UNIT – 2
Executive Information and Support Systems

* ## KMS (Knowledge Management System) :-

KMS work to create, organise and share important knowledge wherever and whenever it is needed.

For example – Many KMS relay on internet and intranet website, knowledge basis and discussion forums as key technology for gathering, storing business knowledge.

KMS deals with information (although knowledge management as a discipline for information) so it is a class of information which are utilized with other information sources.

KMS could be any of the following –

1- Document based, any technology that permit creation, management, sharing of formatted document via web, distributed system, lotus notes etc.

2- Based on AI technology which use a representation scheme to represent the problem domain.

3- Provide network map of the organisation showing the flow of communication between entities and individual.

* ## Business Expert System :-

A business expert system is a knowledge based information system, it uses its knowledge about a specific area to act as an expert system to user.
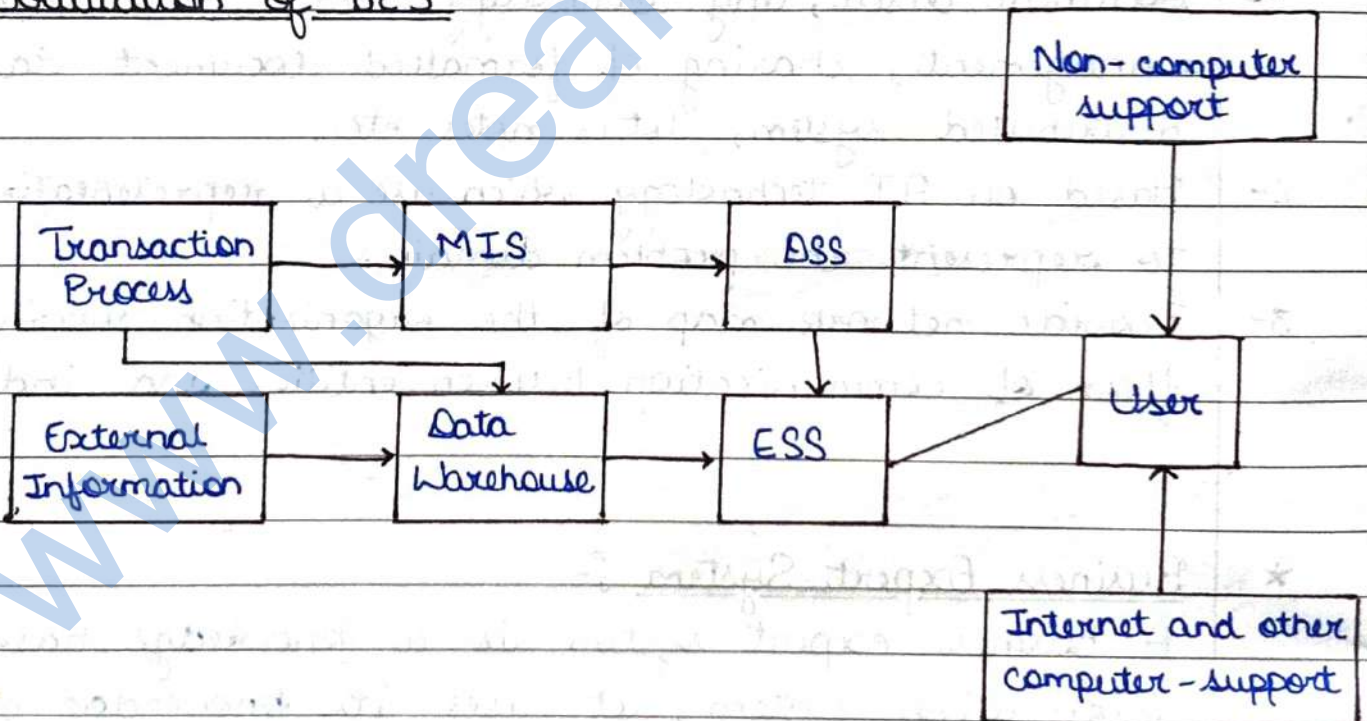
The component of business expert system are knowledge based and software modules that perform inter-connection on the knowledge and offer answer to user's question.

Expert system provide answer to questions in very specific problem area by making human like inference about knowledge contain in a specialised knowledge based.

- **Business Expert System Structure** — The knowledge base of the business expert system contain facts about specific area. There are many ways that knowledge are represent in business expert system.

1. Case - Base Knowledge BES
2. Frame - Base Knowledge BES
3. Object - Base Knowledge BES
4. Rule - Base Knowledge BES
5. Software Resources

- **Evaluation of BES** —

- **Objective of BES** — Following are the various objective of a business expert system —

1- The role of computer in information system.

2- Define the characteristics and elements of information system.

3- What are the various type of information system and model.

4- Measuring the different type of specialized information system.

★ <u>Artificial Intelligence in Business Expert System</u> :-
Simulate human intelligence such as the ability to learn and reason is called artificial intelligence. There are various commercial application of AI are given —

1. Expert system

1- Expert System — Computerised advisory program that imitate the reasoning process of expert in solving difficult problem.

2- Neural Network — It attempt to emulate the way behalf the working of human brain.

3- ᗷ Fuzzy logic — A mathematical method for handling ~~imperactie~~ or subjective information.
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4 Genetic algorithm — An AI system that mimics the evaluanory survival of the fittest process to generate increasely better solution to a problem.
Example : Shopping bot.

5. Intelligent Agent — Special purpose knowledge based information system that generate for specific task on behalf of user request.

6- Virtual Reality — A computer based simulated environment that can be able to create simulation of the real world or an imaginary world.

- Examples of AI :-
  Games, robotics, natural language, common sense reasoning, perception etc.

★ <u>Data Warehousing</u> :-
  Dimensional modelling of data is called data warehousing. These procedure are useful for producing first cut design. Most of these modification have to do further simplifying the model and dealing with non-hierarchical data.

- Model tuning in data warehouse —
  It is the process to generate relationship with database in data warehouse. These are the major factors for create tuning :-
  1. Combining tables with the help of foreign key.
  2. Produce pre-aggregate stars using one to many relationship.
  3. Combining dimension.
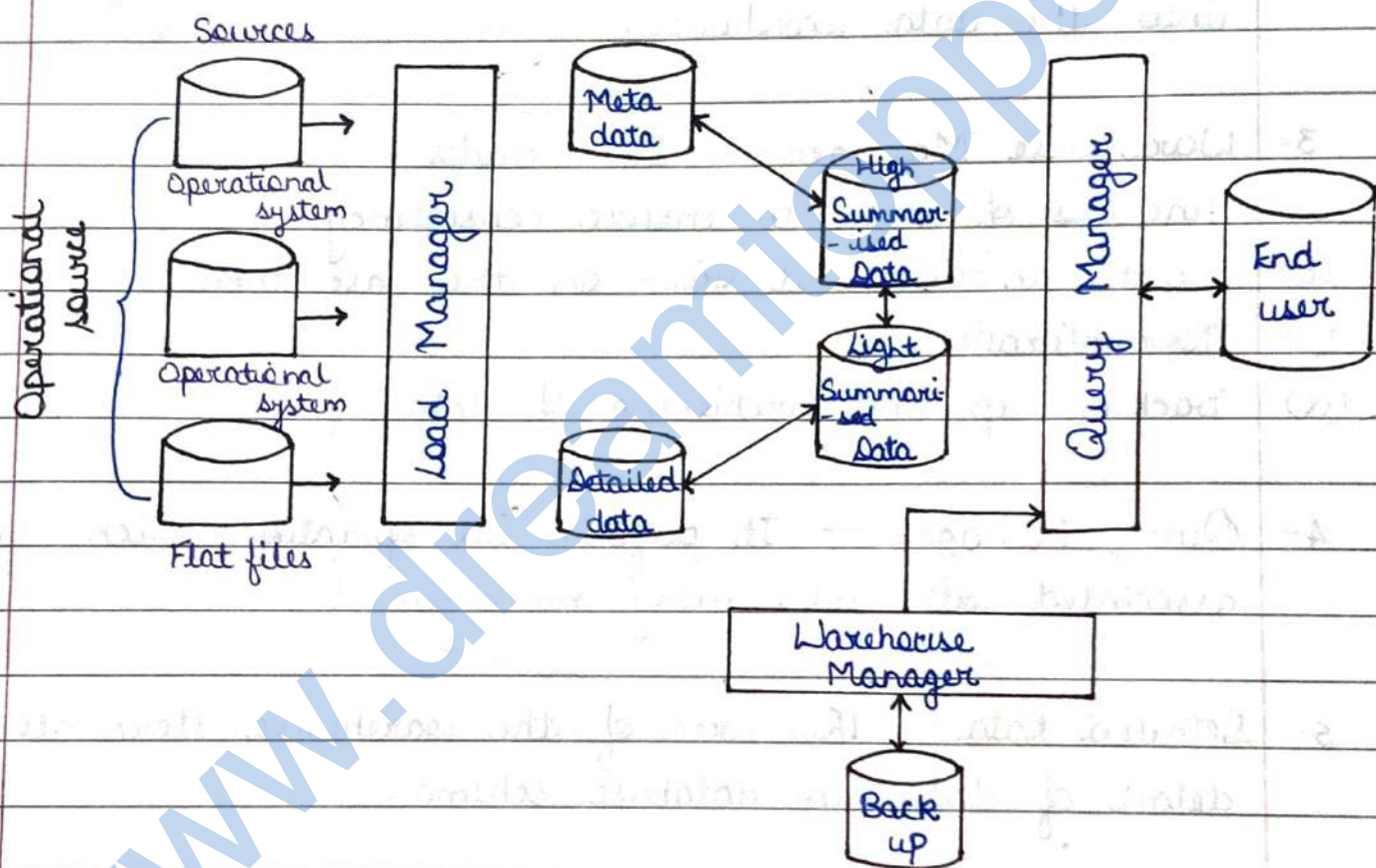 4. Handling sub-types relationship.

- Benefits of data warehouse —
  1. Multiple iteration
  2. Shorter Rimplementation
  3. Easy validation of each phase.
  4. Provide extengible, scalable architectures.
  5. Allow easy construction for integrated data mart environmen

Phases of Data Warehouse - There are six phases-
1. Strategy
2. Definition
3. Analysis
4. Design
5. Build
6. Production

Data Warehousing Architecture :-

1- Operational Source - The source of data for data warehousing is supplied from
(a) The data from the main frame system in the traditional network and hierarichal format.
(b) Data can also come from the relational RDBMS like Oracle, Informics.
(c) In addition these internal data, operational data also

Flat files— It is a system of files in which transactional data is stored, and every file in the system must have a different name.

include external data from databases which are associated with supplier and customer.

An operational system is a method used in data warehousing to refer to a system that is used to process the day-to-day transactions of an organisation

2- **Load Manager —** The load manager perform all the operations associated with extraction and loading data into the data warehouse.

3- **Warehouse Manager—** It includes —
(a) Analysis of data to ensure consistency.
(b) Create in click and view on the base table.
(c) Normalization.
(d) Backing up and archieving of data.

4- **Query Manager —** It perform all operation which are associated with user query management.

5- **Detailed Data —** This area of the warehouse store all detail of data in database schema.

6- **Lightly and highly summarized data—** The area of the data warehouse store all the predefined lightly and highly summarized (aggregated) data generated by warehouse manager. The goals of summarized information are to speed up query performance.

7- **Archieve and Backup data —** This area of warehouse store detail and summerized data for purpose of archieving and backup.

Meta data summarizes necessary information about data. which can make finding and work with particular instances of data more accessible.

8- **Meta data—** It is used to map data sources to common view of info within the warehouse. A set of data that defines and give information about other data.

9- **End user access tool —** The principle purpose of data warehousing is to provide information to the business manager for strategic decision making. Some examples of end user access tool —

(a) Report and query do

(b) Application development tool.

(c) Executive system tool.

(d) Online analytical tool

(e) Data mining tools

* **Component or tools or Extract Transformation Tool. (ETT)—**

1. Extract

2. Transform

3. Cleaning

4. Loading