

#	Data Science Topics
D1	Introduction to Data Science, with examples of Amazon, Netflix, Walmart
D2	What is Data Science? And Who is a Data Scientist?
D3	Data Science Skill Set required and Data Science Job Roles
D4	Data Life Cycle
D5	Statistics concepts
D6	What is Statistics? Basic Terminologies in Statistics, Sampling Techniques, Random Sampling, Systematic Sampling, Stratified Sampling
D7	Types of Statistics: Descriptive Statistics covering topics like (Measures of Spread, Range, Inter Quartile Range, Variance, Standard Deviation, Central Limit Theorem, Confusion Matrix)
D8	Data Analysis, Brainstorming (with different techniques), data wrangling
D9	Probability, What is Probability? Types of Events
D10	Probability Distribution
D11	Types of Probability
D11-1	i. Marginal Probability
D11-2	ii. Joint Probability
D11-3	iii. Conditional Probability
D12	Data Collection and Cleaning
D13	Understanding Business Requirement
D14	Data Collection Process
D15	Data Cleaning & Preprocessing techniques
D16	Data Reduction
D17	Data Wrangling
D18	Train & Test Data
D19	Information Gain & Entropy, What is Entropy?
D20	Iterating in a NumPy Array
D21	Array Manipulation File Handling using NumPy
D22	Module 6: Data Manipulation
D23	Significance of pandas library
D24	Data Structures in pandas
D25	Importing & Exporting Data
D26	Essential Functionality of Series & DataFrame
D27	Combining Data, Cleaning Data, Grouping Data
D28	What is Exploratory Data Analysis?
D29	Why Data Visualisation?
D30	The Matplotlib library
D31	Types of plots & charts : Line plot, Bar plot, Histogram, Pie chart, Scatter plot, Boxplot
D32	Customising Visualisations
D33	Grid & Subplots

#	Machine Learning Topics
1	Basics of Machine Learning
2	Need for Machine Learning
3	What is Machine Learning?
4	Machine Learning Definitions
5	How does Machine Learning works? i.e, Machine Learning Process
6	Types of Machine Learning
7	i. Supervised Learning Algorithm with Examples
8	ii. Unsupervised Learning Algorithm with Examples
9	iii. Reinforcement Learning with Examples
10	Data Preprocessing
11	Supervised Learning Algorithm (Regression and Classification)
12	Regression:
13	Simple Linear Regression
14	Multiple Linear Regression,
15	Polynomial Regression,
16	Classification
17	Logistic Regression,
18	K-NN,
19	Support Vector Machine
20	Kernel SVM,
21	Naive Bayes,
22	Decision Tree Classification,
23	Random Forest Classification
24	UnSupervised Learning Algorithm ( Clustering and PCA)
25	Clustering: K-Means
26	Association Rule Learning: Apriori
27	Reinforcement Learning: Upper Confidence Bound, Thompson Sampl
28	Natural Language Processing: Bag-of-words model and algorithms fo
29	Deep Learning: Artificial Neural Networks, Convolutional Neural Net
30	Model Selection: k-fold Cross Validation
#	Python Topic
P-1	Introduction to Python
P-2	Compiled and Interpreted Languages
P-3	Starting Python, installing IDE, and Pycharm
P-4	Basic Syntax
P-5	Python Data types -int, float, string, List, Tuple, Dictionary, Sets
P-6	Variables and naming conventions
P-7	some Maths with Python
P-8	conditional and looping in Python -Control Flow
P-8.1	If/While/For loops
P-8.2	Nested loops
P-8.3	Break
P-8.4	Continue

P-8.5	Pass
P-8.6	Exit
P-9	Lambda Function -map,reduce, filters
P-10	Functions and Methods including details like *args and **kwargs
P-10.1	creating Variable, understanding the scope for variables
P-10.2	Parameters
P-10.3	default parameters
P-10.4	Variable Length Parameter
P-10.5	Command line arguments
P-11	File Handling (read, write and append modes)