

Roadmap to be a DATA ANALYST - 2024

If you are from non-tech background, fresher or want to change domain, etc.
No Worries!!

Anybody can start their Data Journey by following this Roadmap.

This roadmap includes:-

1. Required Tech-skills
2. Free Resources
3. Required non-tech skills
4. Study Plan
5. Interview Tips

Role of a Data Analyst

A data analyst collects, cleans, and interprets data sets to answer a question or solve a problem.

In Lehman terms, A Data Analyst is like a detective who uses numbers instead of clues to solve problems. They gather data from various sources, like spreadsheets, databases, or online systems, and then look for patterns, trends, or insights that can help a company make better decisions.

For example, a Data Analyst might analyze sales data to figure out which products are selling the best, which marketing strategies are working, or where the company can cut costs. They use tools like Excel, SQL, and sometimes programming languages like Python to organize and examine the data.

In simple terms, a Data Analyst turns raw data into valuable information that companies use to improve their performance, make decisions, and plan for the future.




1. Basic Maths & Statistics - WEEK 1

I know you are excited to start your journey. So let's begin from very first skill set.

Topics to Cover

- Basic Maths :- Average, Arithmetic, Weighted average, Cumulative Sum, Percentile vs Percentage
- Statistics :- Mean, Median, Mode, Standard Deviation, Normal Distribution

Resources

-  Introduction | Mathematics and statistics for data science and machine l... - Self
-  Complete Statistics For Data Science In 6 hours By Krish Naik
-  Starter Roadmap For Learning Statistics For Data Analyst & Data Scien... (Hindi)
- <https://www.khanacademy.org/math/statistics-probability/analyzing-categorical-data>

Goal



- Initially just focus on conceptual understanding of each term. You should be able to differentiate between different terms of stats.

2. Excel - WEEK 2

Topics to Cover

- Basic formulas: SUM, DIFF, AVERAGE, MEAN, MEDIAN, CONCATENATE
- Advance formulas: VLOOKUP, INDEX, MATCH, IF, COUNTIF, SUMIF
- REMOVE duplicates and conditional formatting
- Charts, filters, sort and slicers
- Pivot tables and pivot charts
- Ignore VBA, MACros, etc

Resources

-  Microsoft Excel Tutorial for Beginners - Full Course - Self Done
-  Pivot Tables in Excel | Excel Tutorials for Beginners - Alex The Analyst

Resources to practice

- <https://www.excel-easy.com>
- <https://exceljet.net>
- <https://www.excelpracticeonline.com>

And, then Complete below project in Excel - Optional

- <https://www.youtube.com/watch?v=m13o5aqeCbM>
- <https://www.youtube.com/watch?v=opJgMj1IUrc>

Goal



- Learn how to manipulate data using Excel/Google Sheets, including formulas, pivot tables, and basic data visualization.

3. SQL - WEEK 3,4,5

Topics to Cover

- Basic Queries:- CREATE, INSERT, UPDATE, ALTER, DELETE, DROP, TRUNCATE.
- Must Know Topics:- SELECT, WHERE, DISTINCT, LIKE, BETWEEN, ORDER BY, LIMIT, GROUP BY, HAVING CLAUSE, IMPORT, DATA TYPES.
- Advance Queries:- Date time function, Window function, Sub query, Case statement, CTE, Query Optimisation
- JOINS:- Self, Inner, Outer, Left, Right

Resources

- <https://www.w3schools.com/sql/default.asp> - For Theory
-  SQL Tutorial for Beginners [Full Course] - Programming with Mosh
-  SQL Tutorial for Beginners in Hindi (SQL Full Course) - Great Learning (Hindi)

Resources to practice

- <https://www.hackerrank.com/domains/sql> - must do
- <https://leetcode.com/studyplan/top-sql-50/> - must do
- <https://datalemur.com/questions>

Goal






- You should be able to visualize tables, joining tables and what you are extracting from tables.
- Tip:- Try making rough tables if stuck with any sql question

4. Python - WEEK 6,7,8,9

Topics to Cover

- Introduction to Python:
 - Variables, data types, and basic operations.
 - Control structures (if statements, loops).
 - Functions and modules.
- NumPy:
 - Array creation and manipulation.
 - Mathematical operations on arrays.
 - Indexing and slicing.
- Pandas:
 - Series and DataFrame basics.
 - Data cleaning and manipulation.
 - Grouping and aggregation.
- Data Cleaning and Preprocessing:
 - Handling missing data.
 - Removing duplicates.
 - Data normalization and scaling.

Resource

-  Python Tutorial for Beginners - Full Course (with Notes & Practice Ques...
-  Complete Road Map To Be Expert In Python- Follow My Way - Self
-  Python Tutorial - Python Full Course for Beginners - Self
-  numpy tutorial - introduction | numpy array vs python list
-  Python Pandas Tutorial 1. What is Pandas python? Introduction and Ins...
- <https://courses.analyticsvidhya.com/courses/pandas-for-data-analysis-in-python>
- <https://www.w3schools.com/python/default.asp> - For Theory

Resources to Practice

- <https://pynative.com/python-exercises-with-solutions/> - Self
- <https://www.hackerrank.com/domains/python> - Self
- Leetcode Weekly Contest

Complete at least 3-4 case study from below playlists-

- https://youtube.com/playlist?list=PL_1pt6K-CLoDMEbYy2PcZulTWEjqMfyoA

Python Project (Optional) -

- <https://www.youtube.com/watch?v=iwUli5glcU0>

5. Data Visualisation Tool - Power BI - WEEK 10

Topics to Cover

- https://medium.com/@data_analyst/complete-power-bi-topics-for-data-analysis-a45c085dbff9

Resources

- [Tableau for Beginners - Full Course](#) by Simplilearn (YouTube)
- [Power BI Full Course](#) by Simplilearn (YouTube)
- [Dashboard Design in Tableau](#) by Simplilearn (YouTube)
- [Interactive Dashboards with Power BI](#) by Simplilearn (YouTube)
- Kaggle Datasets (Use datasets to create dashboards)

Goal

- Create advanced visualizations and interactive dashboards.

6. Exploratory Data Analysis (EDA) - WEEK 11

Resources:

- [Exploratory Data Analysis in Python](#) by Simplilearn (YouTube)
- EDA with Pandas by Kaggle (Free Course)

Goal

- Learn how to explore datasets and uncover insights.

7. Portfolio Project and Resume Building

- **Goal:** Build a data analysis project portfolio and prepare your resume for job applications.
- **Resources:**
 - [Build Your Portfolio with Projects](#) by Data Professor (YouTube)
 - [GitHub for Data Analysts](#) by Tech with Tim (YouTube)
 - [Data Analyst Resume Tips](#) by CareerFoundry (YouTube)

Additional Practice Resources

- Kaggle Competitions (Participate in competitions)
- DataCamp Free Resources (Free Courses)
- [StrataScratch](#) (Free SQL Practice)

By following this roadmap, you'll build a strong foundation in data analysis, gain hands-on experience with tools and techniques, and create a portfolio that showcases your skills to potential employers.

ALL THE VERY BEST FOR YOUR PREPARATION!!!