UNIT- 5.

1. NLP:

→ Natural Lang are the lang used by living creatures to communicate

→ Capability to understand N L is very imp intelligent behavior
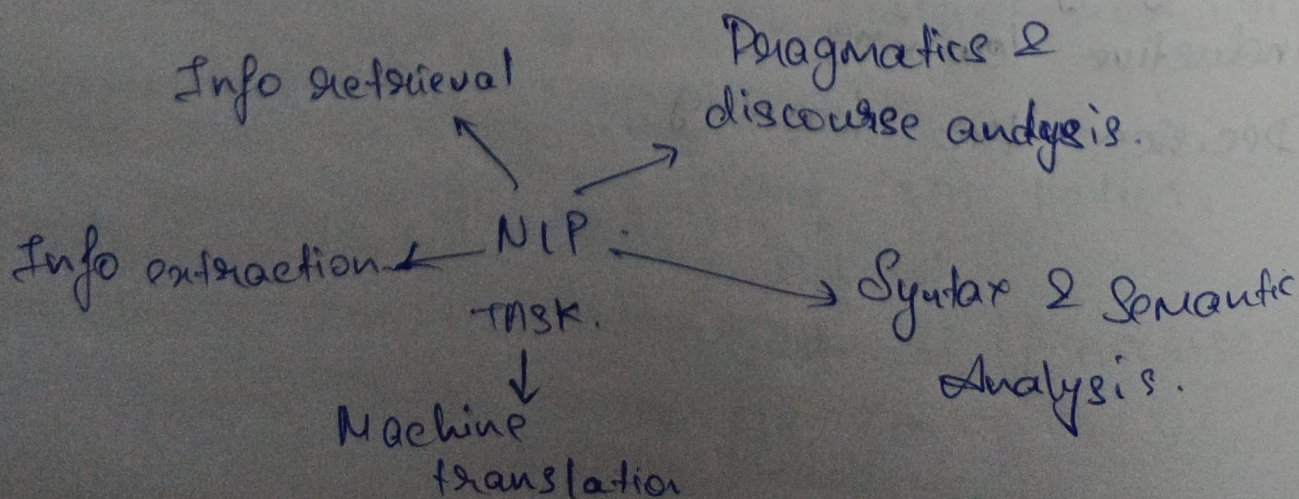
Why NLP processing.

→ huge amt of Data → internet:

→ Application processing for large amt of text.

  text into categories

  index & search large text

  Auto. translation.

resumes:

  Ques. Answering.

  ~~Autonic~~ Sumerization

→ All need NLP expertise

Info retrieval   Pragmatics & discourse analysis.

Info extraction ← NLP:

              TASK.   → Syntax & Semantic
               ↓   Analysis.
           Machine
           translation

Levels of NLP:

Morphology: → Analysis of individual work
consist of morphomes.

→ Smallest grammatical unit.

→ Determination of tense (ed, ing)

Syntax: → Concerned with rules

→ legal formulation of sentences to check structure

Semantic: → this phase, meaning checking is carried.

→ Meaning conveyed is analysed.

Discourse integration:

→ the meaning of the current sentence is
independent on the one that is prior to it.

→ identification of discourse structure.

Pragmatics:

→ Mapping for wat the user has interpreted
from the conveyed part & wat is actually expected.
how long will you complete? Ans is hrs, not Y or N.

Prosody: → Analysis phase handles rhythm.

→ Difficult phase in poetry & slokas.

Phonology:

→ Diff kind of sounds are combined
eg: speech recognition.

Application:

→ Sentiment Analysis → task of identifying whether the opinion expressed in a text is +ve / -ve
text Analysis, computational linguistics
biometrics.

→ Machine translation

→ Automation

2. With a neat sketch explain the architecture characteristics features & roles of expert sys.

Expert sys:
is a comp sy that takes Decision like that of humans

Archi of expert sys: → It uses Rules.
→ Knowledge Base: Stores relevant info. (if then) (fuzzy logic)

→ inference Engine: Seek info & relationships from the knowledge base & provides ans.
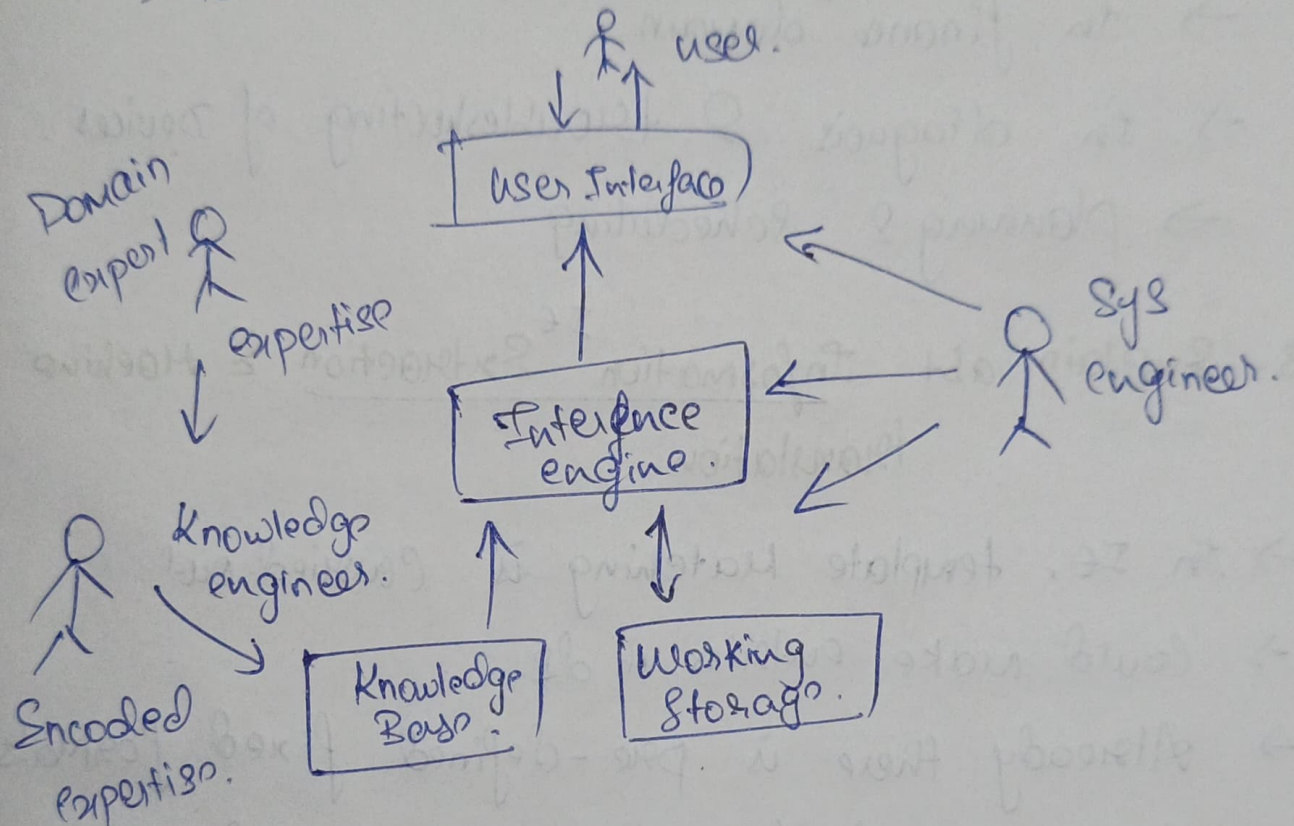Backward & forward checking

→ Explanation facility → Doe to find diagnosis of disease by medicines
→ how to arrive at certain conclusion.

→ Knowledge acquisition facility.
Provide efficient means of capturing & storing Knowledge Base.

User - Interface.
→ Specialized users. I. s/w employed for Designing, Creating, Updating.

→ to make the Development user.
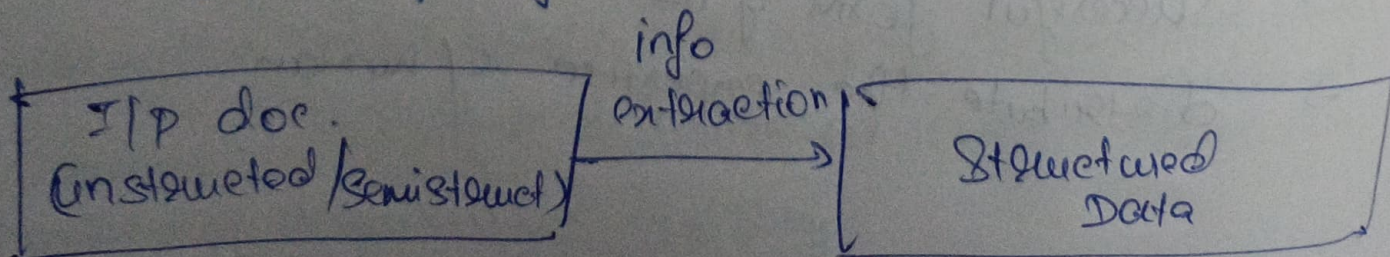

chars of expert sys:

→ Permanent

→ efficient Solution

→ Solve complex probs

→ Successful form of AI

→ distribute the expertise of human.

Roles of expertise sys:

→ Designing & Manufacturing Domain.

→ In Knowledge domain

→ In finance domain

→ In diagnosis & troubleshooting of Devices.

→ Planning & Scheduling

S. Explain abt Information ^{IE} Extraction & Machine
translation.

→ In IE. template Matching is carried out.

→ Could make entries in dB

→ Already there is pre-defined fixed formats
where the text entries are carried out.

→ Basically If unstructured Data to Structured Data

→ IE info extracted from templates

→ Info retrival gets info as documents whereas
IE gets info from the doc.

```
                              info
 ┌──────────────────┐      extraction  ┌──────────────┐
 │ I/p doc.         │ ───────────────> │  Structured  │
 │(unstructed/semistruct)│              │    Data      │
 └──────────────────┘                  └──────────────┘
```

Modules of IE:

(Machine translation)

```
            ┌─────────────┐
            │ tokeniser   │ ──────→ Does word separation
            └─────────────┘
                   │
                   ↓
     ┌────────────────────────────┐ ──────→ speech tagging
     │ Lexical & Morphological    │           is done
     │       analysis             │ ──────→ Identifying the
     └────────────────────────────┘           part of speech &
                   │                           word tagging is
                   ↓                                done
         ┌──────────────────┐
    ↙────│    Parsing        │
    │    └──────────────────┘
Syntax Analysis     │
   is done          ↓
         ┌──────────────────┐
         │ Domain Analysis   │
         └──────────────────┘
                   │
                   ↓
       Merging the partial results
```