Data Science:
1. programming [coding prerequisite]
2. Data Extraction & wrangling [preparation]
3. EDA, Business acumen & Storytelling [visualization/DashBoards]
4. Data Engineering [Data warehouses]
5. Statistics & Mathematics [Experimentation]
6. Machine Learning [Modeling]

1. Programming: Data structures (python/R)
SQL scripting
Conditionals, List/Dict Comprehension
Object oriented programming
working with External libraries
fundamental algorithms: searching, sorting, trees, graph etc

2. Data Extraction & wrangling: Scripting - Extracting data from websites, APIs, DBs
Data formatting type conversions
Libraries - pandas & Numpy
Data transformation - joining, slicing, indexing
Handling missing values.

Profiles:-
[Data Analysts (Any depth)]

3. Visualization / Dashboards : Defining Business-focused questions
Studying data distribution - outliers
Univariable & multivariable analysis
Visualization - matplotlib, Seaborn, plotly
Building dashboards - Excel / tableau, jupyter
writing concise & insightful reports
Business acumen.

profile:
Data Analyst
Business Analyst
Marketing Analyst
Data product Manger

4. Data Engineering : working with CLI
Building ETL pipelines
using tools - spark, kafka,
cloud services - Aws, Gcl, Azure
Algorithm - Mapreduce, YARN
Deploying ML models in production.

Deploy Model

profile :- Data Engineering
Devops Engineering
Data Architect

5. Statistics & Mathematics: Descriptive - mean, median, mode etc
Experiment design
ANOVA, chi-Square test
Sampling, data distribution, T-tests
linear algebra
Linear & multivariate Calculas.

profile :- Data Scientist
Quantitative Analyst

6. Machine Learning :

profile: ML Engineer, Data Scientist

Supervised - classification, regression

unsupervised - clustering, dimensionality reduction

Reinforcement learning - TF-Agents, optimising rewards

performance metrics - RMS, accuracy, confusion matrix, AUC-RDC, etc

Hyperparameter tuning

Statistical ML - KNN, Decision trees, bagging, boosting

Ensemble Models - Random forests, voting classifiers, Adaboost