

Data Analyst Roadmap with Free Resources!!

Technical Skills:

- Maths & Statistics
- Excel
- SQL
- Power BI/Tableau
- Python

1. Maths & Statistics(Week 1):

- Mean, Median, Mode, Standard Deviation, Normal Distribution, Probability, Variance, Correlation
- Cumulative Sum, Rolling Sum, Weighted Average, Arithmetic Operations(Basic Maths)





Resources

NOTE: Study only above mentioned topics from the below resource

Youtube:

<https://youtube.com/playlist?list=PLeo1K3hjS3uuKaU2nBDwr6zrSOTzNCs0l&si=WrYRu3C2X0LrICjN>

2. MS Excel (Week 2 to 3):

- **Data Management & Cleaning** 
Removing Duplicates, Text to Columns, Data Validation, Flash Fill
- **Pivot Tables & Analysis Tools** 
Pivot tables & Pivot charts, Data Sorting and Filtering, Subtotals, Scenarios (What-If Analysis)
- **Visualization, Formatting & Validation** 
Conditional Formatting, Basic to Advanced Charting, Creating Dynamic Dashboards
- **Functions & Formulas** 
 - VLOOKUP, HLOOKUP, and XLOOKUP functions
 - IF, COUNTIF, SUMIF, AVERAGE, MEDIAN, and MODE functions
 - CONCATENATE, LEFT, RIGHT, MID, DATE, TIME, NOW, ROUND, ROUNDUP, ROUNDDOWN, INDEX, MATCH, CHOOSE, SWITCH, IFS, RAND, RANDBETWEEN, TRANSPOSE, SUMPRODUCT, TEXT, LEN, TRIM, SUBSTITUTE, NETWORKDAYS, WORKDAY, DATEDIF, WEEKDAY, MONTH, PROPER, UPPER, LOWER functions

Resources

NOTE: Study only above mentioned topics from the below resources

Youtube:

<https://youtu.be/v2oNWja7M2E?si=3eboDH1KEduY6cXa>

https://youtu.be/grbf9DtR3_c?si=yq_ZAKZd6VpNQFi5

Website to practice Excel:

<https://www.wiseowl.co.uk/excel/exercises/standard/>

3. SQL (Week 4 to 7):

Cover these first- CREATE, INSERT, UPDATE, ALTER, DELETE, DROP, TRUNCATE and DATA TYPES

SQL Basic

1. SELECT and WHERE Clauses | Filtering and retrieving data efficiently
2. GROUP BY and HAVING | Aggregating data with conditional logic
3. JOINS (INNER, LEFT, RIGHT, FULL) | Combining data from multiple tables
4. DISTINCT and LIMIT | Handling duplicates and limiting results

SQL Intermediate

1. Subqueries | Using queries inside queries for complex filtering
2. Window Functions (ROW_NUMBER, RANK, DENSE_RANK) | Analyzing data over partitions
3. CASE Statements | Conditional logic within your queries
4. Common Table Expressions (CTEs) | Simplifying complex queries for readability

SQL Advance

1. Recursive CTEs | Solving hierarchical and iterative problems
2. Pivot and Unpivot | Reshaping your data for better insights
3. Temporary Tables | Storing intermediate results for complex operations
4. Optimizing SQL Queries | Improving performance with indexing and query plans

Resources:-

Youtube:

https://www.youtube.com/live/q_JsgpiuY98?si=JWo5LEqxdK0DvMRZ

<https://youtu.be/iDBznYIMuw4?si=lsaf4p0yrmPXENXX>

Website to practice SQL:

https://www.w3schools.com/sql/sql_exercises.asp

<https://www.hackerrank.com/domains/sql>

Unguided Project (SQL):

<https://8weeksqlchallenge.com/getting-started/>

4. Power BI(Week 8 to 12):

- Power Query
- Data Modelling
- DAX
- Reporting
- Power BI Service

Resources:-

Youtube:

<https://youtu.be/Dk25lwdTKow?si=5chfiu8GDnaqK1eI>

<https://youtube.com/playlist?list=PLjNd3r1KLjQuVWrPuygE8QwEmCL6rrUrx&si=7UOBmF4IlyEDyuwH>
(DAX Playlist)

Website to practice DAX(Optional):

<https://www.wiseowl.co.uk/power-bi/exercises/dax/>

Guided Project in Power BI:

<https://youtu.be/tT4V7zguCnc?si=cs7KkXinj5h5EqVt>

<https://youtu.be/4QkYy1wANXA?si=Zn9JVNzW4ZBIDgZk>

Unguided Projects in Power BI:

NOTE: Utilize SQL as the source for all these unguided projects

- Generate Insights to Solve a **Supply Chain** Issue in the FMCG domain
- Provide Insights to Telangana Government **Tourism** Department
- Analyse historical IPL data and provide insights on IPL 2024 for a **sports** magazine
- Provide Insights to the Product Strategy Team in the **Banking** Domain
- Provide Insights to the **Marketing** Team in Food & Beverage Industry

Link to all these projects:

<https://codebasics.io/challenge/codebasics-resume-project-challenge>

5. Python (Week 13 to 15):

➡ Basics of Python:

Python Syntax, Data Types, Lists, Tuples, Dictionaries, Sets, Variables, Operators, Structures:

if-elif-else, Loops, Break & Continue try-except block

Functions

Modules & Packages

Then jump to data analytics python libraries-

➡ Pandas:

Pandas Data Structures (Series, DataFrame, Index)

Working with DataFrames:

-> Creating DFs

-> Accessing Data in DFs Filtering & Selecting Data

-> Adding & Removing Columns

-> Merging & Joining in DFs

-> Grouping and Aggregating Data

-> Pivot Tables

Input/Output Operations with Pandas:

-> Reading & Writing CSV Files

-> Reading & Writing Excel Files

-> Reading & Writing SQL Databases

-> Reading & Writing JSON Files

-> Reading & Writing - Text & Binary Files

➡ Numpy:

What is NumPy & imports?, NumPy Arrays

NumPy Array Operations:

Creating Arrays

Accessing Array Elements

Slicing & Indexing

Reshaping, Combining & Arrays

Arithmetic Operations

Broadcasting

Mathematical Functions

Statistical Functions

Resources:-

NOTE: Study only above mentioned topics from the below resource

Youtube:

https://youtu.be/GPVsHOIRBBI?si=k_twVXq-AK6xBr5-

Interview Preparation (Week 16+):**Youtube:****Power BI-**

<https://www.youtube.com/channel/UC8LUT6Qn7MSvPQPM8ZJsW8g>

SQL-

<https://www.youtube.com/watch?v=4xPxGX4mfb4&list=PLBTZqjSKn0lcR6DhoLUibOG8frnWbZdSH>

Project Portfolio:

<https://mavenanalytics.io/signup/pricing>

<https://carrd.co/>

<https://github.com/>

Target these Companies as a Fresher:

- Tiger Analytics
- The MATH Company
- Fractal Analytics
- Absolutdata
- Celebal Technologies
- Tredence
- Latent View
- Analytics Quotient
- Ugam Solutions
- EXL Services
- BRIDGEi2i(Acquired by Accenture)
- Quantiphi
- Manthan
- Nielsen IQ(NIQ)
- ZS Associates
- Light Microfinance Pvt. Ltd
- Recykal
- Integ Enterprise Consulting
- Manjushree Technopack Limited
- Gartner
- Clearwater Analytics
- Experian India
- CRIF India
- DecisionTree Analytics & Services
- Jupiter
- YASH Technologies
- Internshala
- Arus Info