Data-Driven Decision Making (DDDM)

Definition:

Data-Driven Decision Making means **using data, facts, and insights** (not just intuition) to make business decisions.

In this approach, every choice — marketing, hiring, production, design, etc. — is based on **evidence extracted from data**.

💡 Example: Amazon recommends products by analyzing billions of customer purchases rather than guessing what people might like.

Why It Matters:

- Leads to **better accuracy** and **less bias**
- Helps **predict outcomes** (e.g., sales, demand)
- Improves **efficiency and profitability**
- Enables **continuous improvement** with real-time data

👥 Roles in Data-Driven Decision Making

Each team member plays a unique part in turning raw data into business value.

Role	Main Responsibility	Key Skills/Tools	Example Task
Data Analyst	Interprets and visualizes data to find insights.	SQL, Excel, Power BI, Tableau, Python (Pandas, Matplotlib)	Create sales dashboard or report on customer trends.
Data Engineer	Builds and maintains data infrastructure — pipelines, databases, and ETL processes.	Python, SQL, Spark, Hadoop, AWS, Airflow	Set up automated system to move raw data to data warehouse.
Data Scientist	Analyzes complex data using statistics and machine learning to make predictions.	Python (Scikit-learn, TensorFlow), R, SQL	Predict customer churn or recommend new products.
Machine Learning Engineer	Deploys, optimizes, and scales ML models in production.	Python, TensorFlow, PyTorch, Docker, Kubernetes	Build recommendation engine or fraud detection system.
