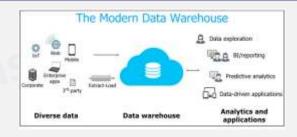


CLOUD COMPUTING APPLICATIONS

Analytics in the Cloud Prof. Reza Farivar

Data Analytics

- Business Intelligence (BI)
 - Set of technologies and processes that use data to understand and analyze business performance
- Data Analytics: the science of examining data to draw conclusions
 - A subset of BI
- Analytics is the discovery, interpretation, and communication of meaningful patterns in data
- extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions



Advanced Analytics

Business Intelligence:

- "dark matter" of analytics—the necessary, but relatively simple, questions that will need to be answered frequently:
 - current inventory, number of customers, incoming/outgoing payments, average number of purchases per customer, etc.
- Presented in dashboards, simple data plots and reports

Advanced Analytics:

- More complex statistical techniques and machine learning generate predictions and identify key performance indicators
- Models of future consumer behavior based on past data
- Fraud detection and recommender systems

OLTP vs OLAP

OLTP

- Online Transaction Processing System
- typically involve most or all of the columns in a row for a small number of records
- Using a database to run your business
- RDBMS
 - Structured Data
 - SQL
 - Each query returns a small number of records

OLAP

- Online Analytical Processing System
- read only a few columns for a very large number of rows
- Using a database to understand your business
- Data Warehouse
 - Structured Data
 - SQL
 - Each query covers many or all of the records
 - Typical query involves one column

Different access patterns