APPLE vs. SAMSUNG:

Comparing U.S. Sales

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Introduction & Problem Statement

Project Background & Context

- Two most popular brands.
- Iconic rivalry.
- Competition drives innovation.

Apple

SAMSUNG

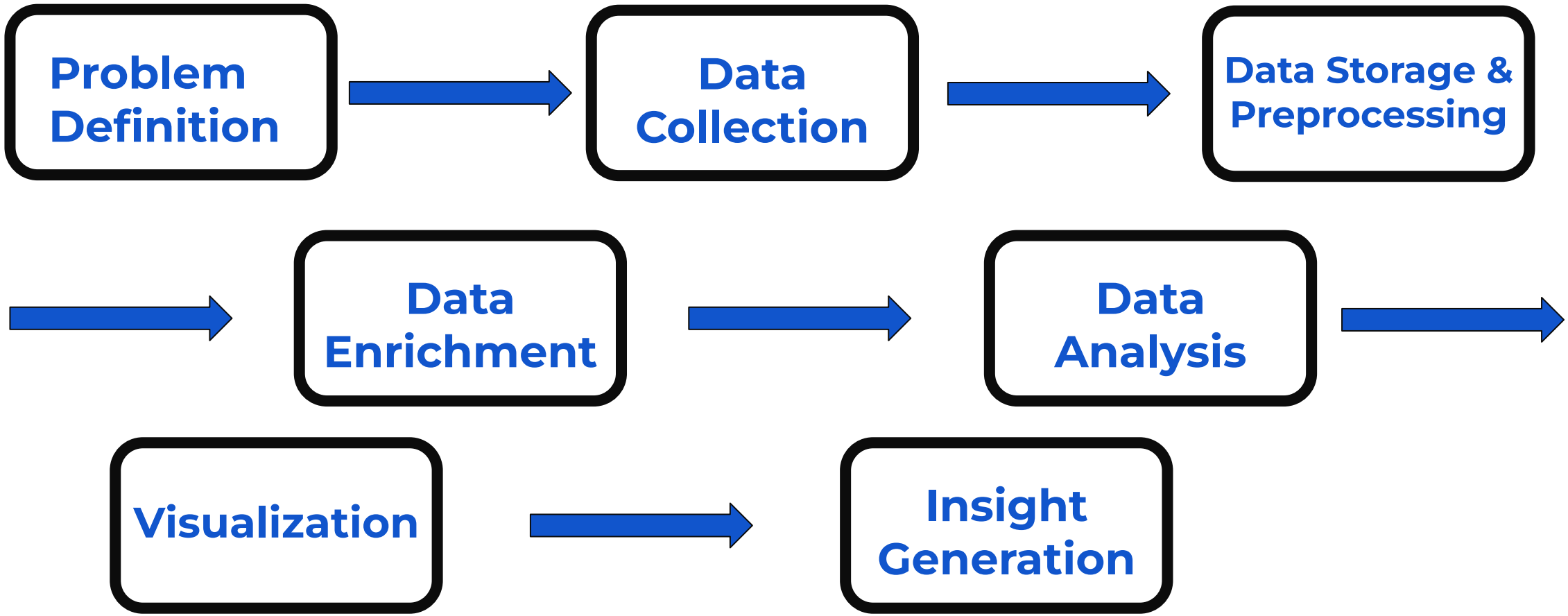
Questions to Find Answers to

- Who is more successful?
- How do sales compare quarterly?
- Seasonal Trends/External Factors

02

Method & Process

Our Approach: Transforming Smartphone Sales Data into Clear Insights



Methodology

Data Collection
Sourced quarterly U.S. smartphone sales from Counterpoint Research

Data Cleaning
Standardized model names, sales units, and date formats using Python (Pandas).

Data Enrichment
Added context like launch dates, pricing tiers, and product categories.

Exploratory Analysis
Analyzed trends, seasonal spikes, and brand performance using Python and SQL.

Visualization
Created interactive comparisons with Tableau for clear stakeholder insights.

Insight Generation
Extracted key takeaways tailored for executives, investors, and consumers.

03

Dataset

Data Collection

The data was collected using web scraping and automation techniques:

- Data collection was performed using Selenium to simulate a browser and load a JavaScript rendered html from the Counterpoint Research website
- A headless Chrome browser was used to access the site within a Google colab notebook, as data tables are not accessible by static requests
- BeautifulSoup was then used to parse the rendered HTML and locate the relevant tables containing quarterly U.S. smartphone market share percentages.
- We then filtered the tables to include only the Apple and Samsung rows and extracted their market share data to allow for a more direct comparison.

Data Collection: Counterpoint Research

```
# Install Chrome, ChromeDriver, and Selenium
!apt-get update
!apt install -y chromium-chromedriver
!cp /usr/lib/chromium-browser/chromedriver /usr/bin
!pip install selenium

from selenium import webdriver
from selenium.webdriver.chrome.options import Options
from selenium.webdriver.chrome.service import Service
from bs4 import BeautifulSoup
import pandas as pd
import time

# Setup headless Chrome for Colab
chrome_options = Options()
chrome_options.add_argument("--headless")
chrome_options.add_argument("--no-sandbox")
chrome_options.add_argument("--disable-dev-shm-usage")

driver = webdriver.Chrome(options=chrome_options)

# Load the page
url = "https://www.counterpointresearch.com/insights/us-smartphone-market-share/"
driver.get(url)
time.sleep(5)  # give time for JavaScript to load

# Parse the rendered HTML
soup = BeautifulSoup(driver.page_source, 'html.parser')
tables = soup.find_all('table')

apple_samsung_tables = []
```

```
# Search for relevant data
for table in tables:
    rows = table.find_all('tr')
    headers = [th.text.strip() for th in rows[0].find_all(['th', 'td'])]

    if 'Brands' not in headers[0] or len(headers) < 3:
        continue

    data = []
    for row in rows[1:]:
        cells = [td.text.strip() for td in row.find_all('td')]
        if not cells:
            continue
        if cells[0] in ['Apple', 'Samsung']:
            data.append([cells[0]] + [cell.replace('%','') for cell in cells[1:]])


    if data:
        df = pd.DataFrame(data, columns=headers)
        df.set_index('Brands', inplace=True)
        df = df.transpose()
        df.reset_index(inplace=True)
        df.rename(columns={'index': 'Quarter'}, inplace=True)
        apple_samsung_tables.append(df)

driver.quit()

# Combine and show final data
final_df = pd.concat(apple_samsung_tables).drop_duplicates(subset='Quarter').reset_index(drop=True)
final_df.columns.name = None
final_df[['Apple', 'Samsung']] = final_df[['Apple', 'Samsung']].apply(pd.to_numeric)
print("Apple and Samsung Market Share Data:")
print(final_df)
```

The link to the notebook is : https://github.com/datasheng/csc46000-sp25-team-cyber/blob/6bb1eb66470403219a7cd4c885d340960a4b96be/ProjectPitch.ipynb

04

BUSINESS INTELLIGENCE

Dashboard

Important Information to Display:

- Sales over time
- Sales each quarter of the year
- Sales in each region

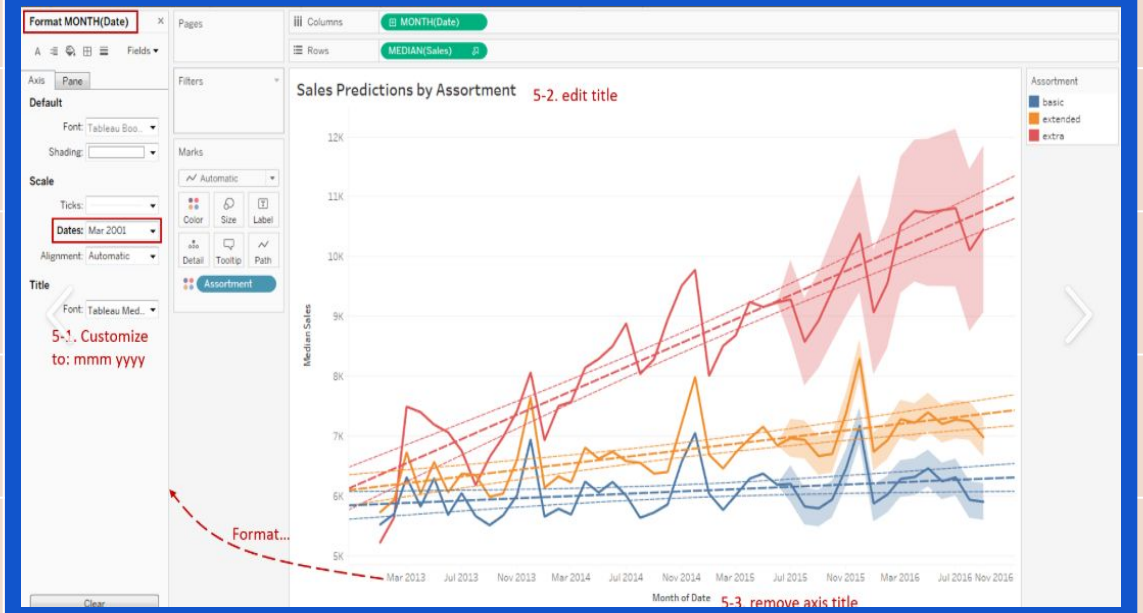
Displaying Sales

Comparing sales over time:

We will use the line chart visualization in Tableau.

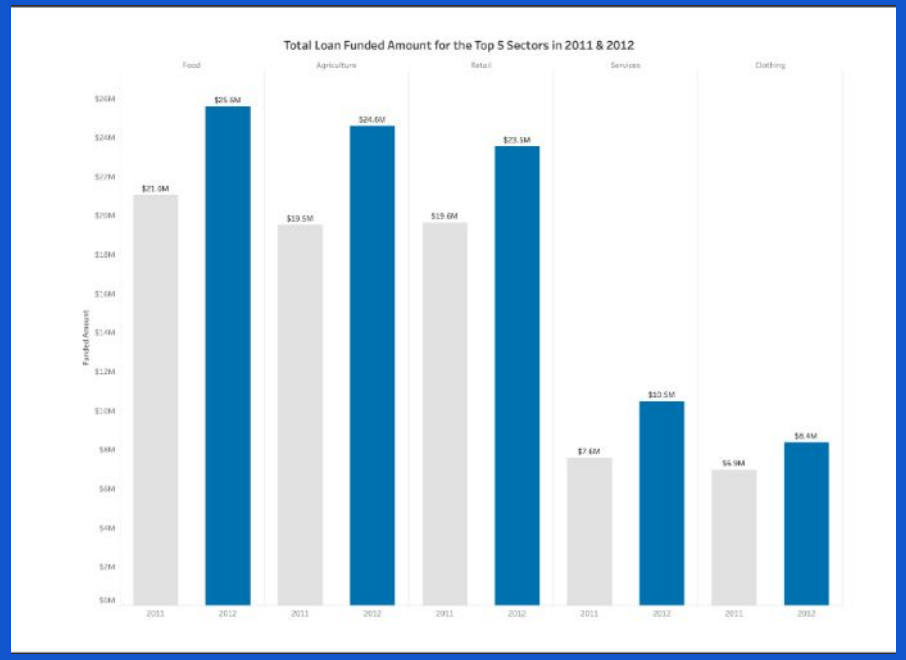
- Apple iPhone line chart sales
- Samsung Galaxy phone sales

We can display total sales in each quarter individually.

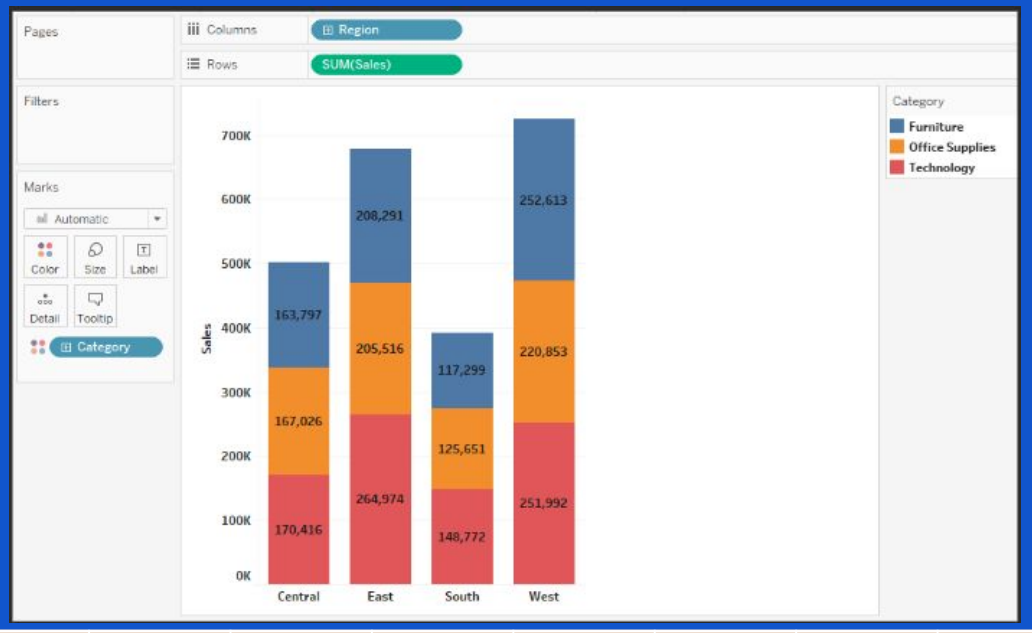


Displaying Sales

Bar Chart: We want to know the sales in each region in the USA.



A Stacked Bar Chart can provide more information and insight about the iphones and samsung galaxy phones.



Additional Features

With additional free time we can add:

- A map to select regions
- Demographic of users

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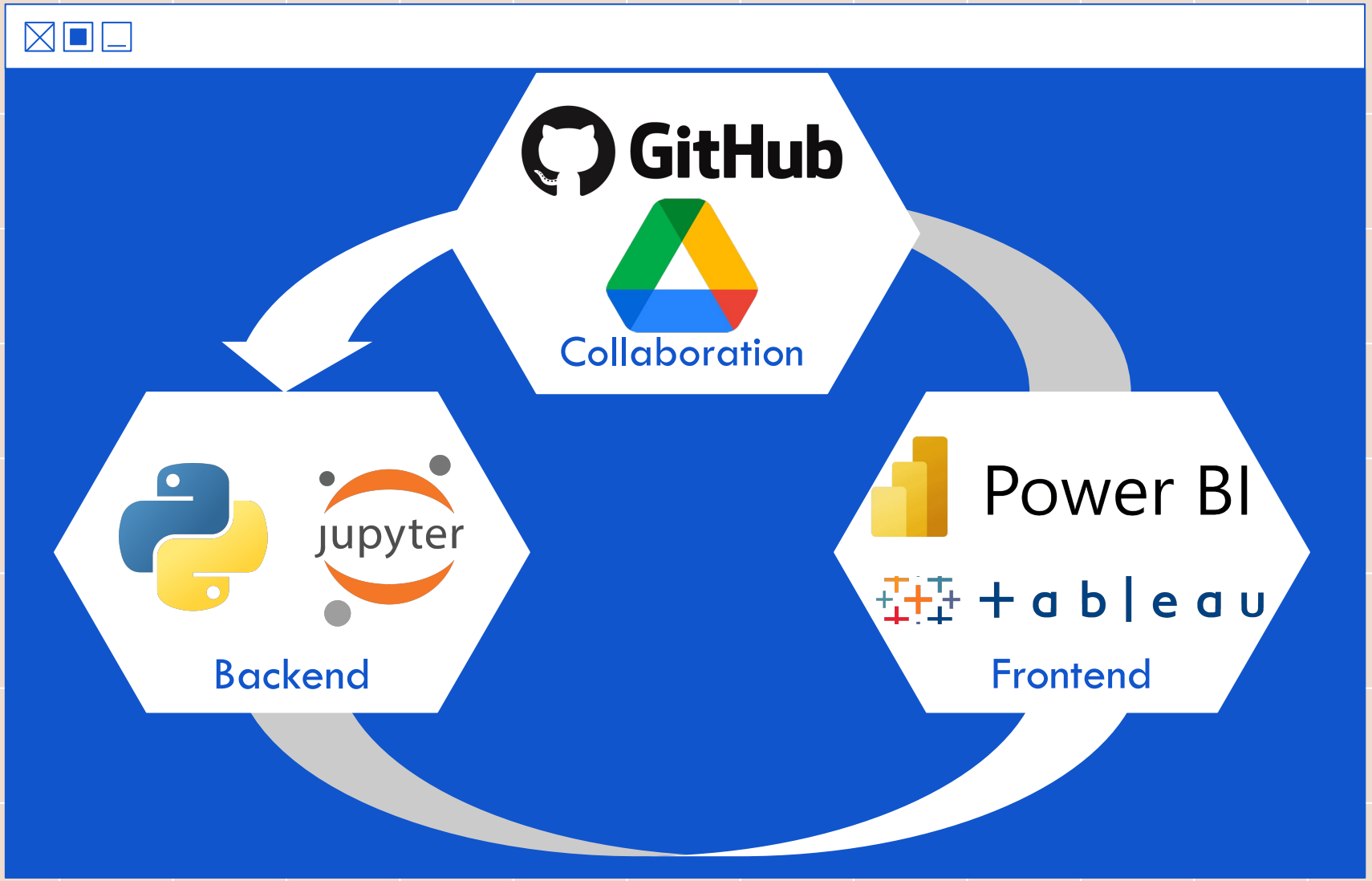
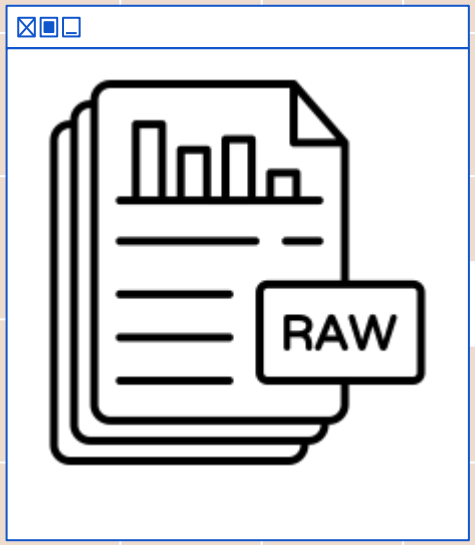
APPLICATION STACK

Tools and Technologies Used for Analysis & Visualization



Work Flow



Power BI

+ableau

Raw sales data

Data Cleaning

Data Visualization

Insights & Decision-Making

Team Member Roles

Kenny Zhu – Introduction & Problem Statement

Aila Choudhary – Dataset & Methodology Analysis

Joshua Jimenez – Data Collection & Preprocessing

Misael Perez – Business Intelligence & Insights

Minsu Kim– Application Stack & Technical Implementation

Q&A