Module 2: Database Architectures

1. Relational Database Systems

- **Flat Data**
  - It's data that contains values in all cells within the table.
- **ACID Compliance**
  - **A**tomicity, **C**onsistency, **I**solation & **D**urability.

2. NoSQL

- **Key-value stores**
- **Document stores**
- **Wide-column stores**
- **Graph stores**

3. Data Warehousing

- **OLTP VS OLAP**

	OLTP	OLAP
Nature	Constant transactions (queries/updates)	Periodic large updates Complex queries
Examples	Accounting database Online Retail transactions	Reporting Decision support
Type	Operational data	Consolidated data
Data retention	Short term (2-6 months)	Long-term (2-5 years)
Storage	GB	TB/PB
Users	Many	Few
Protection	Robust, constant data protection and fault tolerance	Periodic protection

- **Data Mart**

Data Warehouse	Data Mart
enterprise-wide data	department-wide data
multiple subject areas	single subject area
Complex	Less complex

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