Leonard Wassenaar

25948083

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.