With UI With Flask

Steps to Integrate BootstrapMade Template + Tableau in Flask

- **Download Template**
  - Go to BootstrapMade Free Templates.
  - Download a free template (e.g., *Arsha*).
  - Extract the .zip file.
- **Organize Flask Project**
  - **Create folder tableau_flask/.**
  - **Inside it, create:**
  - **tableau_flask/**

??? app.py

??? templates/

??? static/

- **Copy files:**
  - index.html ? into templates/
  - assets/, css/, js/, img/ ? into static/
- **Fix File Paths**
  - Open index.html.
  - Wherever you find assets/, replace it with static/.
  - Example:

<link href="assets/css/style.css" rel="stylesheet">

- becomes

<link href="static/assets/css/style.css" rel="stylesheet">

- Do the same for CSS, JS, and images.
- **Embed Tableau Dashboard**
  - In index.html, locate a main section (like <section id="hero">).
- **Replace/add:**

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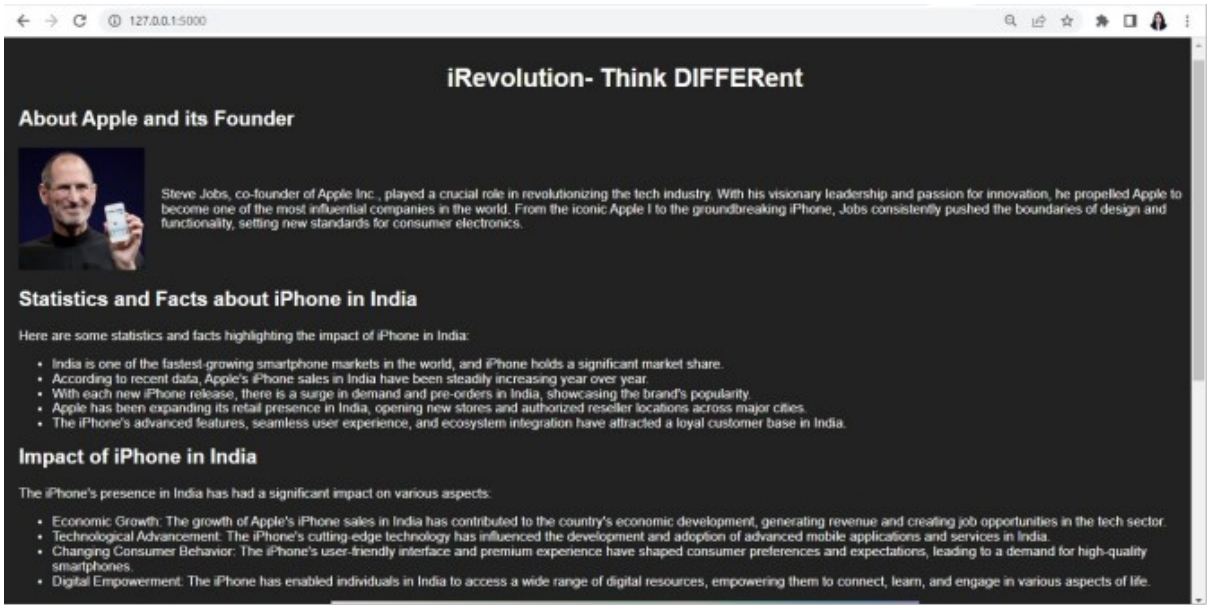

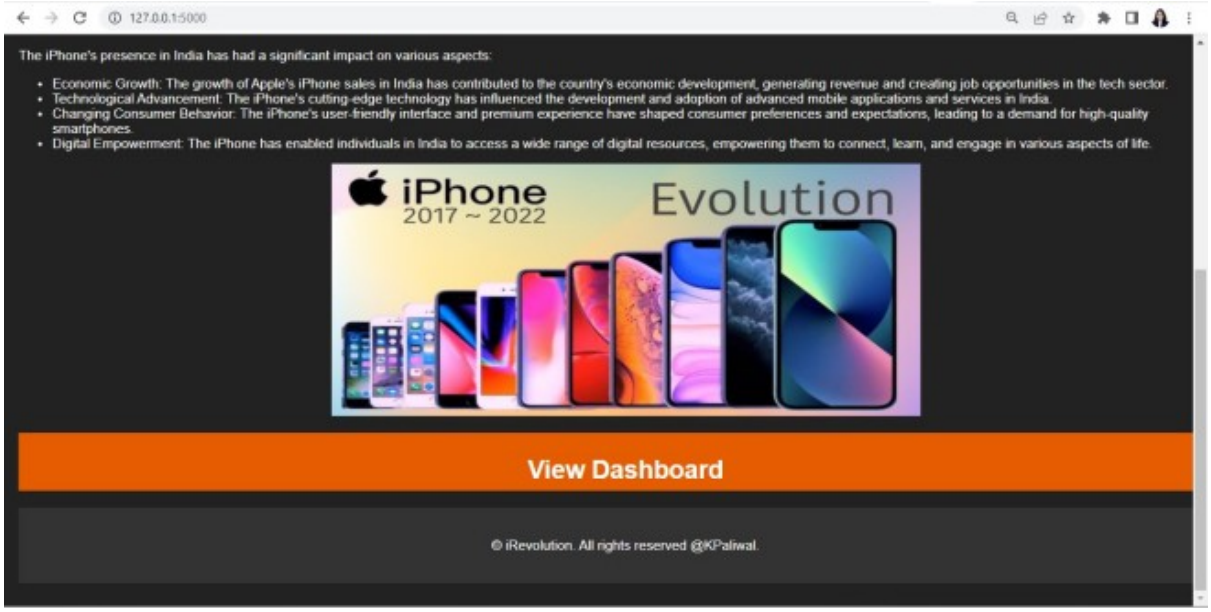

Project Demonstration & Documentation

Project Demonstration & Documentation involves presenting the project's functionality, features, and outcomes while providing clear written records, diagrams, and explanations to ensure understanding, usability, and reproducibility for stakeholders and future reference.

Record Explanation Video For Project End To End Solution

Record a 5–7 minute screen-share video explaining the project end-to-end. Introduce your/team name, state the problem statement, highlight preprocessing steps, demonstrate Tableau dashboards, present the story, and showcase key insights clearly.

Project Documentation-Step By Step Project Development Procedure

Students have to write the project work step by step – starting from the problem, collecting data, cleaning it, making visuals/dashboards, finding results, and writing everything clearly in the document. Create document as per the template provided