Experiment No: 07

Aim: To learn prolog programming through an online prolog environment.

Lab Objective: Design and implement declarative programs in functional and logic programming languages.

Lab Outcomes: Design and Develop solution based on declarative programming paradigm using functional and logic programming (LO2)

Requirements: swish online prolog environment

Theory: Describe components of SWISH online prolog environment.

Performance: Students are made familiar with the online prolog environment available named swish-prolog. Students are shown how to access example prolog KBs in examples interface and asked to perform following steps on 4 of the example knowledge bases.

- Enlist all distinct predicates with mentioning their arity and meaning
- Form 5 distinct Queries and write down output for all of them after executing them in swish-prolog.
- Explain how does SWI Prolog find the query result for each of five queries fired in earlier step

KBs chosen are shown in below image : Knowledge bases, Lists, Movie Database, N-Queens (Traditional)

- **First steps**
  - Knowledge bases provides a really simple knowledge base with example queries.
  - Lists defines a couple of really simple list operations and illustrates timing *naive reverse*.
- **Classics**
  - Movie database provides a couple of thousands of facts about movies for you to query.
  - Expert system illustrates simple meta-interpretation of rules and asking for missing knowledge.
  - Eliza implements the classical shrink.
  - English grammar DCG rules for parsing some simple English sentences and show the result as an SVG tree.
- **Puzzles and constraints**
  - Einstein's Riddle A famous puzzle attributed to Einstein.
  - N-Queens (traditional) solves the N-queens problem using traditional Prolog and illustrates domain-specific (graphics) output.

Conclusion: Thus we have learned prolog programming through an online prolog environment.

Reference:

1. swi-prolog getting started online tutorial, https://www.swi-prolog.org/pldoc/man?section=quickstart, 01 Jan 2023.
2. Wikipedia Article: Prolog, https://en.wikipedia.org/wiki/Prolog, 01 Jan 2023.