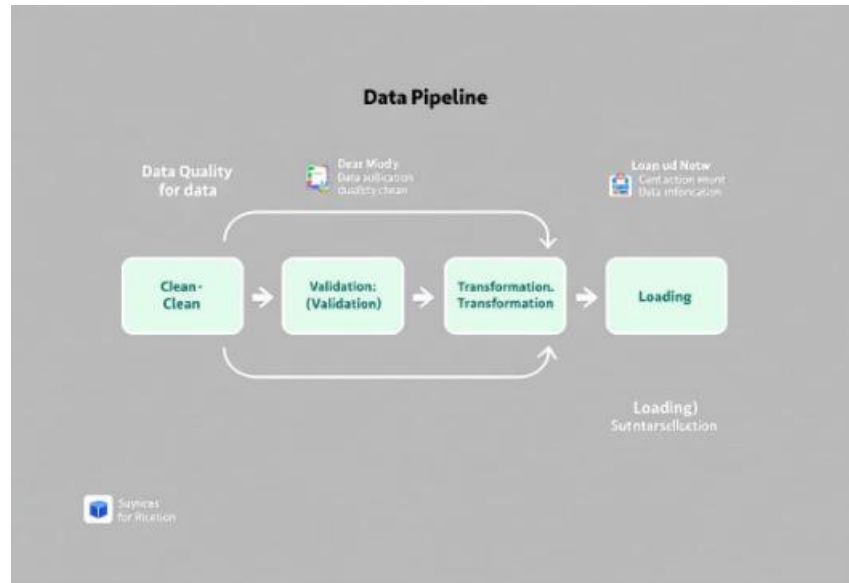




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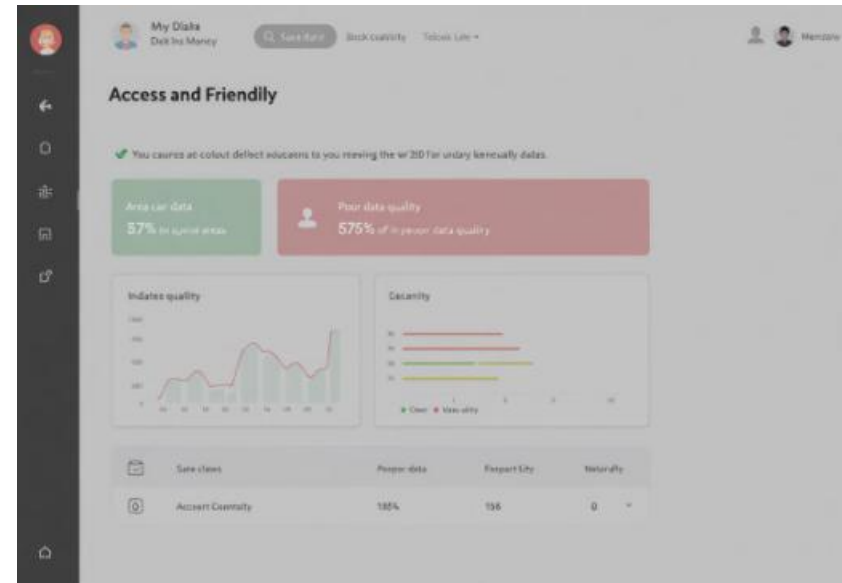
HARIKA YENUGA

INTRODUCTION TO DATA QUALITY



Definition

Data quality measures how well data is suited for its intended use, like running operations, making decisions, or planning strategies.



Importance

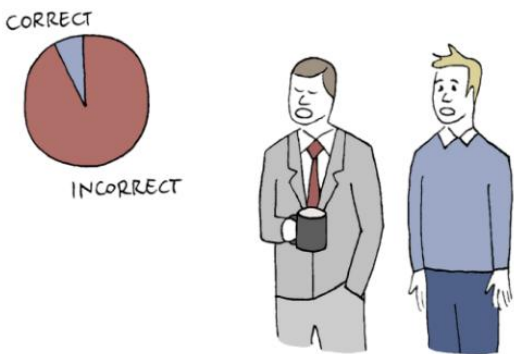
Good data is crucial for making good decisions and running a business smoothly. It helps companies make informed choices, improve processes, and achieve their goals.



Challenges

Companies often face issues like inconsistent data, incomplete records, mistakes, and differences between different systems. These problems can happen due to errors in data entry, outdated information, or conflicting data sources.

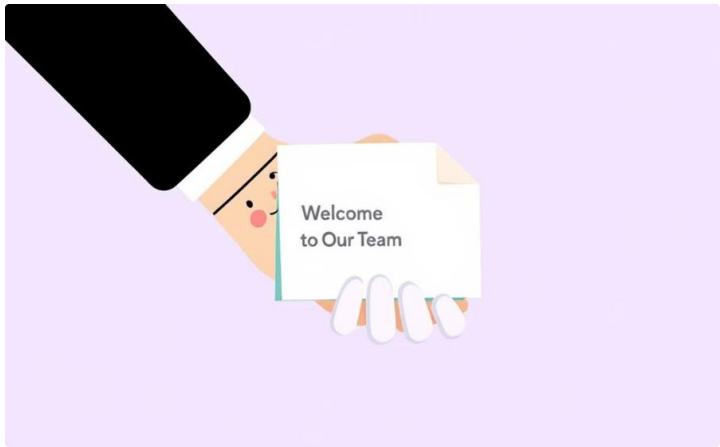
PRINCIPLES OF DATA QUALITY



KNOWING THE EXACT QUALITY OF OUR DATA GIVES ME CONFIDENCE.

Proactive Approach

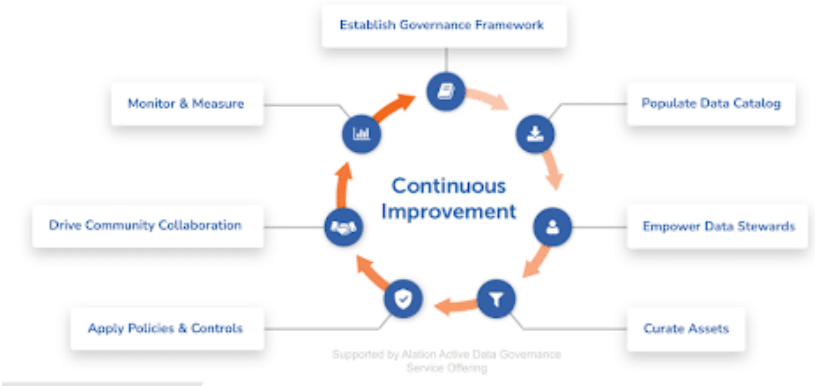
Address data quality issues at the source to prevent downstream problems.



Data Ownership

Designate clear data owners responsible for maintaining the accuracy and completeness of their respective data sets.

Active Data Governance – Required Steps



Continuous Improvement

Regularly assess and enhance data quality processes and standards for ongoing improvement.



Data Governance and Stewardship

Establish clear roles and responsibilities for data quality oversight and accountability.



Cross-functional Collaboration

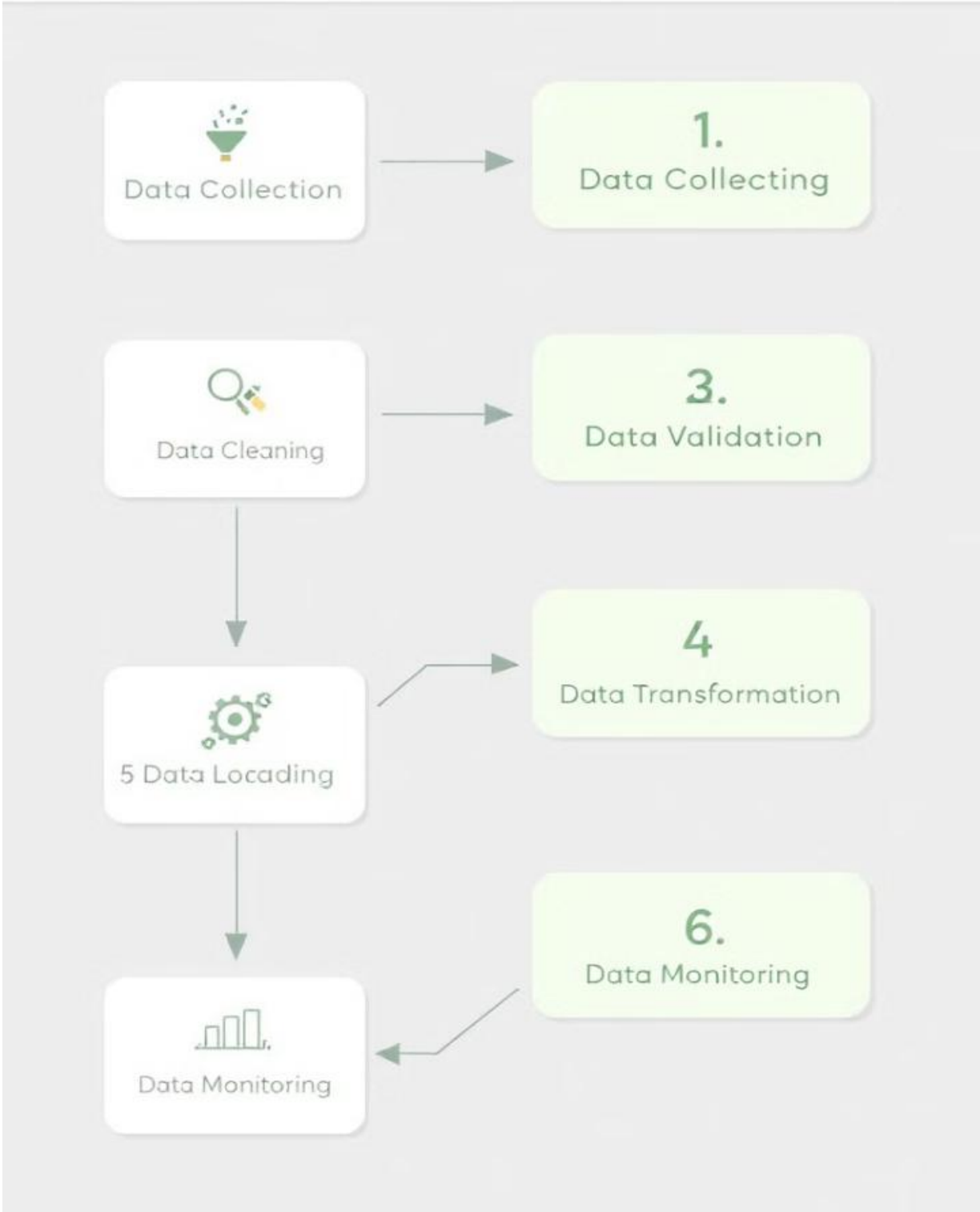
Involve all stakeholders in data quality initiatives for a comprehensive approach.



Documentation and Metadata

Maintain comprehensive documentation and metadata about data sources, definitions, and quality metrics for better understanding and management.

THE DATA QUALITY - QUALITY IMPLEMENTATION PROCESS



IMPLEMENTATION GUIDELINES

1

Define Standards

- Establish standards tailored to your organization's needs.
- Ensure these cover key dimensions like accuracy, completeness, and consistency.

2

Implement Controls

- Implement validation checks during data entry and processing workflows.
- Automate error detection to identify issues early.

3

Monitor and Report

- Regularly assess data quality using metrics and dashboards.
- Share findings with stakeholders to ensure accountability.

DATA QUALITY DIMENSIONS



Accuracy



Completeness



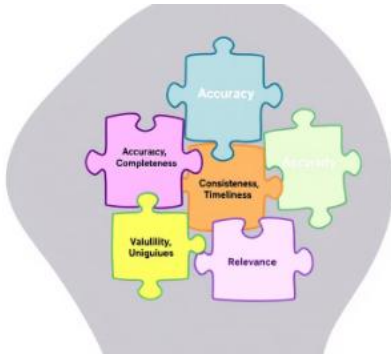
Timeliness



Consistency



Accessibility



Relevance



Uniqueness

DATA QUALITY



Prevention

Implement data validation rules at the point of entry to prevent errors.



Correction

Develop processes for data cleansing and enrichment to improve overall quality.



Detection

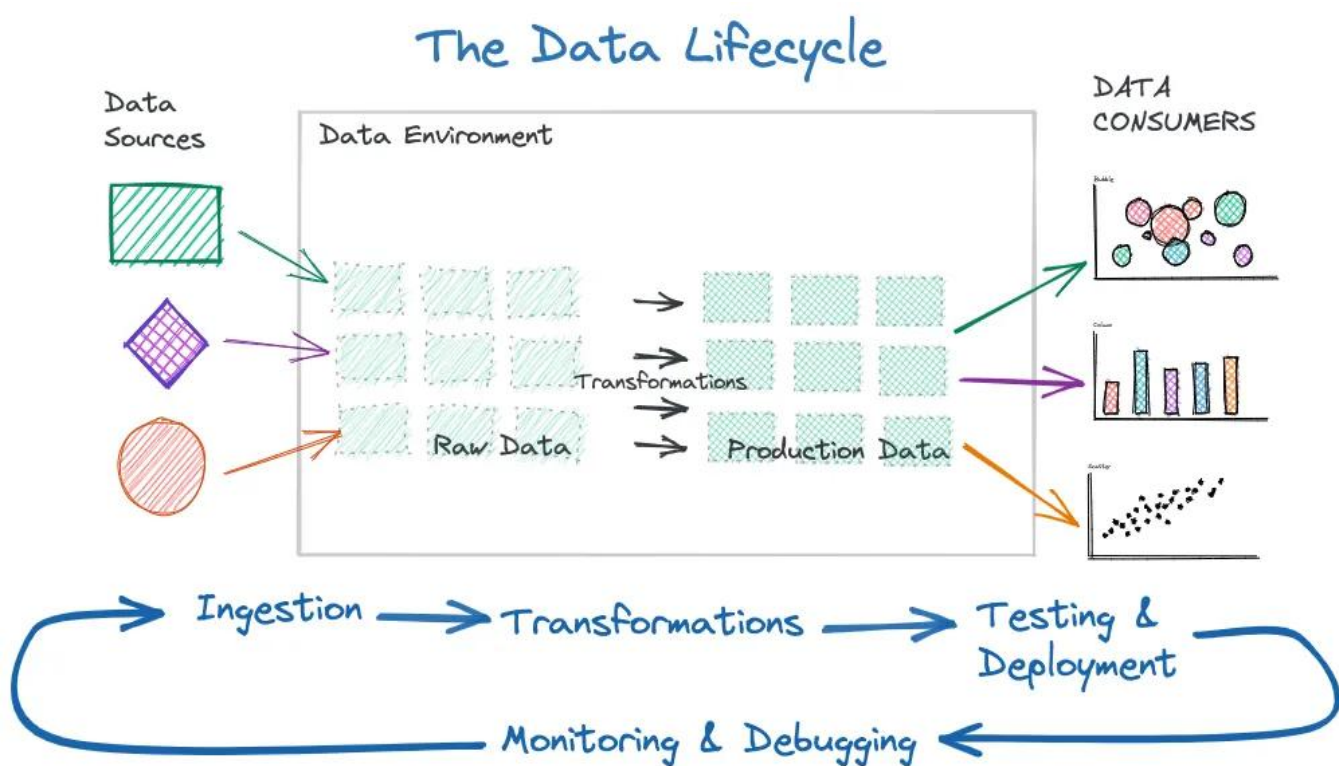
Use automated tools to identify data quality issues across systems.





DATA QUALITY ASSESSMENT TECHNIQUES

Technique	Description	Application
Data Profiling	Analyze data to discover patterns and anomalies	Identify data quality issues
Statistical Analysis	Use statistical methods to evaluate data quality	Measure data consistency and accuracy
Rule-based Validation	Apply predefined rules to check data integrity	Ensure data meets business requirements



DATA QUALITY IMPROVEMENT STRATEGIES



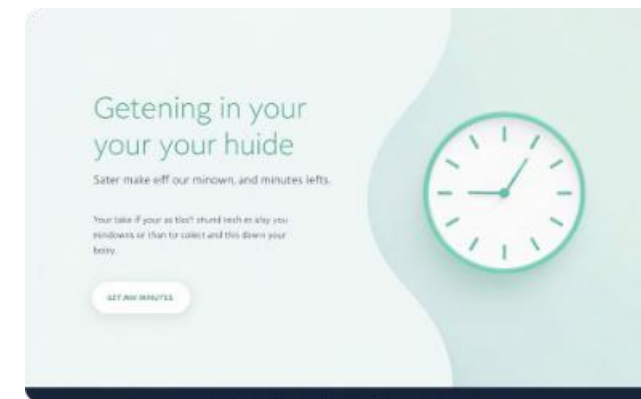
Root Cause Analysis

Identify and resolve the root causes of data quality issues, such as poorly designed data entry forms, outdated sources, or missing information.



Data Cleansing

Set up automated and manual processes to identify and fix data issues, such as duplicates, incorrect formats, and missing values, ensuring consistent and accurate data.



Continuous Monitoring

Implement regular data quality checks and set up alerts to notify when metrics fall below predefined thresholds, enabling proactive issue detection and resolution.



Training and Awareness

Train the team on the importance of data quality, best practices for data entry, validation rules, and the impact of poor data quality.

DATA QUALITY GOVERNANCE AND STEWARDSHIP

Data Quality – Simple 6 Step Process



Define Business Goals

Define the business goals for data quality improvement

Develop Improvement Plans

Design and develop improvement plans based on prior analysis

Assess Existing Data State

Assess existing data against multiple quality dimensions

Implement Solutions

Implement solutions determined in Improvement stage

Analyze Results

Analyze the assessment results for gaps with respect to goals

Setup Control Process

Verify at periodic intervals that the data is consistent with business goals

1

Establish Policies

Develop comprehensive data quality policies and standards

2

Assign Responsibilities

Designate data stewards to oversee data quality in their domains.

3

Implement Controls

Integrate data quality checks into business processes and systems.

4

Monitor and Report

Regularly assess and communicate data quality metrics to stakeholders.



CONCLUSION AND KEY TAKEAWAYS

- 1

Holistic Approach

Data quality needs a complete plan that includes people, processes, and technology.
- 2

Continuous Improvement

Check and improve data quality regularly to keep up with changing needs.
- 3

Stakeholder Engagement

Get everyone in the company involved in data quality for long-term success.

Implementing Data Quality Frameworks



Thank
you!

