Week 6

Summarization

Week 1	Prerequisite Learning
Week 2	Programming Fundamentals (Python) + Required Installation
Week 3	ML Specific
Week 4	Coding
Week 5	Git Hub Deployment
Week 6	Extension + Summarization

Life Cycle of Data Science Project

Agenda

- Prerequisites for Data Science
- Life Cycle of Data Science Project Overview
- Introduction to Life Cycle Phases with detailed explanation.

Prerequisites for Data Science:

The following are the 3 essential traits of a Data Scientist:

- CURIOSITY

- COMMON SENSE

- COMMUNICATION SKILLS

Prerequisites for Data Science:

1. Machine Learning:

- It is the backbone of Data Science. It is one of the many ways that Data Science uses to find the solution to a problem.

Prerequisites for Data Science:

2. Mathematical Modelling:

- It can be extremely helpful to make fast calculations and predictions from what you know of your data.

Prerequisites for Data Science:

3. Statistics:

- It is foundational to Data Science, to extract knowledge and obtain better results from the data.

Prerequisites for Data Science:

4. Computer Programming:

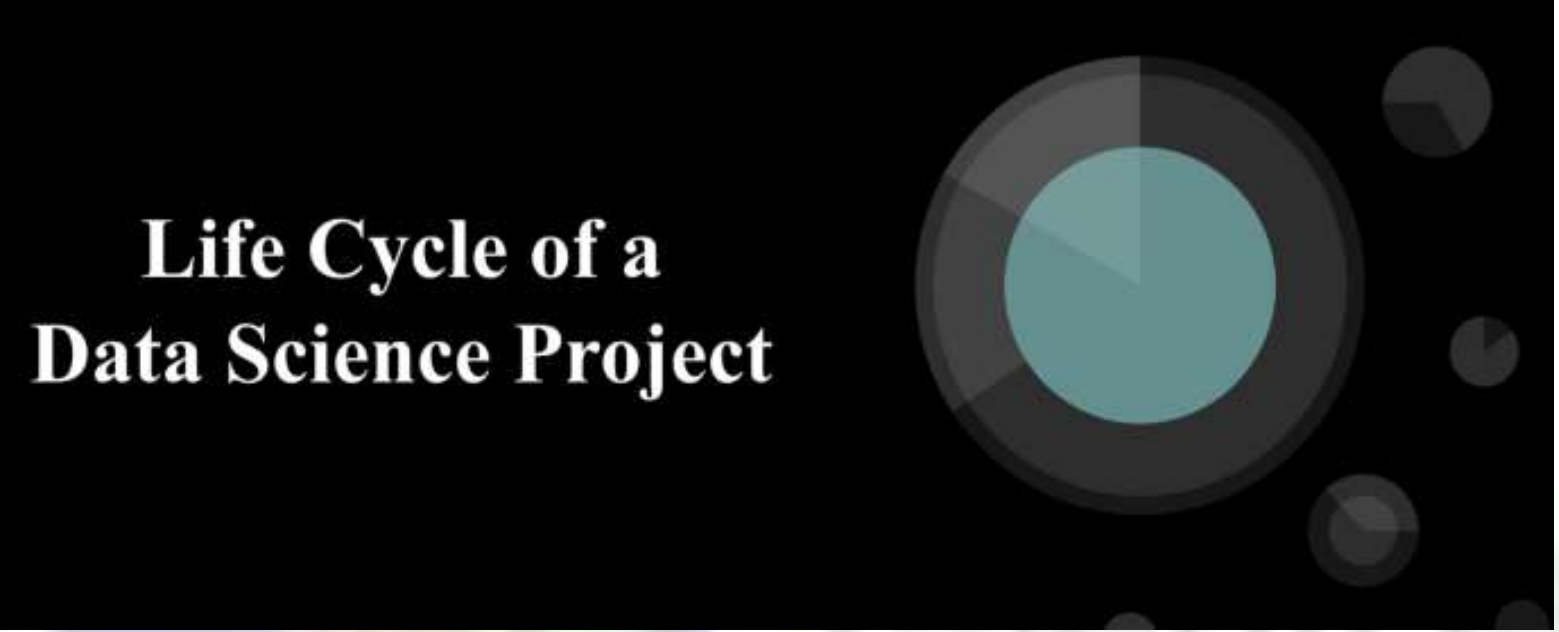
- You should know at least one programming language, preferably Python or R for data modelling.

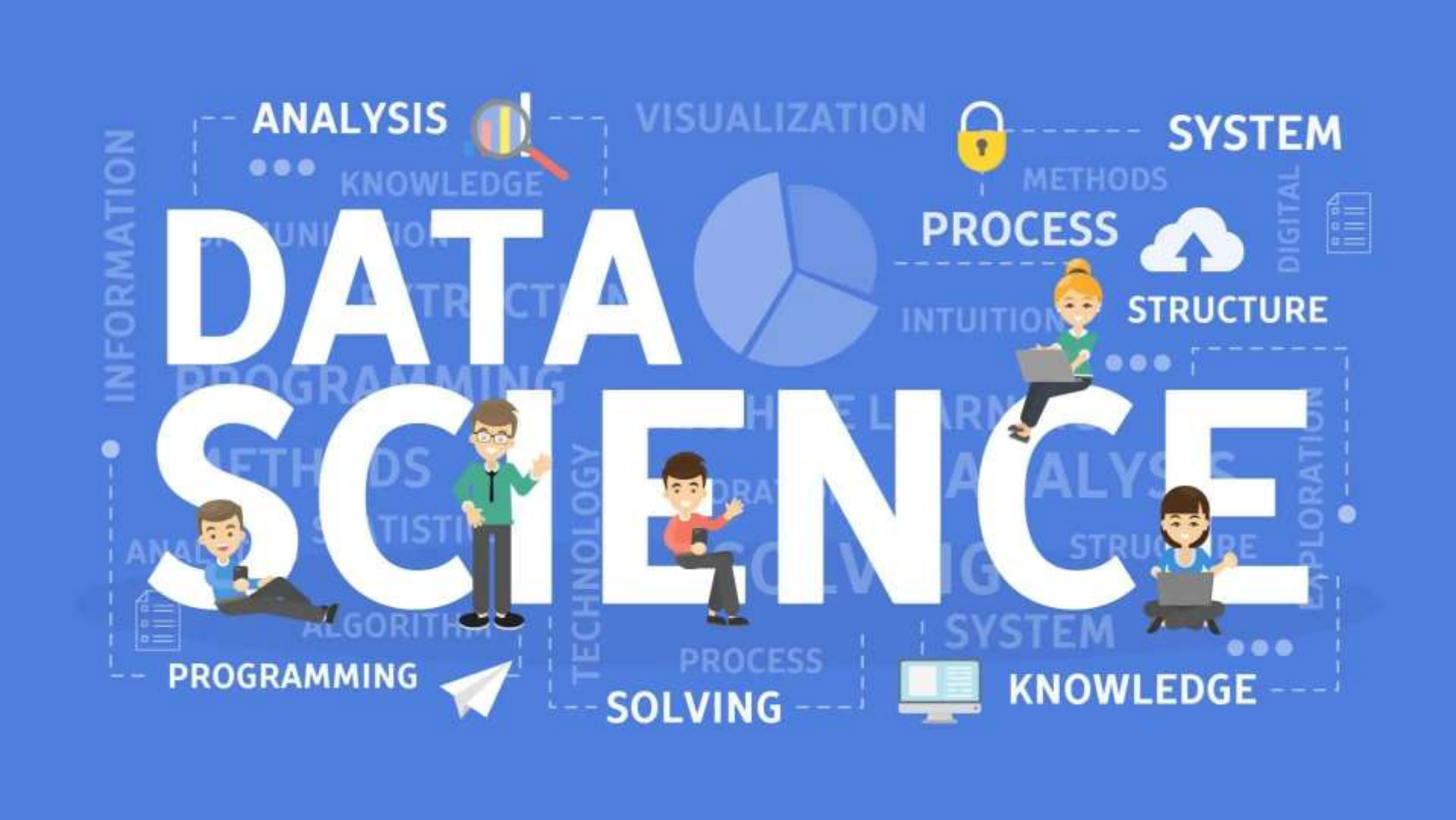
Prerequisites for Data Science:

5. Databases:

- The discipline of querying databases teaches you to ask better questions as a Data Scientist.

Life Cycle of a Data Science Project

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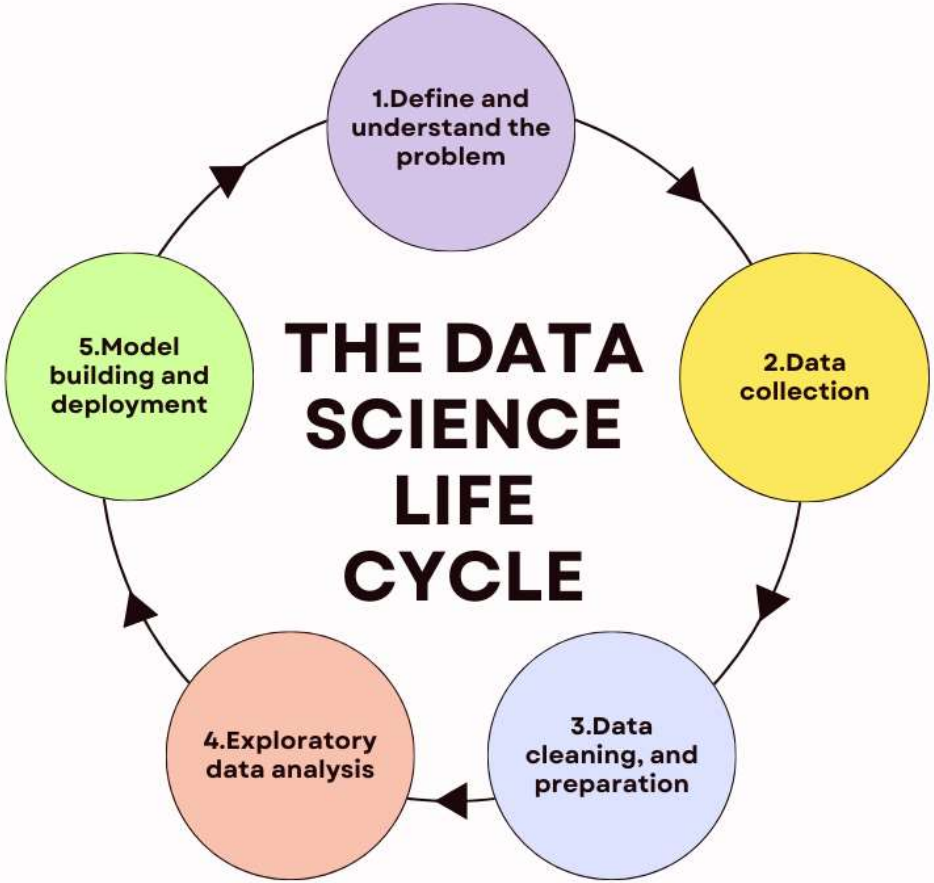
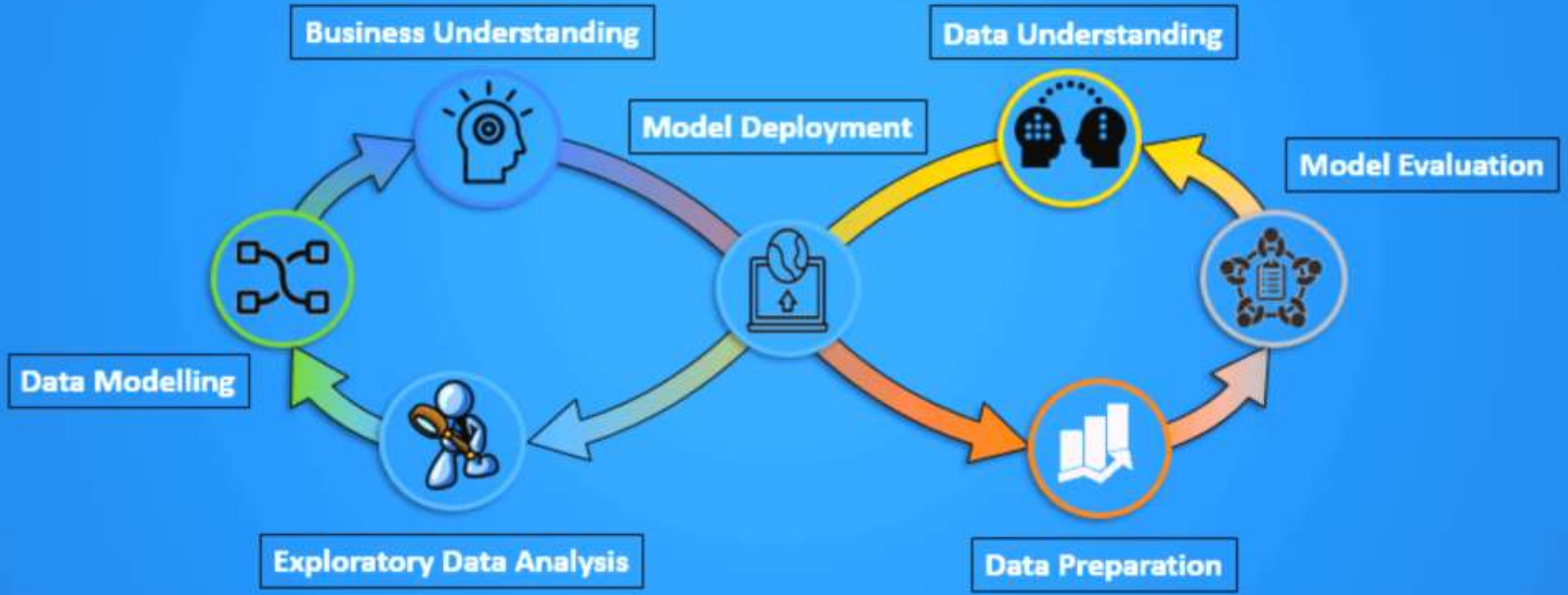


Data Science Lifecycle



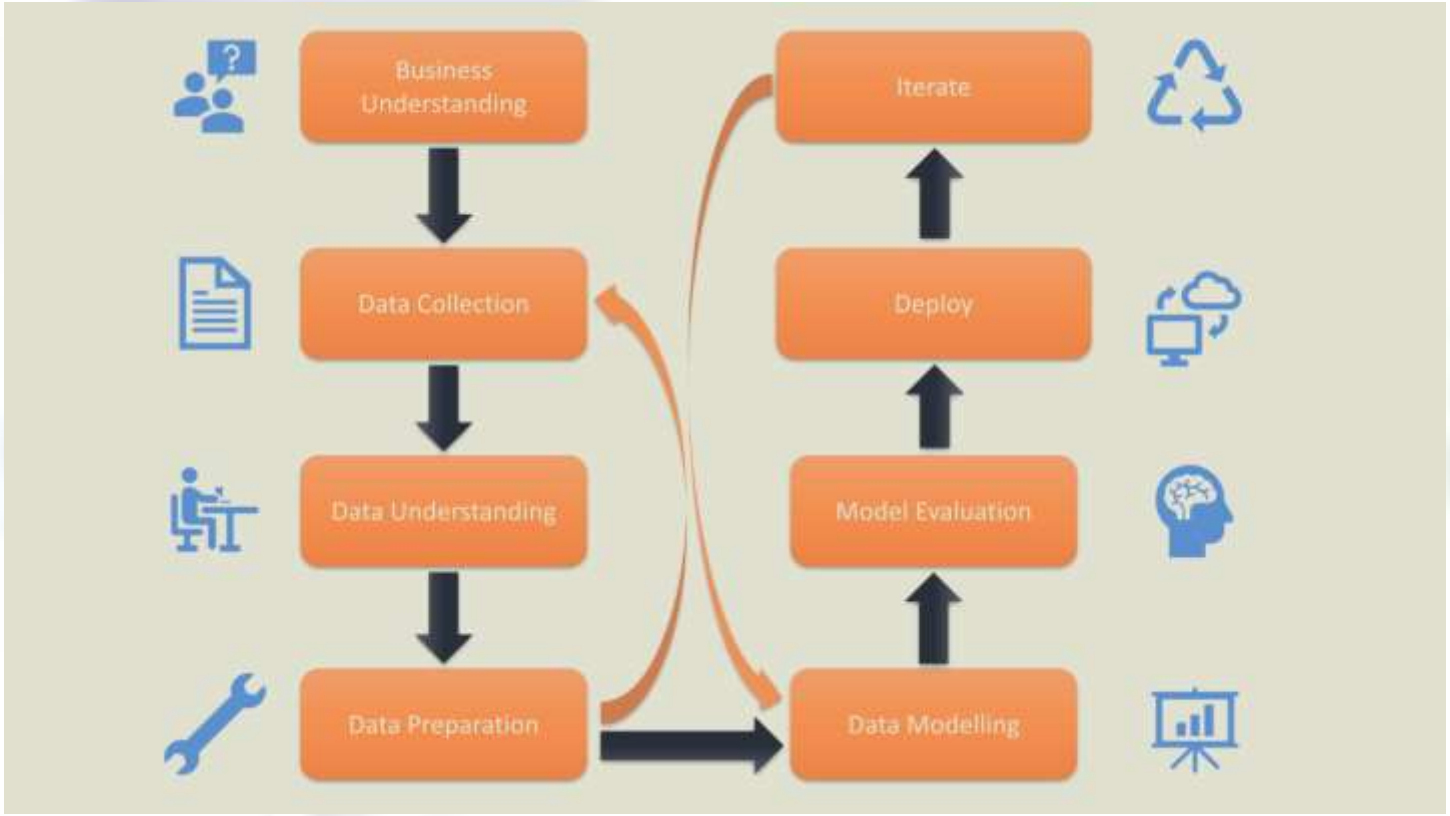
Understanding the Business Problem:

- Client Communication

- Expert Consultation

- Maximum Precision is required

Data Collection



Data Preparation

- Data Cleaning / Wrangling

- Time consuming phase

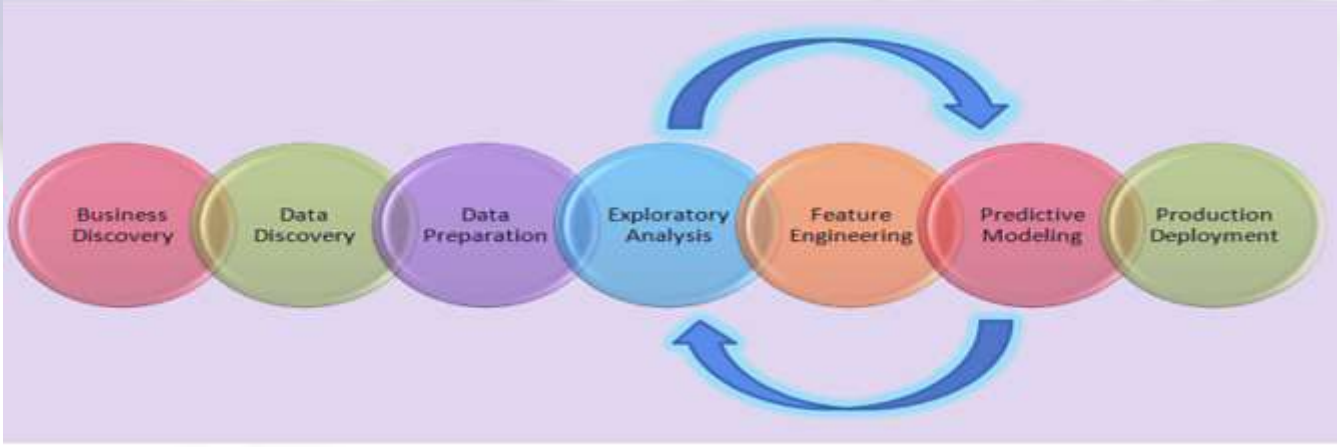
- EDA

Data Modelling

- Core Process

- Model selection

- Choose Appropriate Algorithm



Model Deployment

- Rigorous Evaluation

- Achieve desired accuracy

- Rigorous testing of every step

Must Know Machine Learning Algorithms:

1. Regression
2. Clustering
3. Decision Tree
4. Support Vector Machine
5. Naïve Baiyes

Understanding Data Science Life Cycle with Example:

Step 1. Concept Study:

- Understanding the problem statement, thorough study of the business model is required.

Ex:

- What is use case?
- What are specifications?
- What is the budget?
- What are end goals?

Understanding Data Science Life Cycle with Example:

Step 2. Data Preparation:

- Also known as Data Munging. Most important aspect of Life

Cycle.

Ex:

- Data Integration
- Data Transformation
- Data Reduction
- Data Cleaning

Understanding Data Science Life Cycle with Example:

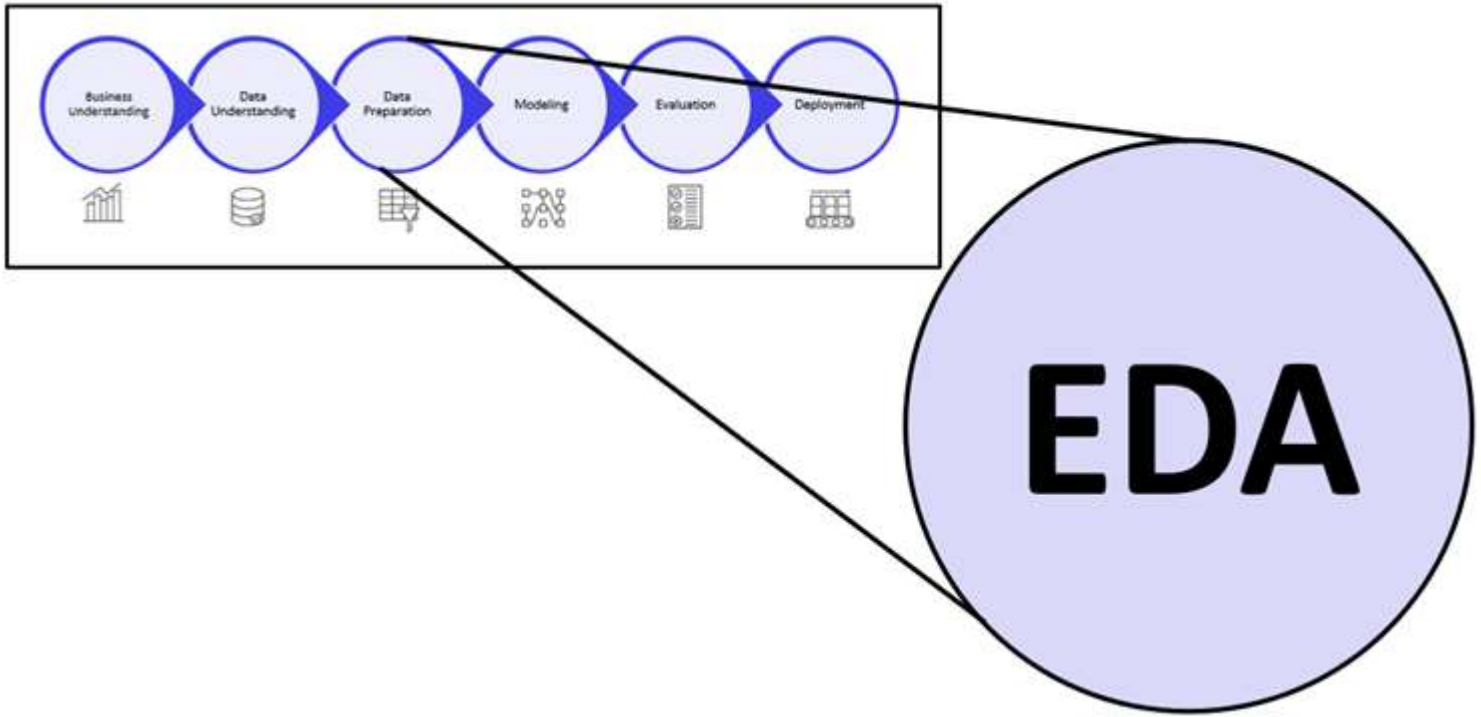
Step 3. Model Planning:

- It involves EDA. (Exploratory Data Analysis)

- Key variables are selected.

Ex:

- ML Model
- Statistical Model
- Regression Model
- Classification Model, etc.



Understanding Data Science Life Cycle with Example:

Step 4. Model Building:

- Uses various analytical tools and techniques.

- Goal is to build right model.

Ex:

- Linear Regression

Understanding Data Science Life Cycle with Example:

Step 5. Communicate Results:

- Key findings are identified and conveyed to the stakeholders.

Understanding Data Science Life Cycle with Example:

Step 6. Operationalize:

- Final reports, code, and technical documents are delivered by the team.


Thank you!


The best
way to predict
the future
is to create it.