

# DATA ANALYST ROADMAP - 2023

Start your career to data science in just **3 months**, this roadmap will help you to learn data science skills from **scratch**. This is a structured and detailed roadmap which includes:

tech skills + resources, projects, soft skills + resources, resume template + tips and interview preparation guide

## ➤ **Role of a Data Analyst**

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



## **Six steps of data analysis:**

- 1. Business Question:** Define what problem you want to solve
- 2. Get Data:** Collect the data required for analysis
- 3. Explore Data:** Explore data with visual exploration to understand what is in a dataset
- 4. Prepare Data:** Data cleaning, calculated fields and data validation
- 5. Analyze Data:** Use data analysis techniques to understand, interpret, and derive conclusions based on the requirements
- 6. Present Findings:** Share insights with stakeholders

**< In just 3 months you can START your career to data science >**

Let's Start! ➔

## Week – 1, 2

### 1. Excel

- Topics
  - Basic formulas: SUM, AVERAGE, MEAN, MEDIAN, SUMPRODUCT, 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
  - Complete Excel Tutorial in one video: <https://www.youtube.com/watch?v=OX-iyb-21tk>
  - Excel for beginner's playlist:  
<https://www.youtube.com/playlist?list=PLdOKnrf8EcP1Y1XRUVSUc0g-WfeiBigbd>
  - Google Template Gallery: <https://docs.google.com/spreadsheets/u/0/?ftv=1>
  - Full Excel Project: <https://www.youtube.com/watch?v=gTK5rNhWJyA>

### 2. Math and Statistics

- Topics
  - Basic Math: Arithmetic, Weighted average, Cumulative sum, Percentile
  - Basic Statistics: Mean, Median, Mode, Standard deviation, Normal distribution
- Resources
  - Note: just learn basics, initially don't go for phd 😊
  - Complete Statistics For Data Science In 6 hours By Krish Naik (watch only above mentioned topics): <https://www.youtube.com/watch?v=LZzq1zSL1bs>
  - Statistics Tutorial for Beginners by Simplilearn:  
<https://www.simplilearn.com/tutorials/statistics-tutorial>

## NEXT STEPs

- Create a professional LinkedIn profile
  - Add professional photo, headline, summary and educational details
- Make full Excel project and add to your resume/LinkedIn profile
- Optional: create a GitHub account

Hum honge kaamyaab.. 20% completed! 

## **Week – 3, 4, 5**

## **3. SQL**

- Topics
  - Basic Queries: SELECT, WHERE, DISTINCT, LIKE, BETWEEN, ORDER BY, LIMIT, GROUP BY, HAVING CLAUSE, INSERT, UPDATE, ALTER, IMPORT, Data types
  - Advance Queries: Date time function, Window function, Sub query, Case statement, CTE, query optimisation
  - JOINS: Inner, Outer, Left, Right
- Resources to learn SQL
  - SQL tutorial in one video: <https://www.youtube.com/watch?v=On9eSN3F8w0>
  - SQL for beginner's playlist:  
[https://www.youtube.com/playlist?list=PLdOKnrf8EcP17p05q13WXbHO5Z\\_JfXNpw](https://www.youtube.com/playlist?list=PLdOKnrf8EcP17p05q13WXbHO5Z_JfXNpw)
  - SQL Roadmap: <https://www.youtube.com/watch?v=xipnW2w5EfE>
  - W3schools website to learn SQL: <https://www.w3schools.com/sql/>
  - SQL Data Analysis Portfolio Project: <https://www.youtube.com/watch?v=VFluljswMKM>
  - SQL interview question's playlist:  
[https://www.youtube.com/playlist?list=PLdOKnrf8EcP1y\\_LPEv7uBpzoRmlATjCVR](https://www.youtube.com/playlist?list=PLdOKnrf8EcP1y_LPEv7uBpzoRmlATjCVR)

- Resources to practice SQL
  - W3schools: <https://www.w3schools.com/sql/>
  - Hacker rank sql: <https://www.hackerrank.com/domains/sql>
  - 8-week sql challenge- case study: <https://8weeksqlchallenge.com/>
  - Data lemur: <https://datalemur.com/>
  - Leetcode: <https://leetcode.com/problemset/database/>

## **NEXT STEP**

- Make full SQL projects and add them to your resume/ LinkedIn/ GitHub profile
- Connect with people on LinkedIn, who are working in data science industry

Hum honge kaamyaab.. 40% completed! 

## **Week – 6, 7**

## **4. BI Tools (Power BI or Tableau)**

**Note:** If you are a beginner, my personal suggestion will be to learn Power BI instead of Tableau- as its high in demand and feels similar to MS Excel

### **Power BI**

- Resources to learn Power BI
  - Power Bi Tutorial + Project Beginners: <https://www.youtube.com/watch?v=6cV3OwFrOkk>
  - Power BI Sales Dashboard & Forecasting: <https://www.youtube.com/watch?v=fZn83JRt4Nk>
  - Avi Singh YouTube channel: <https://www.youtube.com/watch?v=AGrl-H87pRU>
  - Power BI Full Course by edureka: <https://www.youtube.com/watch?v=3u7MQz1EyPY>
  - Power BI Udemy course: <https://www.udemy.com/course/powerbi-complete-introduction/>

- Power BI Projects
  - **Note:** Below are just examples, do a search on Google and YouTube for more projects- thoda khud bhi mehnat karo 😊
  - Power BI dashboard project End-to-end: <https://www.youtube.com/watch?v=j4xIVLgsmNQ>
  - Power BI dashboard by End-to-End: <https://www.youtube.com/watch?v=et8tAUTwcvY>
  - Power BI report by Data With Decision: <https://www.youtube.com/watch?v=0BKIUySopU4>
  - End to End Project by KSR datavizon: <https://www.youtube.com/watch?v=aXNhtcQ4nEU>

## Tableau

- Resources to learn Tableau
  - Tableau Basics For Beginners In Hindi by Great Learning: <https://www.youtube.com/watch?v=6RZEaEH9ZsQ>
  - Tableau by Edureka: <https://www.youtube.com/watch?v=aHaOlvR00So>
  - Tableau Tutorial by Simplilearn: <https://www.youtube.com/watch?v=fO7g0pnWaRA>
  - Tableau Udemy course: <https://www.udemy.com/course/tableau10/>
- Tableau Projects
  - **Note:** Below are just examples, do a search on Google/YouTube for more projects- thoda khud bhi mehnat karo 😊
  - Practice With Examples by Simplilearn: <https://www.youtube.com/watch?v=5uzB4z4iN0g>
  - Sales insights by codebasics: <https://www.youtube.com/watch?v=CCNd2fUfFkk&list=PLeo1K3hjS3usDI9XeUgjNZs6VnEOmeBrL>
  - Customer Analysis n Dashboard by Stanley: [https://www.youtube.com/watch?v=\\_qReGTOrKTk](https://www.youtube.com/watch?v=_qReGTOrKTk)

Hum honge kaamyaab ek din.. 60% completed! 🚀

# 5. Programming- Python

**Note:** If you are a beginner, my personal suggestion will be to **learn Python instead of R**- as its high in demand and beginner friendly. Also, it will help to solve Machine Learning problems

As a beginner learn programming language to an intermediate level, don't waste time to master it 

- Topics in Python:
  - Variables, Data types, Lists, Tuples, Dictionaries, Sets, Conditional expressions, Modules, Functions, Operators, if statements, Loops, classes and objects
  - Python libraries: Pandas and Matplotlib
  - Pandas: read/write csv, excel and JSON files, work with dataframe, data manipulation and analysis- Group by, Concatenate, Merge
  - Matplotlib: creating static, animated, and interactive visualizations in Python
- Resources to learn Python
  - Python Roadmap: <https://www.youtube.com/watch?v=AyMBPxxQRtA>
  - Python Tutorial For Beginners by CodeWithHarry:  
<https://www.youtube.com/watch?v=gfDE2a7MKjA>
  - Python Course by Udemy: <https://www.udemy.com/course/complete-python-bootcamp/>
  - W3schools website: <https://www.w3schools.com/python/>
  - Python for data science by freecodecamp: <https://www.youtube.com/watch?v=LHBE6Q9Xlzl>
  - Python Tutorial by Mosh: [https://www.youtube.com/watch?v=\\_uQrJ0TkZlc](https://www.youtube.com/watch?v=_uQrJ0TkZlc)
- Resources to learn Pandas and Matplotlib
  - Python for data science course by Udemy: <https://www.udemy.com/course/python-for-data-science-and-machine-learning-bootcamp/>
  - Pandas Tutorial by CodeWithHarry: <https://www.youtube.com/watch?v=RhEjmHeDNoA>
  - Pandas Tutorials by Krish Naik: <https://www.youtube.com/watch?v=BN0nnnadFl0>
  - Matplotlib Tutorial: <https://www.youtube.com/watch?v=VFSLjSc8GA>
  - Project- Cricket Data Analytics by Codebasics:  
<https://www.youtube.com/watch?v=4QkYy1wANXA>
  - Project- Covid Analysis by Simplilearn: <https://www.youtube.com/watch?v=G9NmACvXh8w>

- Solving real world data science tasks with Python Pandas by Keith Galli:  
<https://www.youtube.com/watch?v=eMOA1pPVUc4>
- Kaggle free dataset: <https://www.kaggle.com/datasets>

## **NEXT STEPs**

- Make a full project end-to-end using Python, above are just for example you can search more projects on GitHub, Kaggle, YT, Google

Hum honge kaamyaab ek din.. 80% completed! 

## **Week – 11 & 12**

## **6. Soft Skills**

- I. Communication skill
  - II. Analytical skill
  - III. Problem solving skill
  - IV. Story telling
  - V. Business understanding
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- Resources to work on soft skills
    - Read latest blogs on data science news, helps you keep updated and improve communication, business understand and storytelling skill
      - Example: towards data science website, news sites, LinkedIn learning, etc
    - Watch podcasts, interviews, industry level projects on YouTube
    - Share your learnings on LinkedIn or other social media platforms

## 7. Resume & Interview Prep

- Resume preparation

- Note: There is nothing called PERFECT resume, so keep learning and updating! 📝
- Prepare one page resume and use professional template
- Based on above learnings and projects update your resume
- Also, if you have done any courses/certificates do add them as well
- Tailor your resume based on the role/company you're applying
- Free resume template sites:
  - ✓ novo resume: <https://novoresume.com/resume-templates>
  - ✓ resume io: <https://resume.io/resume-templates>
  - ✓ canva resume: <https://www.canva.com/resumes/templates/>

- Interview preparation

- Note: Once you have completed all the above steps, just start applying for related jobs.  
Giving interview is also a part of your learning 😊
- Be thorough with your resume, even with minute details
- Again, watch podcasts and interview experience shared on YouTube
- Read interview questions available on sites like:
  - ✓ Glassdoor
  - ✓ LinkedIn

All the best- 100% completed! 🚀



**Let's connect now 😎**

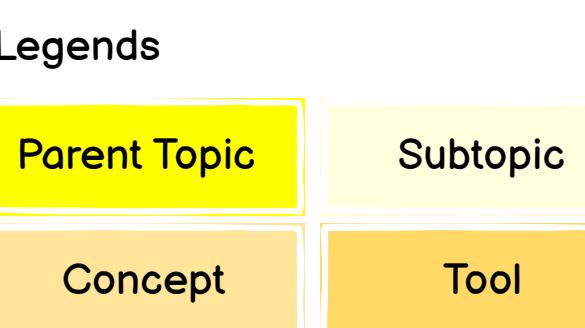
👉 **YouTube:** <https://www.youtube.com/@RishabhMishraOfficial>

👉 **Instagram:** <https://www.instagram.com/rishabhnsmithra/>

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# QA Engineer

Find the detailed version of this roadmap along with resources and other roadmaps

<https://roadmap.sh>

