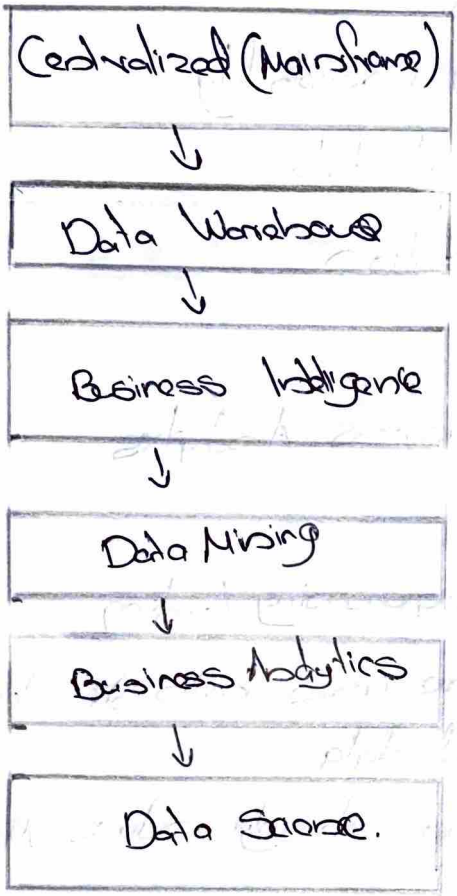
07-July-2025
Monday

⊙ Data Science is a interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from many structured and unstructured data.

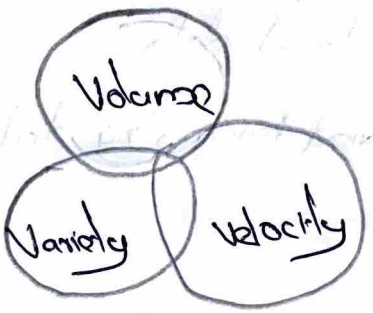
- Evolution of Data Science



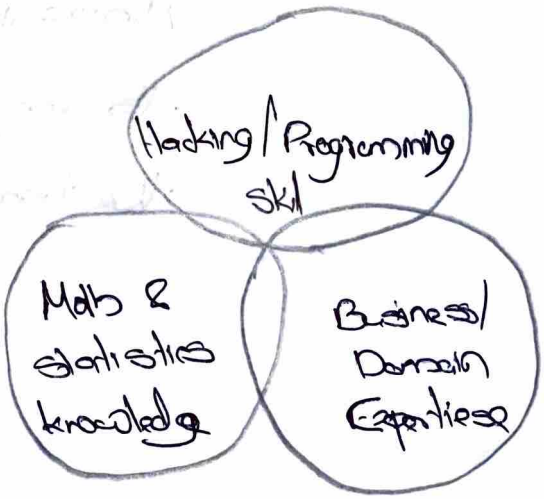
'Data science is the field of study that combines domain expertise, programming skills, and knowledge of mathematics and statistics to extract actionable insights

'Data science can be simply stated as "Insights from Data"

- Big Data vs Data Science



Big data



Data Science

- Big Data - 5V

Volume: ~~quality~~ size
Velocity: speed
Veracity: quality & reliability
Variety: types of data
Value: Ritorization

- Data Science vs Business Analytics

. Data science:
  - invdves Programming / coding
  - Data Science uses both structured and unstructured data
  - Data Science extensively involves ML and AI tools.

- Business Analytics
  - Minimal / No code required
  - Use mostly structured data
  - Use traditional and Forecasting techniques.

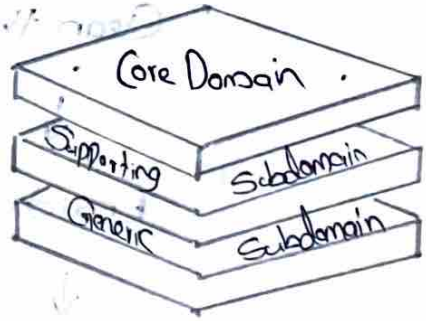
- Analytics classification

1. Descriptive Analytics: summarising facts (what happened)
2. Diagnostic Analytics: Root cause Analysis (why/how it happened)
3. Predictive Analytics: Arriving at an estimation of the target (what will happen)
4. Prescriptive Analytics: Suggestions & Recommendations (what should be done)

- Evolution of Organisation

- Domain Analysis

- It is necessary to understand the domain prior to proceeding
- This helps to gain a business perspective on the analysis which follows



- Exploratory Data Analysis.

- EDA allows us to arrive at patterns and relationships with the data.
- This include the use of visual tools, graphical analysis.