

Week 1 (Day 1)



Introduction to Data Analytics, Python Programming, and GitHub Copilot

**"Unlock the Power of Data:
Your Journey into Analytics
and AI Begins Today!"**



About the Trainer



Mohammad Idrees Bhat

- 4+ years in Professional Tech Skills training
- Sessions in various universities across India
- BTech ECE, CS Masters
- AI/ML Consultant
- Intel Certified Edge AI Developer
- Google Certification for UX design

**What's one thing you use data for
in your daily life?
(even if you don't realize it)?**

Skills Covered:

- Importance, applications, and bootcamp structure.
- Python Programming Basics: Data types, variables, basic operations.
- Control Structures in Python: Loops and conditionals.
- Data Analysis with Python: NumPy and Pandas for data manipulation.
- Using GitHub Copilot: Setup, review, and practice using GitHub Copilot.

Objectives for today:

1. How Data Driven Business Works
2. Introduction to Data Analytics
3. Data Analytics: Importance and Applications
4. Setting up Python environment
5. Introduction to Python Programming Language
6. Hands-on Python

Learning Outcomes:

- Understand the role and benefits of data-driven strategies in modern businesses.
- Grasp the core concepts and methodologies of data analytics.
- Recognize the transformative impact of data analytics across various industries.
- Install and configure a Python environment for development and analysis.
- Learn the basic syntax and structure of Python programming

The Superstore's Data-Driven Journey to Reviving Sales

In a bustling city, a well-known superstore, "CityMart," is facing a worrying trend: *sales have been declining* for the past six months.

The store's leadership team is concerned.

They assemble a **specialised data team** to uncover the cause and find a solution.

Problem: The superstore needs to *understand why sales are dropping* and how to reverse the trend to maintain its competitive edge.



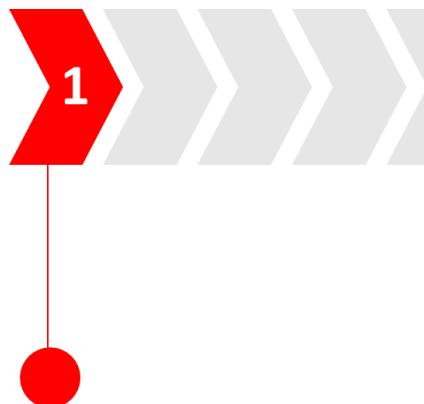
Data Driven Decision Making

Step 1: Introducing the Team

Step 2: Investigation

Step 3: The Revelation

Step 4: The Resolution



Step 1: Introducing the Team

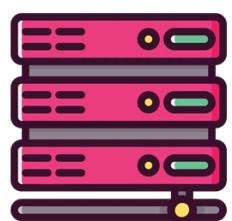
Data Collection and Preparation



SUPERSTORE



SALES



DATABASE

Data Engineers:

- The story begins with the data engineers the unsung heroes working behind the scenes.
- They build robust data pipelines that extract massive amounts of data from CityMart's sales transactions, customer interactions, and website logs.

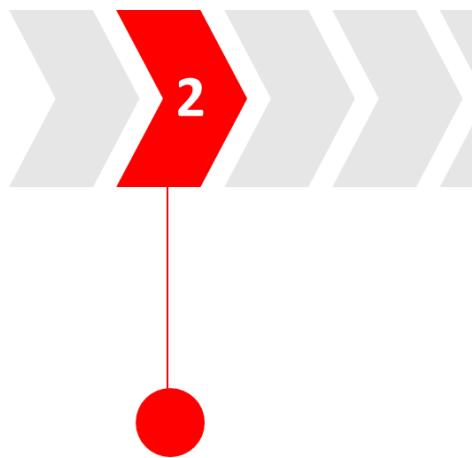
- These pipelines ensure that all relevant data is stored in a centralised data warehouse, ready for analysis.



Big Data Engineers:

- Given the sheer volume of daily transactions and customer interactions, big data engineers step in to manage and process this data using powerful tools like Apache Hadoop and Spark, ensuring the data is clean, accessible, and up-to-date.





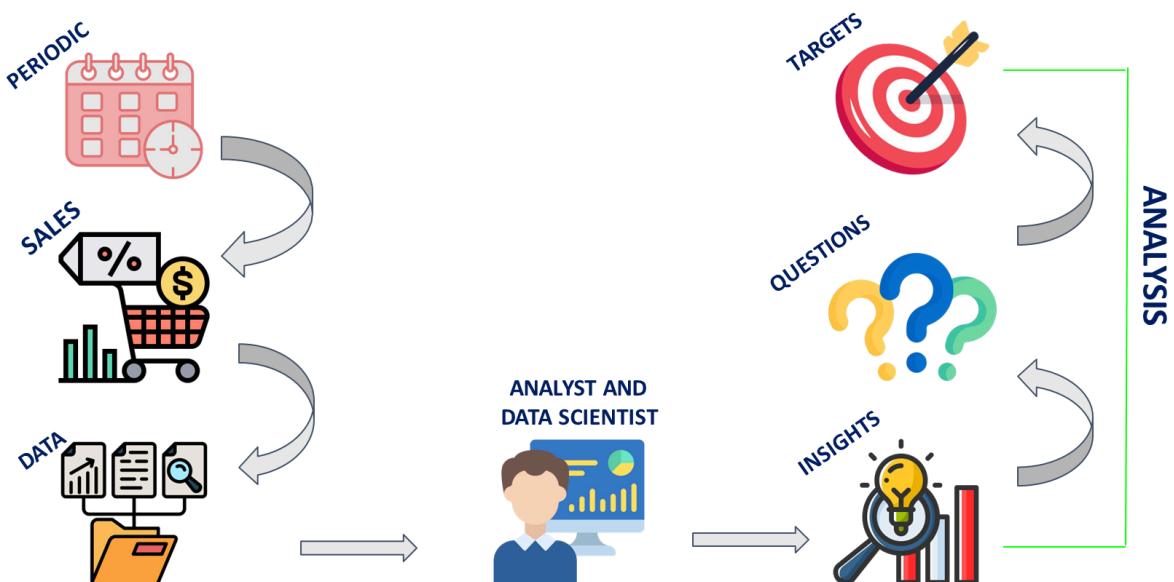
Step 2: Investigation

Exploration and Analysis

Data Analysts:

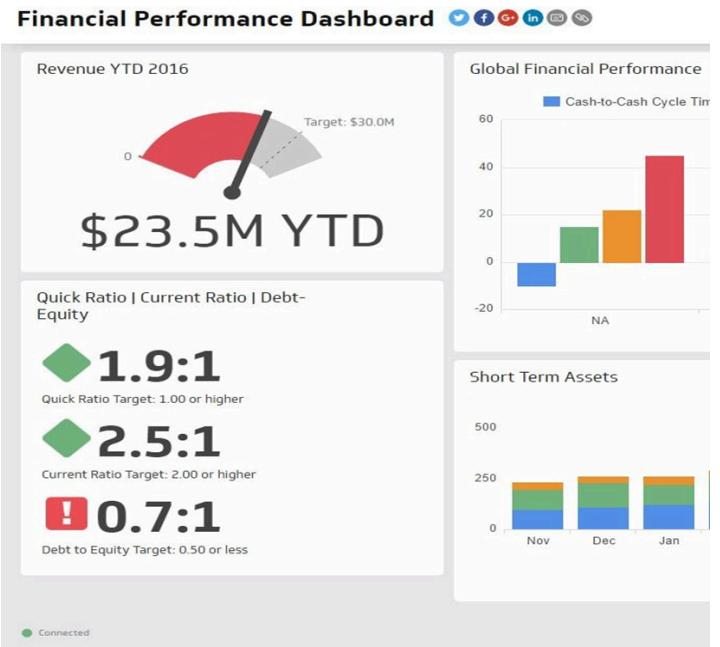
- The data analysts begin their investigation by diving into the prepared datasets. Using SQL, Power BI or Tableau, they explore sales data, customer demographics, and browsing patterns, revealing a concerning trend: younger customers are increasingly abandoning their carts during checkout, especially on mobile devices.

How does the business work?

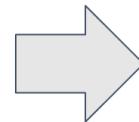


Business Intelligence (BI) Analysts:

- BI analysts compile these findings into comprehensive dashboards and reports, making it easy for CityMart's leadership to visualize the decline in conversion rates and identify which product categories are most affected.

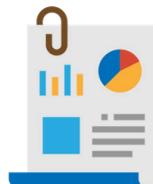


INSIGHTS



WHAT'S NEXT
???????

REPORTS



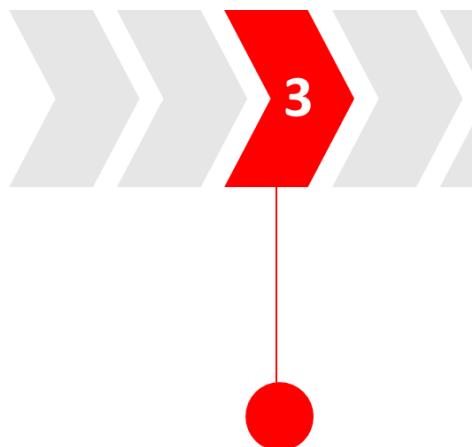
DASHBOARDS



ANALYTICS

OLD SCHOOL





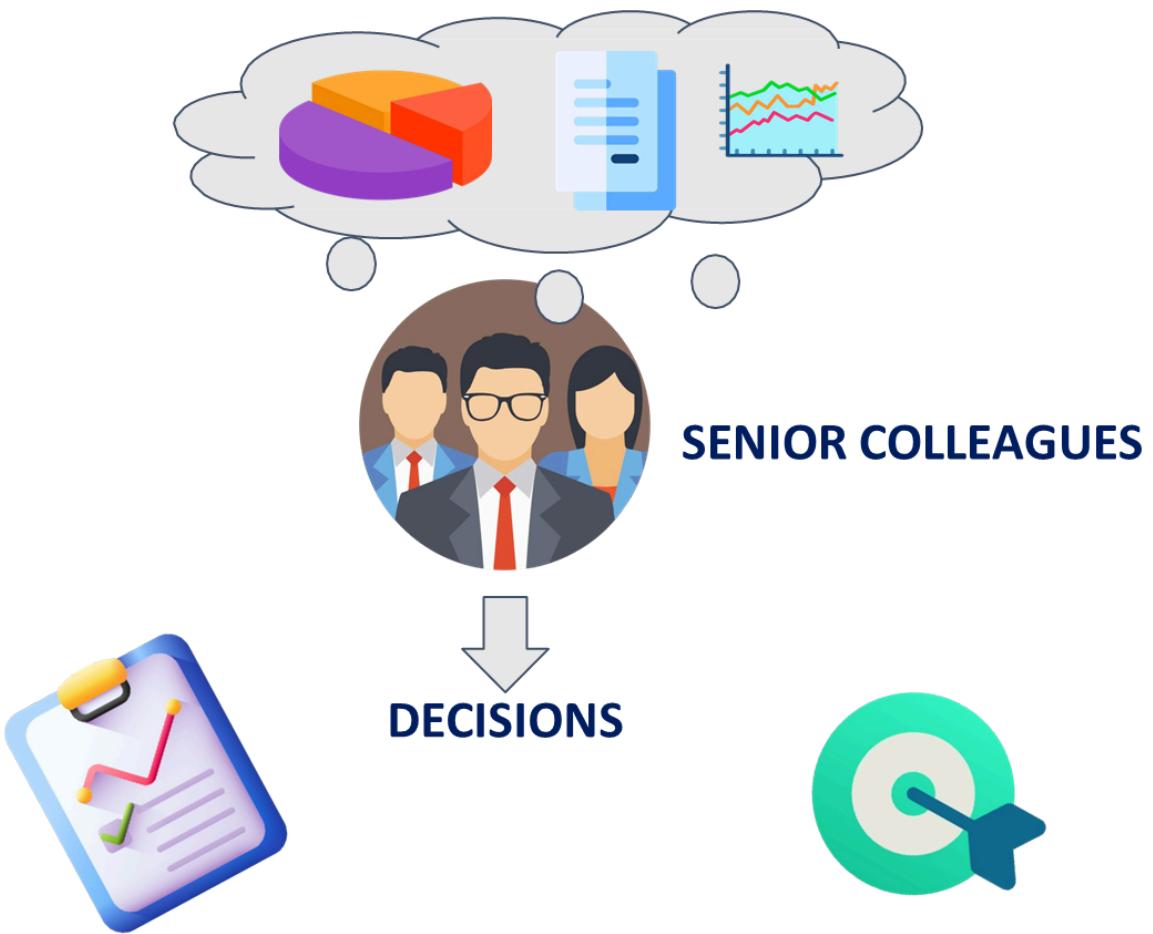
Step 3: The Revelation

Modelling and Insights

Data Scientists:

- Enter the data scientists, the detectives of the digital age.
- They develop machine learning models to predict customer behaviour, discovering that the superstore's cumbersome checkout process and lack of mobile optimization are driving younger customers away.
- They also identify that personalised recommendations could significantly improve engagement.





Machine Learning Engineers:

- To bring these insights to life, machine learning engineers integrate predictive models into CityMart's systems.
- These models suggest personalised products to customers based on their browsing history, aiming to increase conversion rates.





Step 4: The Resolution

Recommendations

Action Plan:

The data team presents their findings and recommendations to CityMart's leadership. They propose a complete overhaul of the mobile checkout process, the integration of AI-driven chatbots, and the use of personalised marketing strategies informed by the machine learning models.



What's a trend or behavior you've noticed lately that you think could be explained by data?

Summary

- Data Analytics: Analysing existing data for insights.
- Data Science: Creating models and algorithms for predictive insights.
- Data Engineering: Building data infrastructure and pipelines.
- Big Data: Handling large, complex datasets.
- Machine Learning: Training algorithms for predictive and decision-making tasks.
- Business Intelligence: Using tools for reporting and visualising data insights.

Data Analytics Applications



Healthcare



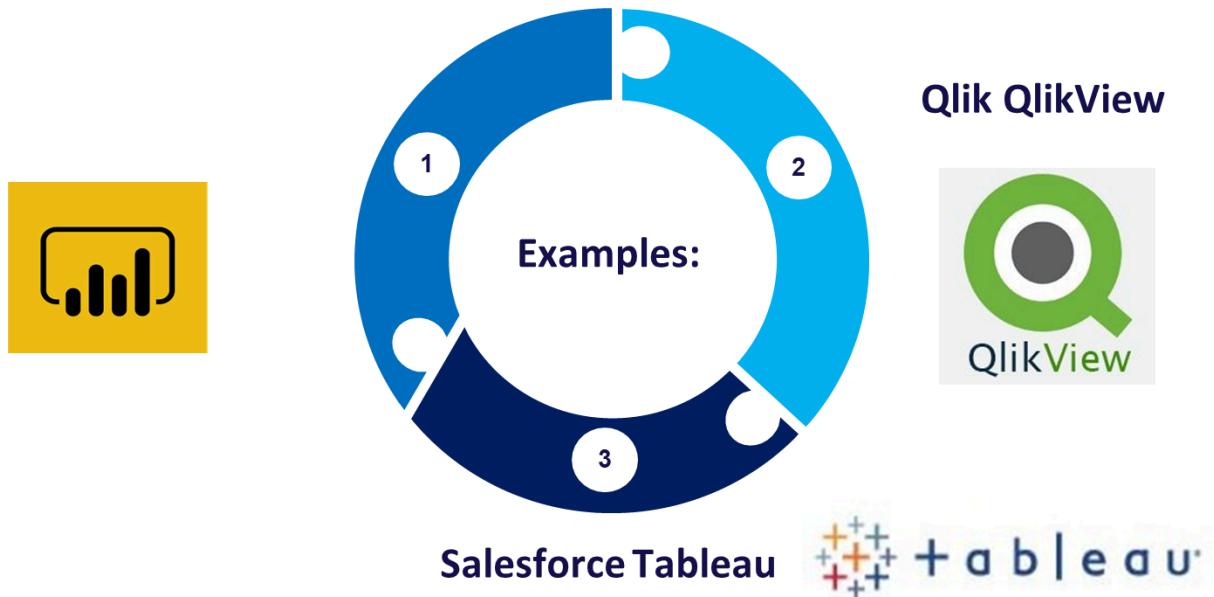
Finance



E-commerce

If you could analyze any data from your personal life (like sleep, spending, or social media), what would it be and why?

Data Visualisation Tools



Setting up our environments

1. Install Python
2. Install Anaconda
3. Install Jupyter Notebook

NEXT UP > Python!

THANK YOU!
:)