…… are used to make business decisions often based on data collected by On-line Analytical-Processing systems OLAP.

[Decision-support systems]

……. that the system is computer-based and extends the user’s capabilities.

[Assumption]

……. is a process by which organizational goals (outputs) are achieved through the use of resources (inputs)

[Management]

Productivity = Outputs / Inputs

….. Is a collection of objects such as people, resources, concepts, and procedures intended to perform an identifiable function or to serve a goal.

[SYSTEM]

Inputs, Processes and Outputs part of system.

A system surrounded by an environment.

A system frequently include feedback.

…… convert or transform inputs into outputs

[Process]

…… describe finished products or consequences of being in the system.

[Outputs]

…… is the flow of information from the output to the decision maker

[Feedback]

……. contains the elements that lie outside but impact the system's performance.

[Environment]

…… model-based set of procedures for processing data and judgments to assist a manager (decider) in his decision making.

[DSS]

…… is a simplified representation or abstraction of (complex) reality.

[Model]

….. Physical replica of a system.

[Iconic (Scale) Model]

…… behaves like the real system but does not look like it (symbolic representation).

[Analog model]

…… Models use mathematical relationships to represent complexity used in most DSS analyses

[Mathematical (Quantitative)]

…… is a set of evenly spaced numerical data obtained by observing response variable at regular time periods.

[Time series]

….. That uses a series of past data points to make a forecast.

[Forcasting technique]

….. Technique for conducting experiments with a computer on a model of a management system

[Simulation]

….. The problem is identified and defined.

[Intelligence phase]

….. The model is validated and evaluation criteria are set

[Design phase]

….. Includes a proposed solution to the model.

[Choice phase]

….. Solution to the original problem.

[Implementation phase]

….. are routine problems for which standard solution methods exist.

[Structured problems]

….. are fuzzy, complex problems for which there are no cut-and-dried solution methods.

[Unstructured problems]

…… is a decision problem in which some but not all of the phases are structured.

[Semi-structured problem]

….. is an integrated, subject-oriented, time-variant, non-volatile database that provides support for decision making.

[Data Warehouse]

Knowledge based on (facts and hypotheses)

…... discovers association rules showing attribute-value conditions that occur frequently together in a set of data

[Association analysis]

…... is a subject-oriented, integrated, time-variant, and non volatile collection of data in support of management’s decision-making process.

[Data warehouse]

….. Organized around major subjects, such as product, sales.

[Subject-Oriented]

….. Constructed by integrating multiple, heterogeneous data sources.

[Integrated]

….. Data warehouse data provide information from a historical perspective.

[Time Variant]

…… Requires only two operations in data accessing: initial loading of data and querying.

[Non-Volatile]

….. Identify all of the materialized cuboids that may potentially be used to answer a query.

[Partial materialization]

…… Major task of traditional relational DBMS; Day-to-day operations, example purchasing, inventory, banking.

[OLTP]

….. Major task of data warehouse system; used in data analysis and decision making.

[OLAP]

…… is based on a multidimensional data model which views data in the form of a data cube.

[Data warehouse]

….. Allows data to be modeled and viewed in multiple dimensions.

[Data cube]

….. Estimating the costs of using the remaining materialized cuboids and selecting the cuboid with the least cost.

[Partial materialization]

…… contains measures and keys to related dimension tables.

[Fact table]

….. A fact table in the middle connected to a set of dimension tables.

[Star schema]

….. Represents dimensional hierarchy by normalizing the dimension tables.

[Snowflake schema]

….. Multiple fact tables share dimension tables.

[Fact constellations]

….. Summarize data by climbing up hierarchy or by dimension reduction.

[Roll up (drill-up)]

…… reverse of roll-up, from higher level summary to lower level summary or detailed data, or introducing new dimensions.

[Drill down (roll down)]

….. Reorient the cube.

What is the three of Data Warehouse Models ?

[1- ……. , 2- …….. , 3- ……… ]

…… collects all information about subjects that span the entire organization.

[Enterprise warehouse]

…… Departmental subsets that focus on selected subjects: Faster roll-out and Complex integration in the long term.

[Data mart]

…... A set of views over operational databases.

[Virtual warehouse]

…… Leaves detail values in the relational fact table

[Relational OLAP && Hybrid OLAP]

...... Stores aggregated values in the relational database as well.

[Relational OLAP]

…… Stores both detail and aggregated within the cube.

[Multidimensional OLAP]

…… Stores aggregated values in the cube.

[Hybrid OLAP]

….. Each value in the column has a bit vector

[No materialization & Indexing OLAP Data & Bitmap Index]

….. Pruning the above set using knowledge of dominance relationship among cuboids.

[Partial materialization]

….. A small subcube which fits in memory.

[Chunks]

An effective …… technique for attributes with low-cardinality domains.

[Indexing]

…… get data from sources.

[Data extraction]

…… detect errors in the data and rectify them when possible.

[Data cleaning]

…… convert data from host format to warehouse format.

[Data transformation]

…... sort, summarize, consolidate, compute views, check integrity, and build indices and partitions.

[Load]

….. Propagate the updates from the data sources to the warehouse.

[Refresh]

…… integrates OLAP with Data mining.

[OLAM] M = mining

…... based exploratory data analysis.

[OLAP]

…... integration and swapping of multiple mining functions, algorithms, and tasks.

[On-line selection of data mining functions]

…… provides a framework for making important decisions.

[Decision Analysis]

…… allows us to select a decision from a set of possible decision alternatives when uncertainties regarding the future exist.

[Decision Analysis]

….. an occurrence over which the decision maker has no control.

[State of nature (Event)]

…… Choose the alternative that maximizes the maximum outcome for every alternative (Optimistic criterion)

[Maximax]

…… chose the alternative with the highest average outcome.

[Equally likely]

….. are based on the decision maker’s attitude toward life.

[The decision criteria]

….. is based on lost opportunity or regret.

[The payoff table]

…… is based on the best possible scenario. It fits both an optimistic and an aggressive decision maker.

[The Maximax Criterion]

….. is based on the worst-case scenario.

[The Maximin Criterion]

….. Maker believes that the worst possible result will always occur.

[Pessimistic decision]

…… maker wishes to ensure a guaranteed minimum possible payoff.

[Conservative decision]

…… maker looks for the decision with the highest payoff.

[Aggressive decision]

…… appeal to a decision maker who is neither pessimistic nor optimistic.

[Insufficient Reason]

…… is useful generally in the case where the decision maker is risk neutral.

[Expected value]

…… expected return obtained from knowing with certainty the future state of nature.

[EVPI]

…… the expected gain from making decisions based on Sample Information.

[EVSI]

…… = ERPI – EREV.

[EVPI]

…… = ERSI – EREV.

[EVSI]

….. = EVSI / EVPI

[Efficiency]

…… Prefers a certain outcome (payoff) to a chance outcome (utility) having the same expected value.

[Risk Averse]

…… Prefers a chance outcome (utility) to a certain outcome (payoff) having the same expected value.

[Risk Taking]

…… Is indifferent between a chance outcome and a certain outcome having the same expected value.

[Risk Neutral]