



AI3001

Knowledge Representation and Reasoning

Week 07

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1

Outline

- Prolog – File Processing
- Conclusion

2

File Processing in Prolog

- In prolog processing you can load the knowledge base via file processing and write the knowledge base to the file as well.
- This is quite handy for a dynamic KB
- Lets for example we have the following facts given as a predicate
- **route(a,b,x)** – which represents the distance between city **a** and city **b** in some unit **x**.

3

File Processing in Prolog

- For file reading your predicate must use a stream with the command:
 - seeing (S) – indicate to bind a stream
 - see('filename.txt') – filename bind to s
 - seen – reading complete
 - see(s). – close stream

4

File Processing in Prolog

```
read_route:-seeing(S), see('route2.txt'),  
    read_data,  
    write('Data read'), nl,  
    seen, see(S).  
read_data:-  
    read(A), process(A).  
  
process(end).  
process(A):-  
    read(B), read(C),  
    assertz(route(A,B,C)), read_data.
```

5

File Processing in Prolog

- For file writing your predicate must use a stream with the command:
 - telling (S) – indicate to bind a stream
 - tell('filename.txt') – filename binds to s
 - told – reading complete
 - tell(s). – close stream

6

File Processing in Prolog

```

output_data:-
    telling(T), tell('route.txt'),
    write_data, told, tell(T),
    write('Data written'), nl.

write_data:-route(A,B,C) ,
write(A), write('. '),
write(B), write('. '),
write(C), write('. '), nl,
fail.
write_data:-write('end.'), nl.
```

7

Built-in Predicate

- Prolog provides built-in predicates to handle file input and output (I/O).
- These predicates allow you to read from and write to files, which is useful for tasks such as data storage, logging, or importing knowledge from files.

open/3: Opens a file for reading or writing.
open(File Name, Mode, Stream).
close(Stream).
Mode – read, write or append

8

Built-in Predicate

```
read_from_file :-  
    open('data.txt', read, Stream),  
    read(Stream, Data),  
    write(Data), nl,  
    close(Stream).
```

9

Built-in Predicate

```
write_to_file :-  
    open('output.txt', write, Stream),  
    write(Stream, Hello world'),  
    nl(Stream),  
    writeln(Stream, 'prolog filing'),  
    close(Stream).
```

10

Conclusion

- Chapter 6 from TB#2 (Prolog book)