

Day - 1

Data Analytics and AI Bootcamp



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



Meet the Speaker

About Me

Intel Edge AI Certified || AWS Certified Solutions Architect Associate || Ex-WhiteHat Jr || NPTEL Awarded

Turning Complexity into Clarity in Data Science

Certifications



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Objectives

Guiding Your Path to Success: Our Course Objectives Unveiled

- ❑ How Data Driven Business Works
- ❑ Introduction to Data Analytics
- ❑ Data Analytics: Importance and Applications
- ❑ Setting up Python environment
- ❑ Introduction to Python Programming Language
- ❑ Hands-on Python

Learning Outcomes

Mastering the Foundations of Generative AI and Prompt Engineering with ChatGPT

- ❑ Learners will be able to:
 - 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, and they assemble a specialized 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.



Unlocking Insights: The Power of Data-Driven Decision Making



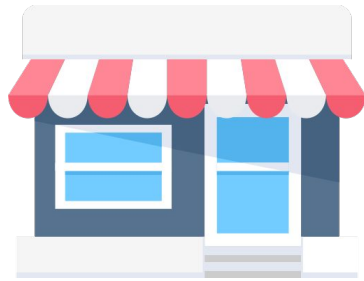


Step 1: Introducing the Team

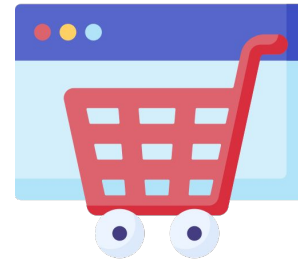
Data Collection and Preparation

How Data Driven Business Works

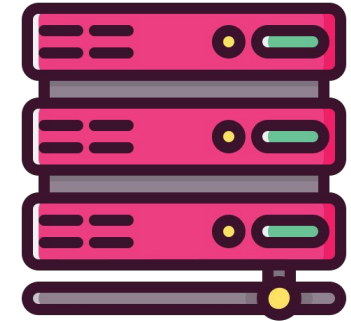
Data Collection and Preparation



SUPERSTORE



SALES



DATABASE



Step 1: Introducing the Team

Data-Driven Decisions: Navigating Success Through Analytical Insights

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 centralized data warehouse, ready for analysis.



How Business Works

Data-Driven Decisions: Navigating Success Through Analytical Insights



Step 1: Introducing the Team

Data-Driven Decisions: Navigating Success Through Analytical Insights

- **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: The Investigation

Exploration and Analysis

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Exploration and Analysis

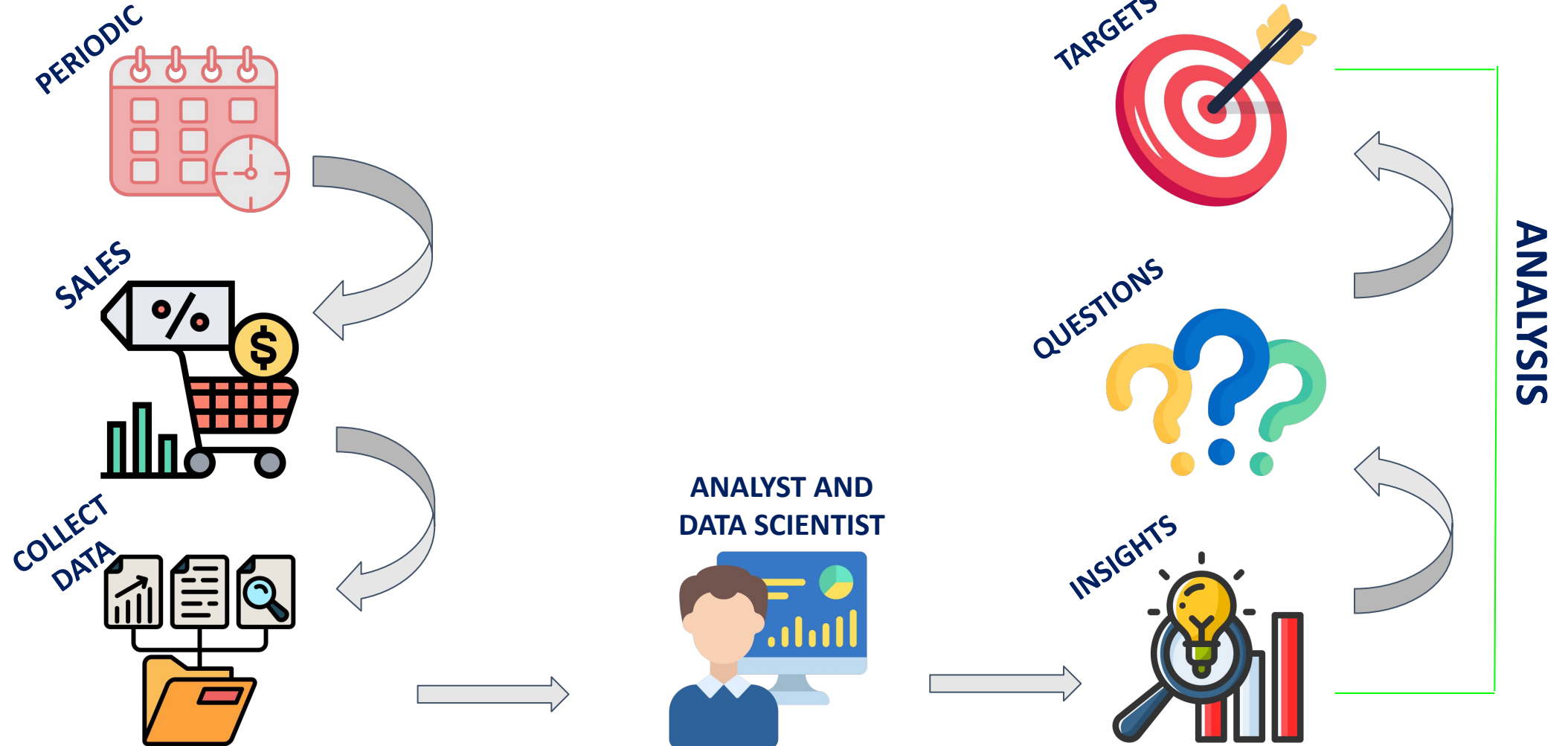
Data Analysts:

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 Business Works

Data-Driven Decisions: Navigating Success Through Analytical Insights

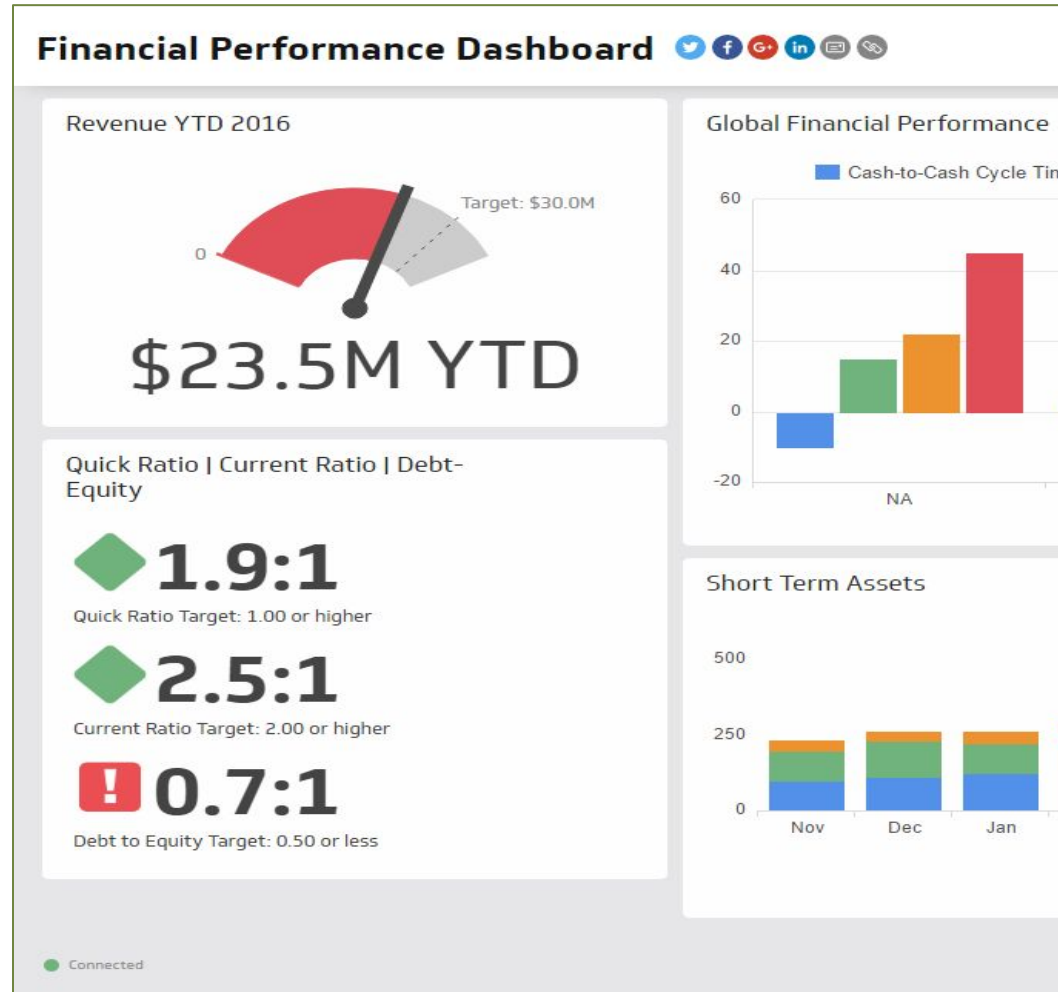


Step 2: The Investigation

Exploration and Analysis

Business Intelligence (BI) Analysts:

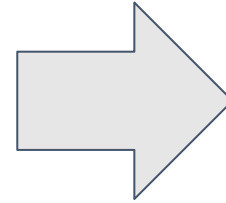
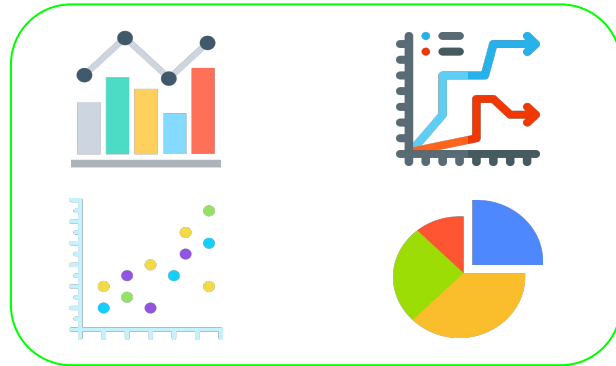
BI analysts compile these findings into comprehensive dashboards and reports, making it easy for CityMart's leadership to visualize the decline in conversion rates and identify which product categories are most affected.



How Business Works

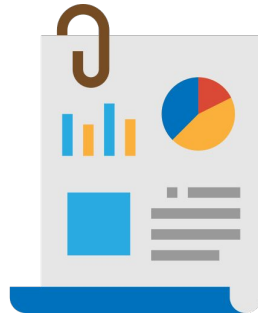
Data-Driven Decisions: Navigating Success Through Analytical Insights

INSIGHTS

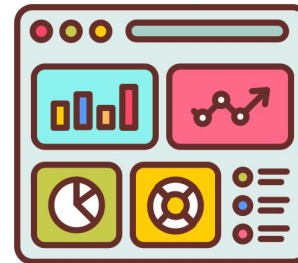


**WHAT'S NEXT
???????**

REPORTS



DASHBOARDS



OLD SCHOOL



ANALYTICS





Step 3: The Revelation

Modeling and Insights

Step 3: The Revelation

Exploration and Analysis

Data Scientists:

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



How Business Works

Data-Driven Decisions: Navigating Success Through Analytical Insights



SENIOR COLLEAGUES



DECISIONS



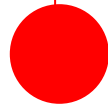
Step 3: The Revelation

Exploration and Analysis

Machine Learning Engineers:

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





Step 4: The Resolution

Recommendations

Step 4: The Resolution

Recommendations

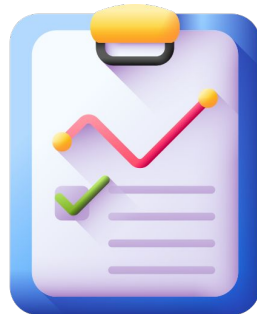
Action Plan:

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 personalized marketing strategies informed by the machine learning models.



How Business Works

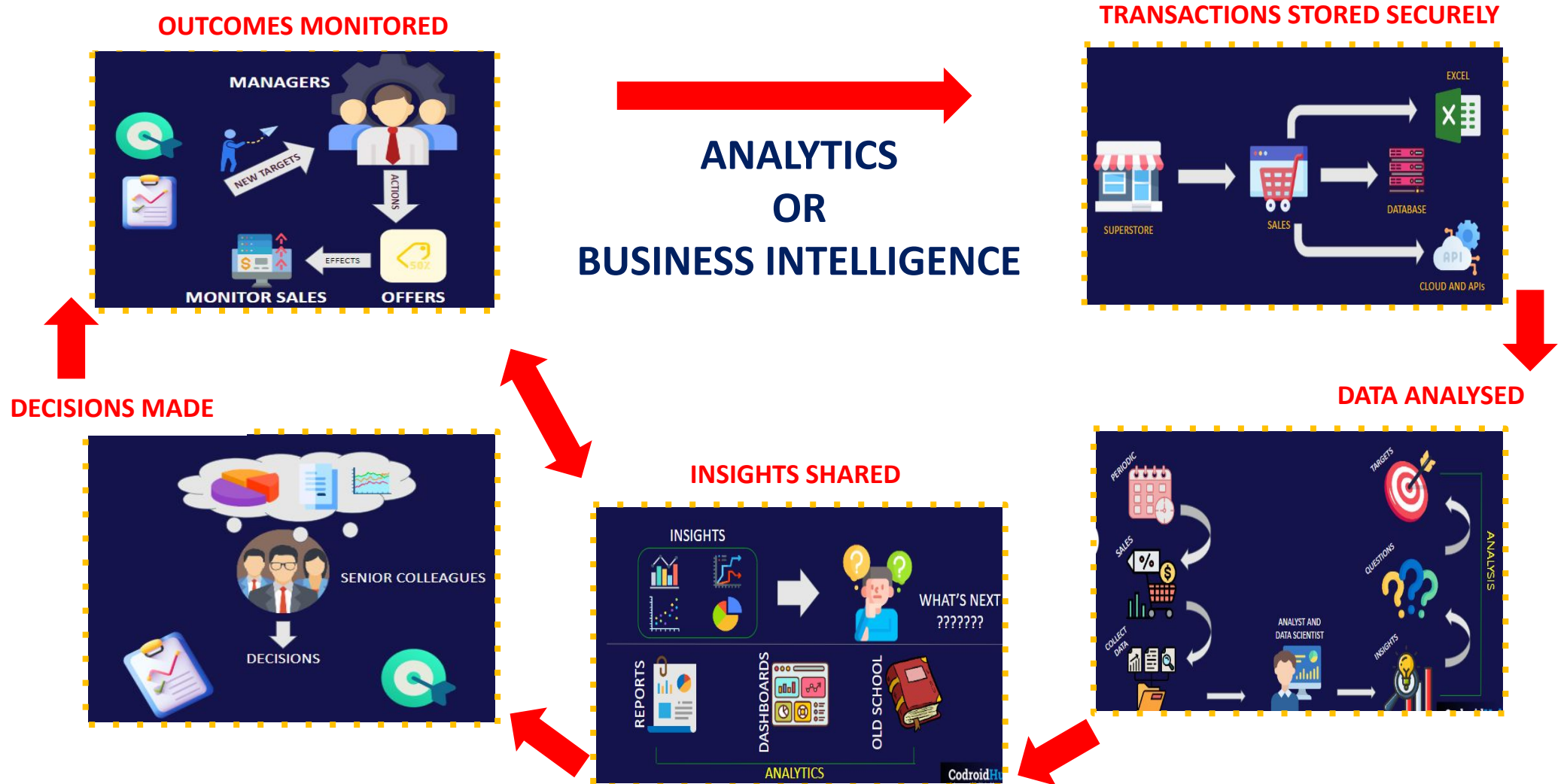
Data-Driven Decisions: Navigating Success Through Analytical Insights



MANAGERS

How Business Works

Data-Driven Decisions: Navigating Success Through Analytical Insights



**Let's conclude
(The Moral of the Story)**



The Moral of the Story

Key Takeaways

CityMart's leadership learns the value of a well-rounded, data-driven strategy.

The collaboration between data engineers, analysts, scientists, and AI specialists proves critical in identifying and addressing the root causes of the sales decline.

Call to Action

Inspired by the insights, CityMart embarks on a journey to continuously improve its data-driven decision-making processes, ensuring sustained growth, customer satisfaction, and a strong competitive position in the market.

Summary

Transforming Data into Insightful Visuals



Data Analytics: Analyzing 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 visualizing data insights.



Data Analytics Applications

Transforming Data into Insightful Visuals



Healthcare



Finance



E-commerce



Data Visualization Tools

Exploring Key Tools for Data Visualization

Microsoft Power BI



Qlik QlikView



Examples:

Salesforce Tableau

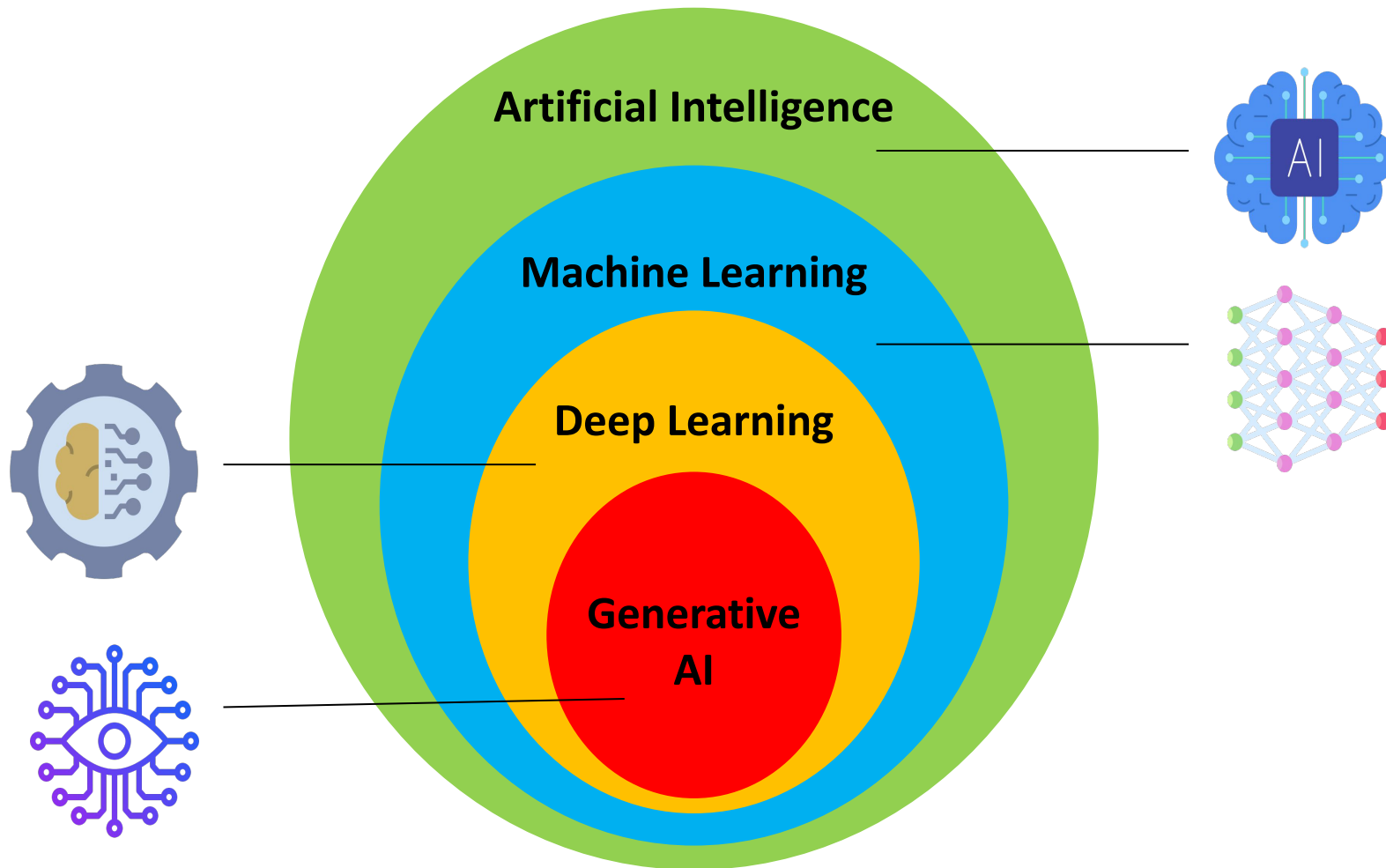


[Image of Power BI logo]. Retrieved October 9, 2020, from <https://powerbi.microsoft.com/en-us/>

[Image of Tableau logo]. Retrieved October 9, 2020, from <https://www.tableau.com/trial/tableau-software>

AI VS ML Vs DL Vs GenAI

Confused???



Deep Dive into the Tool



Thank
You