* Production System characteristics

29-07-19

* Knowledge Base System (Expert System)

→ Expert system domain is specific

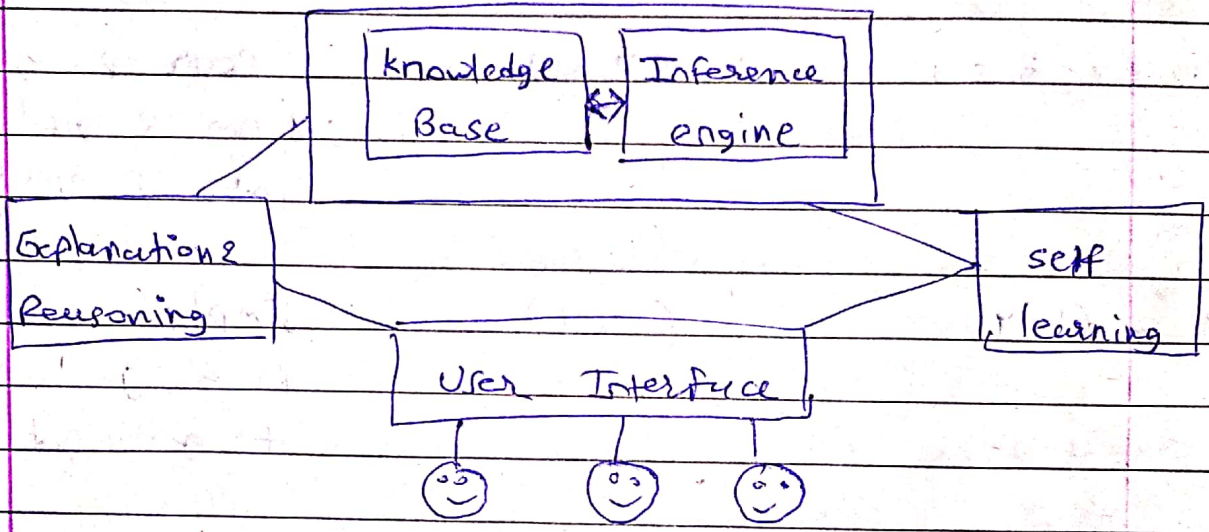


Figure :- General structure of K.B.S.

Components of the knowledge
1) Rules
2) facts
3) Heuristics
4) Meta Knowledge

→ A KBS is a major family member of A.I. ~~It~~ started with expert system and now is available in many domain specific area by retaining several expert and saving money.

→ These System are capable of understanding the information being processed and can make decision on it.

→ A KBS is a fifth generation programming technology and its objectives are identified as follow:

1) Provide a high level of intellisence
2) Help people in discovering and developing unknown field.
3) offers a least amount of knowledge in different areas.
4) Helps in knowledge management stored inside knowledge based.
5) Solves social problems is a better way then traditional CBIS.
6) Acquire new perception by simulating unknown situation
7) offers significant software productivity improvement.
8) Significantly reduces cost and time to develop computerised system.

Components of KBS

The KBS consist of a knowledge base and a search program called as inference engine

The inference engine is a software program

that offers knowledge available in knowledge base.

The knowledge base consist of rule, facts, heuristics and meta knowledge

→ The component of self learning uses mathematical like Artificial neural networks evolutionary algorithm, simulation and hybrid method for learning

→ for explanation and reasoning rule base system which utilizes fuzzy sets and rough sets is used to provide proper justification. The user interface is in users native form (natural language processing) hence utilization of KBS becomes very easy.

5 marks 20 marks

⊛ Difference between KBS & CBIS

KBS	CBIS
1) Adds power to the solution and concentrates on Effectiveness without any gurentee of solution	1) Gives a gurantee solution and concentration on efficiency.
2) Knowledge and/or decision processing approach	2) Data and/or Information processing approach.

3) Transfer of expertise; takes decision based on knowledge explains it, upgrades it if required.	3) Helps in activities relate to decision making and routine transactio support needs for Information.
4) Examples of KBS are expert system, CASE. Based system, linked systems, etc	4) Examples are TPS, MIS, and DSS
5) Manipulation method is symbolic, connectionist and Non-algorithmic.	5) Manipulation method is numeric & algorithmic.
6) These system learns from mistakes.	6) These systems never make the mistake.
7) Partial information, uncertain info. data or knowledge will do.	7) Needs complete data and Information.
8) Works for narrow domain in reactive and Proactive manner.	8) Works for complex, integrated and wide areas in reactive manner.

Evolution of CBIS

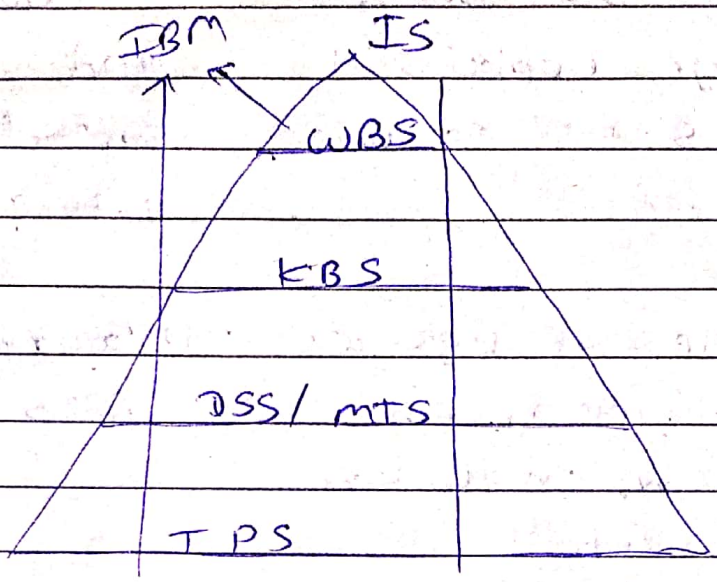
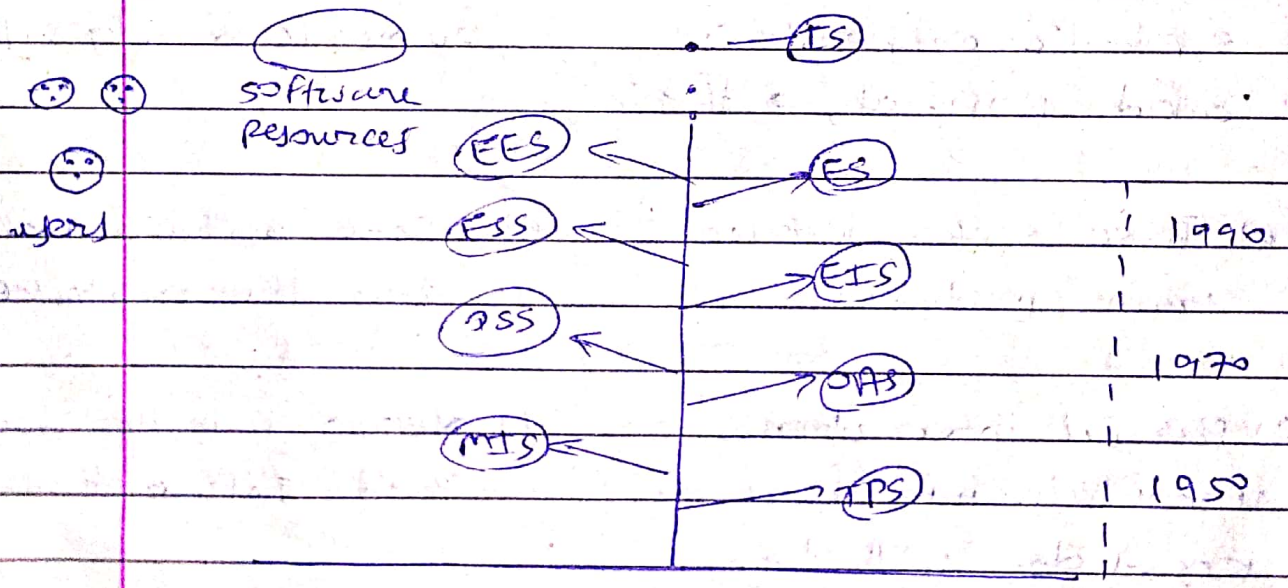


Figure : Data pyramid of



Hardware / Base technology

Figure : CBIS Tree

→ Computer System started evolving by the year 1950

→ A data pyramid for CBIS shows that the evolution started with transaction processing system which replaces manual calculation

→ Their system were aided with support of BSS from which higher level managerial system was develop (MIS)

→ In the beginning of 21st century expert system started to take over and replace traditional CBIS however these expert system uses BSS and TPS for their internal processing we are still to develop WBS (wisdom based system) and intelligent system.

→ These system were classified into broad category shown in CBIS trick

TPS - Transaction processing system
MIS - management info. system
OAS - office automation system
DSS - Decision support system
EIS - Executive Information System
ESS - Executive support system
ES - Expert system
EES - Executive Expert System
IS - Intelligent System