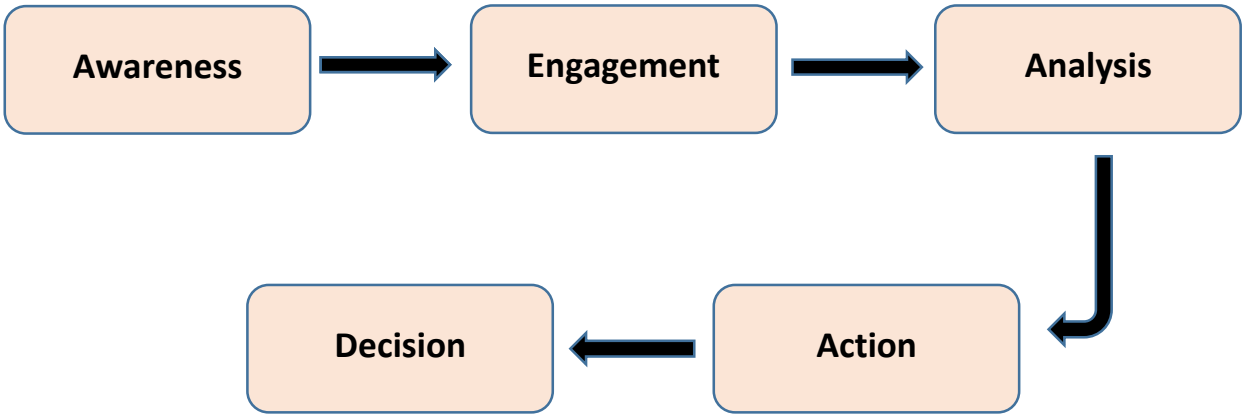
FINAL REPORT

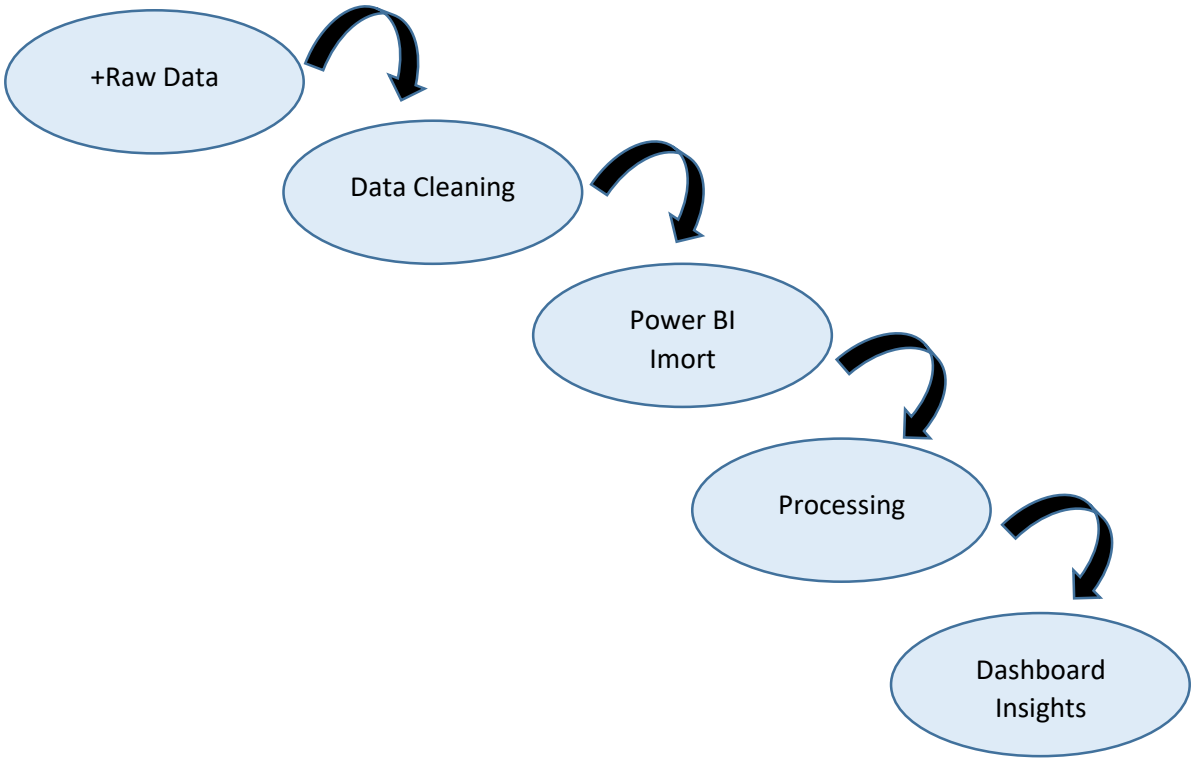
Customer Journey Map

A Customer Journey Map (CJM) helps visualize how users interact with the Global Food Production Trends and Analysis project. It tracks the experience from discovering the dashboard to making insights-driven decisions.



Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) illustrates how data moves through the system, from raw data collection to visual representation in Power BI.



Solution Requirement

This section defines the requirements needed for the project, including data, functionality, and outputs.

Key Requirements

✅ Data Requirements

- Global food production dataset (1961-2023)
- Country-wise & category-wise data

✅ Functional Requirements

- Data visualization in Power BI
- Filters & slicers for interactive analysis
- Export & report generation

✅ Performance Requirements

- Quick loading of large datasets
- Real-time interactivity without lags

✅ Security Requirements

- Read-only access for users
- Data integrity maintained

Technology Stack :

A Technology Stack defines the tools & technologies used in the project.

Component	Technology Used
Data Storage	Excel / CSV Dataset
Data Processing	Power BI (Data Model, DAX, Queries)
Visualization	Power BI (Bar Chart, Line Graphs, Maps)
Deployment	GitHub (for sharing project)

Problem Solution Fit

Problem-Solution Fit refers to how well the proposed solution addresses the identified problem.

Problem Statement

- Food production data is scattered and difficult to analyze.
- Researchers, policymakers, and analysts lack a centralized, interactive tool for analysis.
- No visual insights to identify trends, top food-producing countries, or food security challenges.

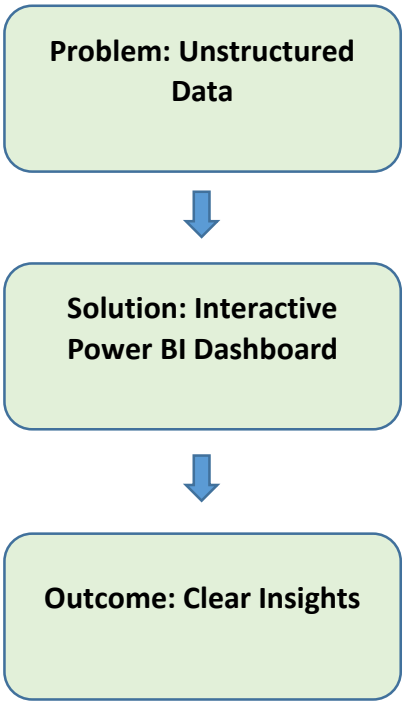
Solution Fit

✓ Centralized Power BI Dashboard for easy data visualization.

✓ Interactive charts & filters to explore trends over time.

✓ Data-driven insights for decision-making in agriculture and food policies.

Problem-Solution Fit Diagram:



Proposed Solution

This section explains the approach to solving the problem using Power BI. Proposed Steps

1. Data Collection: Gather global food production data from FAO & government sources.
2. Data Cleaning: Remove errors, duplicates & format the dataset.
3. Data Processing: Load into Power BI and apply DAX formulas & transformations.
4. Dashboard Creation: Build interactive visualizations (bar charts, line graphs, maps).
5. Interactivity: Add filters (year, country, food type) for dynamic insights.

6. Deployment: Share reports via GitHub, Google Drive, or Power BI service. Proposed Solution Benefits

✅ Real-time insights for users.
✅ Easy-to-use, no coding needed for analysis.
✅ Scalable solution for different datasets & time ranges.

Solution Architecture

Solution Architecture defines the technical structure of the project, from data input to user interaction.
Solution Architecture Components

🔹 Data Source: Excel / CSV file with food production records (1961-2023).

🔹 Processing Layer: Power BI's Power Query, DAX, and Data Model for transformation.

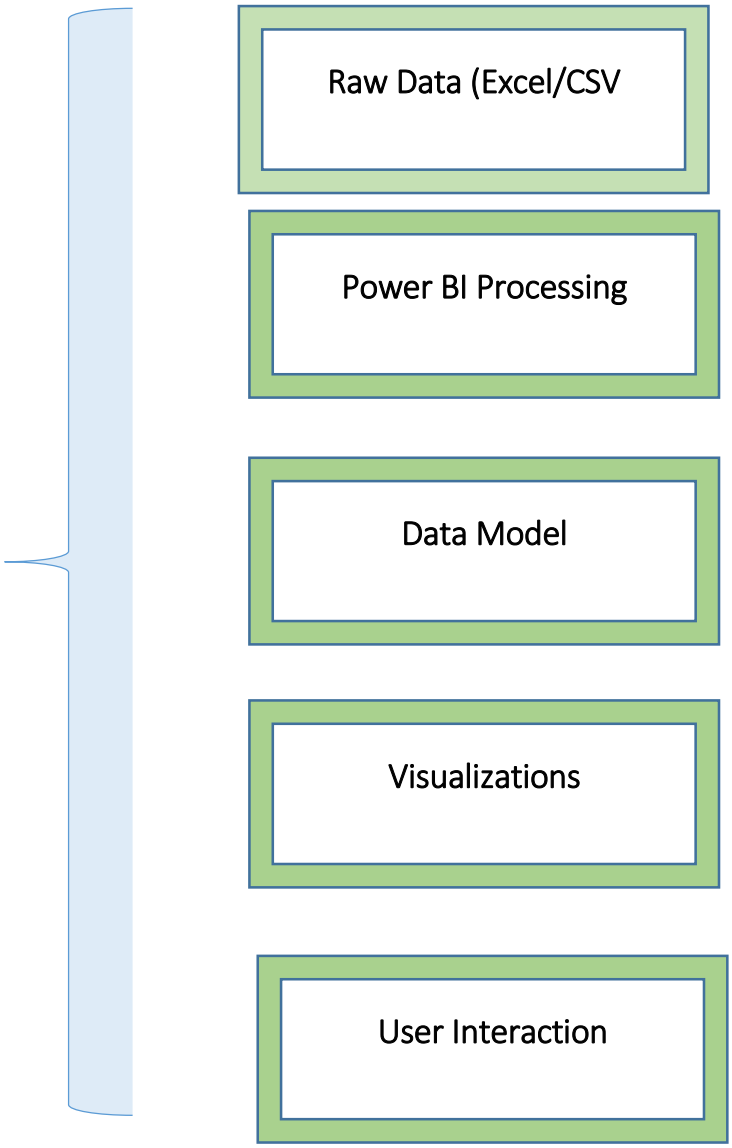
🔹 Visualization Layer: Power BI reports with charts, maps, slicers.

🔹 User Interaction: Filters & drill-through to explore trends dynamically.

🔹 Deployment: GitHub repository for file sharing & project submission.

Solution Architecture Diagram

Solution Architecture Diagram



Project Planning Template :

"Global Food Production Trends and Analysis"

A **Project Planning Template** helps in organizing tasks, timelines, and resources effectively. It ensures that the project follows a structured approach from start to completion.

Project Planning Template Structure :

Phase	Tasks	Deliverables	Timeline	Responsible Person
Ideation Phase	Define problem, research trends, create empathy map	Problem Statement, Brainstorming Notes	Week 1	Research Team
Requirement Analysis	Define data sources, create data flow & customer journey map	DFD, Technology Stack, CJM	Week 2	Data Analysts
Project Design	Define architecture, finalize visualizations	Solution Architecture, Dashboard Layout	Week 3	BI Developer
Development Phase	Clean & process data, build Power BI dashboard	Power BI Dashboard	Week 4-5	BI Developer
Testing & Validation	Performance testing, fixing issues	Test Reports	Week 6	QA Team
Deployment & Documentation	Publish on GitHub, create user documentation	GitHub Repository, Reports	Week 7	DevOps, Tech Writer

Key Highlights of Planning :

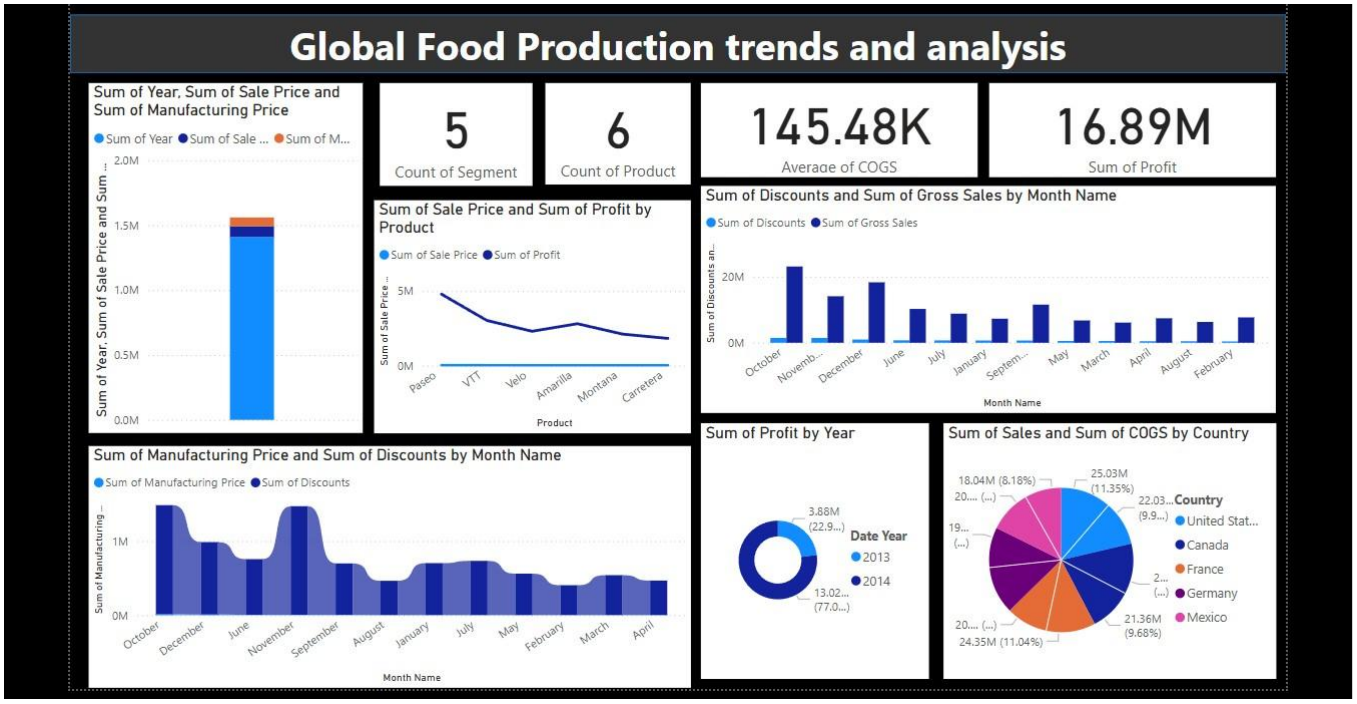
✅ **Clear Timeline & Deliverables** – Ensures step-by-step execution.
✅ **Defined Responsibilities** – Assigns tasks to specific teams.
✅ **Structured Execution** – Avoids last-minute issues by following a planned approach.

Project file:

Dataset:

https://www.kaggle.com/datasets/rafsunahmad/world-food-production

Output screenshots:


Global Food Production trends and analysis
Sum of Year, Sum of Sale Price and Sum of Manufacturing Price
Sum of Year
Sum of Sale ...
Sum of M...
2.0M
1.5M
1.0M
0.5M
0.0M
Sum of Year, Sum of Sale Price and Sum ...
5
Count of Segment
6
Count of Product
145.48K
Average of COGS
16.89M
Sum of Profit
Sum of Sale Price and Sum of Profit by Product
Sum of Sale Price
Sum of Profit
5M
0M
Sum of Sale Price ...
Paseo
VTT
Velo
Amarilla
Montana
Carretera
Product
Sum of Discounts and Sum of Gross Sales by Month Name
Sum of Discounts
Sum of Gross Sales
20M
0M
Sum of Discounts an...
October
Novemb...
December
June
July
January
Septem...
May
March
April
August
February
Month Name
Sum of Manufacturing Price and Sum of Discounts by Month Name
Sum of Manufacturing Price
Sum of Discounts
1M
0M
Sum of Manufacturing ...
October
December
June
November
September
August
January
July
May
February
March
April
Month Name
Sum of Profit by Year
3.88M (22.9...)
13.02... (77.0...)
Date Year
2013
2014
Sum of Sales and Sum of COGS by Country
18.04M (8.18%)
25.03M (11.35%)
22.03... (9.9...)
19... (...)
2... (...)
20.... (...)
21.36M (9.68%)
24.35M (11.04%)
Country
United Stat...
Canada
France
Germany
Mexico