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ITRW 321
SU4 Summary

Business Intelligence and Data Warehouses

The need of data Analysis:

Can give insightful info of short term tactical evaluations and questions that are strategic.

Business Intelligence:

Comprehensive, cohesive and integrated set of tools and processes that is used to gather, integrate, store and analysis of data to present information to aid decision making of a business.

The framework provided by business intelligence:

- Collect and store operational data.
- Combining the operational data to decision support data.
- To generate info by the analysis of decision support data.
- Provide information to the end user that will support the business decisions made.
- Make business decisions, that will generate more data that is stored.
- Monitor the results to evaluate the outcomes of business decisions.
- Accurately predicting future behaviours and outcomes.

Basic Business intelligence architectural components:

- ETL tools
- Data store
- Query and reporting
- Data visualization
- Data monitoring
- Data analytics

Popular BI tools:

- Dashboards- Technologies that performance indicators for businesses.
- Portals-provides unified, single entry for the distribution of information.

Key performance indicators:

- General
- Finance
- Human resources
- Education

Reporting styles of a Business intelligence system:

- Advanced reporting
- Monitoring
- Alerting
- Advanced data analytics

Benefits of BI:

- Integrated architecture
- UI for date analysis and reporting.
- Data repository fosters single version of data.
- Improves the organizational performance.

Decision support system:

Computer tools to aid in decision making for the business.

Decision support data are different to operational data in these 3 areas; time, granularity and dimensionality.

Data warehouse:

Data that helps in decision making. The in a data warehouse is integrated, subjected, oriented and not volatile.

Star schema:

A technique used in data modelling to map multiple decision support data to a relational based database.

Components;

- Facts
- Dimensions
- Attributes
- Hierarchies of attributes

Performance Improving techniques of the Star schema:

Techniques that are used for data warehouse optimization;

- Normalize dimension tables
- Maintenance of multiple fact tables
- Fact table denormalization
- Replicating and portioning of tables

Online Analytical Processing:

A business intelligence type with a system with data multidimensional analysis strategies, progressed support of the database and a easy to learn user interface.

Must have features of OLAP:

- Access to several types of DBMS’s
- Progressed navigation features and fast response time.

Architecture of OLAP:

- GUI
- Analytical processing logic
- Data processing logic

Relational OLAP:

Use relational databases and query tools to store and analyse data that is multidimensional.

Multidimensional OLAP:

Extension of OLAP for the multidimensional database management systems.