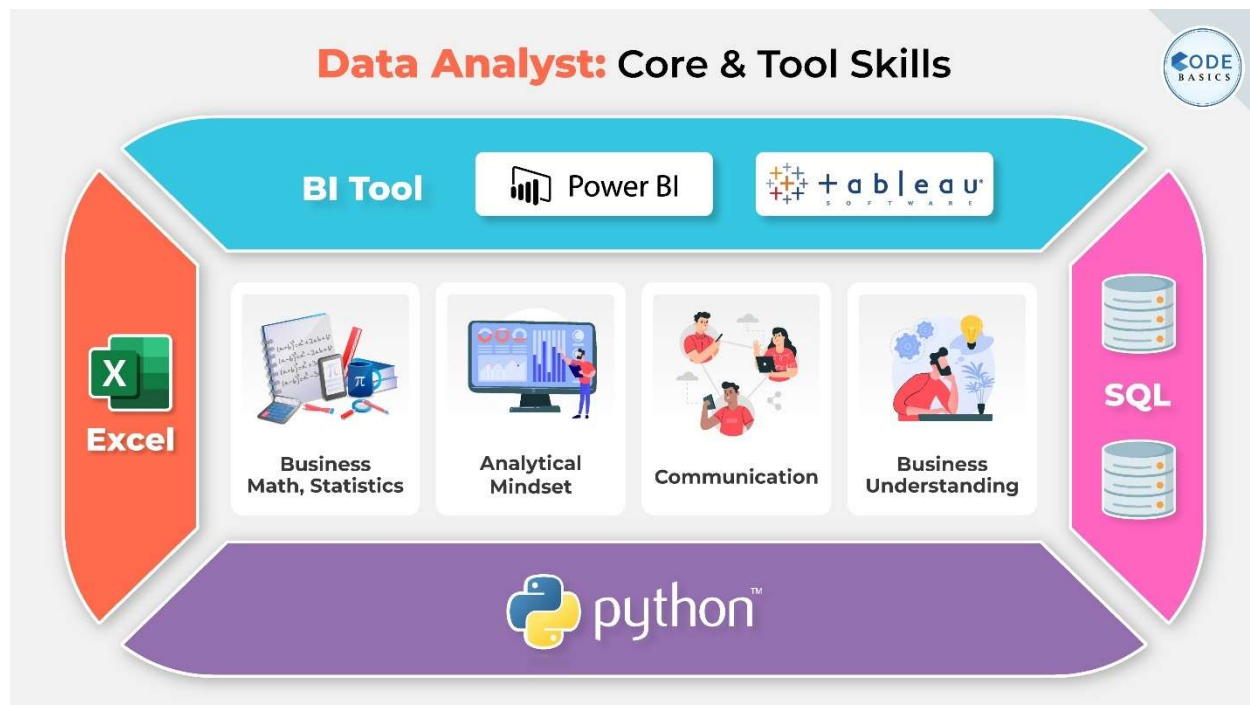# Data Analyst Roadmap for Beginners

Following is the roadmap to learn **Data Analyst** skills for a total beginner (**no coding** or **computer science background** needed). It includes FREE learning resources for technical skills (or tool skills) and soft (or core) skills.

Total Duration: **3 Months**

3 hours in Tool Skills + **1 hour** in Core Skills = **4 hours** study Every Day.

Week 1 and 2: Excel and Business Math/Statistics

- **Excel**
  - Topics
    - Basic Formulas: SUM, AVERAGE, PRODUCT, MEAN, MEDIAN, IF, SUMIF
    - Advanced Formulas: VLOOKUP, MATCH, INDEX
    - Pivot Tables
    - Basic Charting, Filters, Sorting

- Ignore VBA, Macros etc.
  - Resources
    - Google templates gallery for personal finance: https://docs.google.com/spreadsheets/u/0/?ftv=1
    - Budget planner: https://www.vertex42.com/ExcelTemplates/budgets.html
    - Chandoo's YouTube channel: https://www.youtube.com/@chandoo_

- **Business Math and Statistics**
  - Topics:
    - Business Math
      - Arithmetic, Percentages
        - YoY (Year over year) Growth or Decline: When Apple grew from 50 to 60 million, what is the % growth? Answer: 20 %
        - If below is the cell phone sales breakdown, what is the % Market Share of iPhone? Answer: 42.10%
          - iPhone - 40 billion
          - Samsun Galaxy -20 billion
          - Google Pixel – 5 billion
          - Others – 30 billion
    - Basic Statistics
      - Mean, Median, Standard Deviation, Bell Curve, Percentile
  - Learning Resources
    - https://www.khanacademy.org/
      - Intro to percentage https://www.khanacademy.org/math/pre-algebra/xb4832e56:percentages#xb4832e56:intro-to-percents
    - https://www.mathsisfun.com/
    - YouTube (codebasics YouTube channel will have a playlist on this in the future)

- **Assignment**

  ☐ Create your own budget sheet
  ☐ Create a professional looking LinkedIn profile
    - Have a clear profile picture, banner image (data analyst loading…)
    - Add tags such as: Open to work etc.

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Week 3, 4, 5: BI tools (Power BI or Tableau)

- **Power BI**
    - Track A
        - Sales insights Power BI project: https://bit.ly/3C1WKgA
        - Personal finance project:
          project: https://www.youtube.com/watch?v=pqSoCa2NGj4
        - HR data analytics project: https://bit.ly/3C7cw9P
    - Track B
        - Sales insights project tutorial playlist: https://bit.ly/3C1WKgA
        - My Power BI course that can make you job
          ready: https://codebasics.io/courses/power-bi-data-analysis-with-end-to-end-project

- **Tableau**
    - Codebasics sales insights project: http://bit.ly/3YQSBFV
    - HINDI codebasics sales insights project: https://bit.ly/3hZXUCb

- Should I learn Power BI or Tableau?
    - If someone asks me to pick between Power BI and Tableau, I always suggest Power BI as it is growing in popularity as compared to Tableau.
    - This Gartner research shows Power BI is leading a BI game: https://info.microsoft.com/ww-landing-2022-gartner-mq-report-on-bi-and-analytics-platforms.html?LCID=EN-US

- **LinkedIn - Soft Skill**
    - Start following prominent data analytics influencers
        - Hemanand Vadivel: https://www.linkedin.com/in/hemvad/
    - Increase engagement
        - Start commenting meaningfully on data analytics and career related posts
            - Helps network with others working in the industry build connections
            - Learning and brainstorming opportunity

- **Business Fundamentals - Soft Skill**
    - Learn business concepts from ThinkSchool and other YT Case Studies

- Example: How Amul beat competition: https://youtu.be/nnwqtZiYMxQ
  - o Learn P&L fundamentals
    - There are many data analyst positions in finance department of any company and learning P&L is super important for this role
    - Resource: Investopedia
    - Power BI course for integrated business and tech learning

- **Discord - Soft Skill**
  - o Start asking questions and get help from the community. This post shows how to ask questions the right way: https://bit.ly/3I70EbI

- **Assignment**

  ☐ Share your learning using a LinkedIn Post: Example: https://bit.ly/3GkqhEF
  ☐ Read and understand P&L statement of at least 3 public companies

Week 6 and 7: SQL

- **SQL**
  - o Topics
    - Basics of relational databases
    - Basic Queries: SELECT, WHERE LIKE, DISTINCT, BETWEEN, GROUP BY, ORDER BY
    - Advanced Queries: CTE, Subqueries, Window Functions
    - Joins: Left, Right, Inner, Full
    - Stored procedures and functions
    - No need to learn database creation, indexes, triggers etc. as those things are rarely used by data analysts
  - o Learning Resources
    - Track A
      - Khan academy: https://bit.ly/3WFku20
      - https://www.w3schools.com/sql/
      - https://sqlbolt.com/
    - Track B

- SQL course for data professionals:
  https://codebasics.io/courses/sql-beginner-to-advanced-for-data-professionals

- **Soft Skills**
  - Participate in one resume project challenge:
    https://codebasics.io/event/codebasics-resume-project-challenge
  - If you have a relevant background say in supply chain then pick that challenge.
  - Learn presentation skills
    - Death by PowerPoint: https://www.youtube.com/watch?v=Iwpi1Lm6dFo

- **Assignment**
  - ☐ Participate in one resume project challenge
  - ☐ Make a LinkedIn post: just text, no audio/video
    - Example post: https://bit.ly/3VwAGRY
    - Codebasics is promoting winning entries to employers. This way you can get interview calls. We do this in two ways
      - We have a database of employers hiring for data analyst positions. We send first 10 or 20 profiles based on their performance
      - Linkedin post by Dhaval (who has more than 100k followers and some of them are HR managers, data analytics senior managers): https://bit.ly/3jnni5c

Week 8, 9, 10: Python & Pandas

- **Python**
  - Topics
    - Variables, Lists, Dictionaries, Tuples, If condition, for loops, functions, modules, file handling, classes and objects, exception handling
  - Learning Resources
    - Track A
      - Codebasics python tutorials (first 16) - https://bit.ly/3X6CCC7
        - Codebasics python HINDI tutorials - https://bit.ly/3vmXrgw
        - Make sure to work on exercises in these folders: https://github.com/codebasics/py/tree/master/Basics/Hindi
    - Track B

- Python course: https://codebasics.io/courses/python-for-beginner-and-intermediate-learners

- **Pandas**
  - Topics
    - Dataframe basics
    - Reading data from csv/excel files
    - Handling missing data
    - Group by, Concat, Merge
  - Resources
    - Codebasics pandas playlist (first 9): https://www.youtube.com/playlist?list=PLeo1K3hjS3uuASpe-1LjfG5f14Bnozjwy
    - Kaggle datasets: https://www.kaggle.com/datasets
    - Kaggle notebooks: https://www.kaggle.com/notebooks

- **Project Management**
  - Scrum: https://scrumtrainingseries.com/
  - Kanban: https://youtu.be/jf0tlbt9lx0
  - Tools: JIRA, Notion

- **Assignment**
  - ☐ Participate in one resume project challenge
  - ☐ Make a LinkedIn post: with audio
  - ☐ Discord: Start helping people

Week 11, 12: Resume and Interview Prep

- **Resume Preparation**
  - Resumes are dying but not dead yet. Focus more on online presence
  - Here is the resume tips video along with some templates you can use for your data analyst resume: https://www.youtube.com/watch?v=buQSI8NLOMw

- **Interview Preparation**
  - SQL interview preparation
    - Use this website: https://datalemur.com/

- - Also check this YouTube channel: https://www.youtube.com/@techTFQ
  - o Power BI and other tech interview preparation
    - Playlist coming soon on codebasics YouTube channel
- **Job Applications**
  - o Cold emailing: https://youtu.be/tD_sQSzq6uY
  - o Job referrals. Use LinkedIn as much as you can
- **Assignment**
  - ☐ Participate in resume project challenge
    - These challenges help you improve technical skills, soft skills and business understanding
  - ☐ Make a LinkedIn post: this time with video
    - Example post: https://bit.ly/3WMTgGK (Naveen S)
  - ☐ Discord server participation

Tips of effective learning

- **Spend less time in consuming information, more time in**
  - o Digesting
  - o Implementing
  - o Sharing
- **Group learning**
  - o Use **partner-and-group-finder** channel on codebasics discord server for group study and hold each other accountable for the progress of your study plan. Here is the discord server link: https://discord.gg/r42Kbuk

Inspirational Stories

- Data analyst career transition success stories: https://bit.ly/3PUZ4f3

- BCom to data analyst transition success story: https://youtu.be/lqEzYDuTnvU