



Manoj Kumar

# How Data Analysts Use **Critical Thinking Skills** to Solve Problems in 2023





Manoj Kumar

# Introduction

Soft Critical thinking is the skill of analysing, evaluating, and reasoning logically and objectively.

Critical thinking skills help data analysts define the problem statement, choose the appropriate analytical techniques, and draw valid conclusions from the data.





Manoj Kumar

# PROBLEM IDENTIFICATION SKILLS

- Problem identification is the skill of defining the problem statement clearly and explicitly before starting the analysis.
- Problem identification helps data analysts focus on the relevant and important aspects of the problem and avoid wasting time and resources on irrelevant or trivial issues.

Example: A data analyst who wants to increase customer retention rate starts by asking: What is the current customer retention rate? Why is it important to increase it? Who are the target customers? How can we measure customer retention rate?





Manoj Kumar

## DATA COLLECTION SKILLS

- Data collection is the skill of gathering relevant and reliable data from various sources to support the analysis
- Data collection helps data analysts obtain sufficient and accurate information to answer the problem statement and test their hypotheses

Example: A data analyst who wants to increase customer retention rate collects data from different sources such as customer surveys, transaction records, web analytics, social media, etc.





Manoj Kumar

# DATA ANALYSIS SKILLS

- Data analysis is the skill of applying appropriate analytical techniques to process, manipulate, and interpret the data
- Data analysis helps data analysts explore, understand, infer, predict, and prescribe solutions from the data

Example: A data analyst who wants to increase customer retention rate uses descriptive analytics to summarize the current situation, exploratory analytics to identify patterns and trends, inferential analytics to test hypotheses and draw conclusions, predictive analytics to forecast future outcomes and behaviors, and prescriptive analytics to recommend optimal actions and strategies





Manoj Kumar

## DATA EVALUATION SKILLS

- Data evaluation is the skill of assessing the quality, validity, and reliability of the data and the analysis
- Data evaluation helps data analysts ensure that their findings and recommendations are based on sound evidence and logic

Example: A data analyst who wants to increase customer retention rate evaluates their data and analysis by checking for errors, biases, outliers, assumptions, limitations, uncertainties, etc.





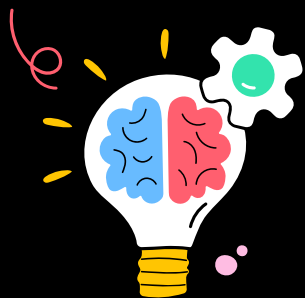
Manoj Kumar

# DATA COMMUNICATION SKILLS

- Data communication is the skill of communicating insights from data analysis in a clear, engaging, and persuasive way
- Data communication helps data analysts convey complex information in a simple and intuitive way, and persuade their audience to take action

Example: A data analyst who wants to increase customer retention rate communicates their insights using a dashboard that shows the key metrics and trends for customer retention rate, and a report that explains the analysis process, results, and recommendations





Manoj Kumar

# HOW TO IMPROVE YOUR CRITICAL THINKING SKILLS

Practice defining clear and specific problem statements.

Practice collecting relevant and reliable data from various sources.

Practice applying appropriate analytical techniques to process, manipulate, and interpret the data.

Practice evaluating your data and analysis by checking for errors, biases, outliers, assumptions, limitations, uncertainties, etc.

Practice communicating your insights from data analysis in a clear, engaging, and persuasive way.







Manoj Kumar

# LOOKING FOR TRANSITION TO DATA ANALYTICS WITH MINIMUM FRICTION?

I'm here to help you with your quest  
to build a career in data analytics.

Book a 1:1 call with me today and let's  
get started!

[https://topmate.io/mk\\_analytics/220958](https://topmate.io/mk_analytics/220958)



<https://www.linkedin.com/in/mk-analytics>