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AI Assignment 2

Heuristic Logic :

- Consider the current city as X and the final destination city as D. I find the distance from X to Capital City (Delhi) and similarly find the distance between Delhi and D. Let these be `l1` and `l2` respectively.
- I use the triangle inequality principle and figure that the distance between X and D (say `l3`) would be in range `|l1 - l2| <= l3 <= l1 + l2`.
- Using statistics I approximate `l3 = (l1 + l2 + |l1 - l1|) / 2` and this is the heuristic function h for my best first search algorithm.

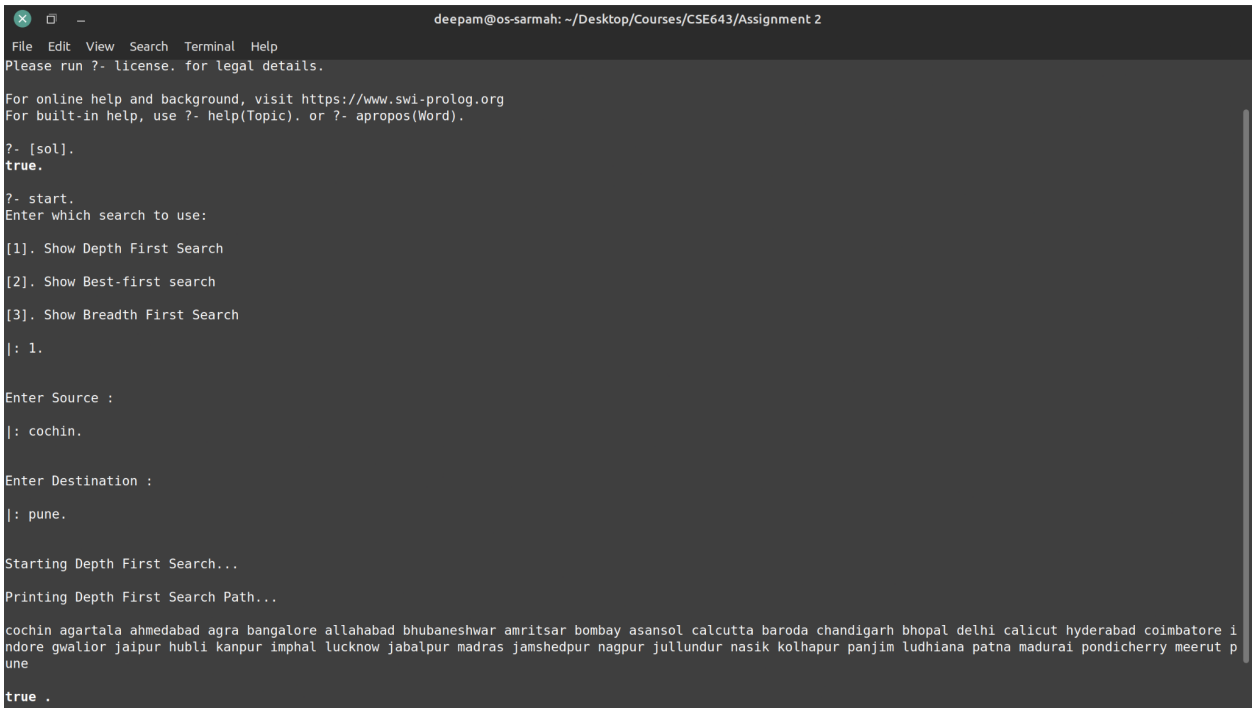
Algorithms Implemented :

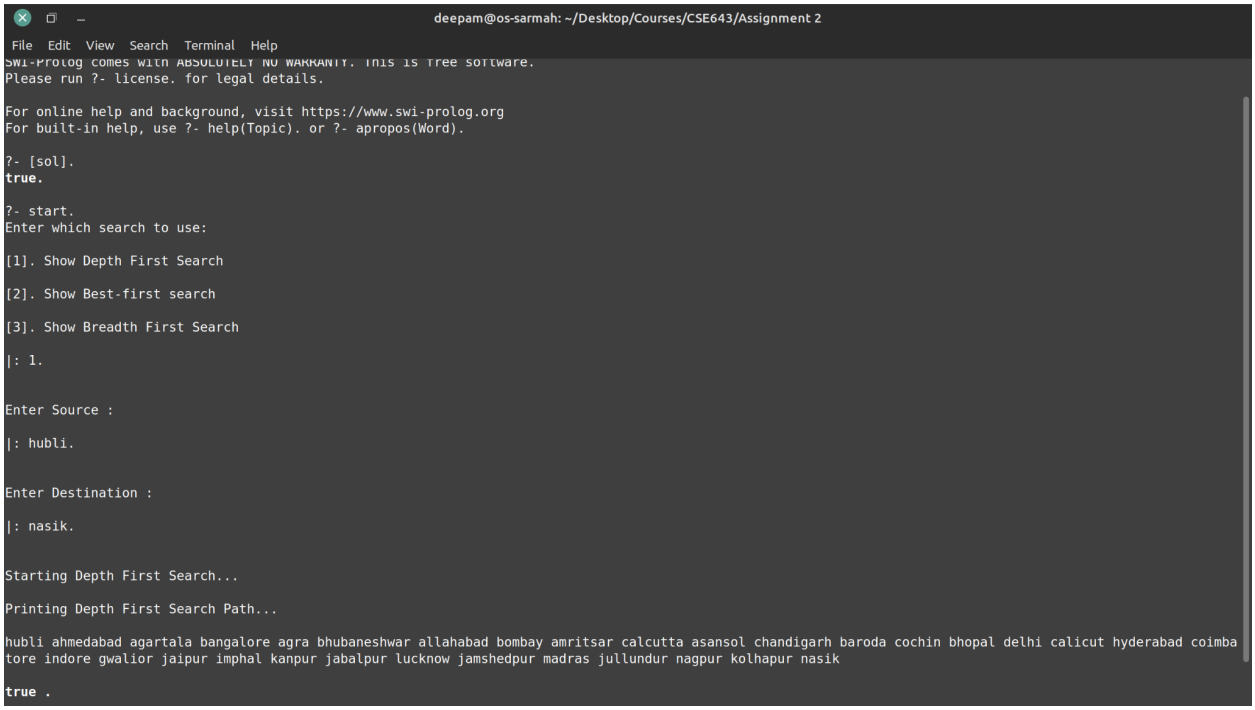
1. Depth First Search
2. Best First Search
3. Breadth First Search

For building Prolog Knowledge base I used pandas and parsed the excel sheet - Code in `gen.py`

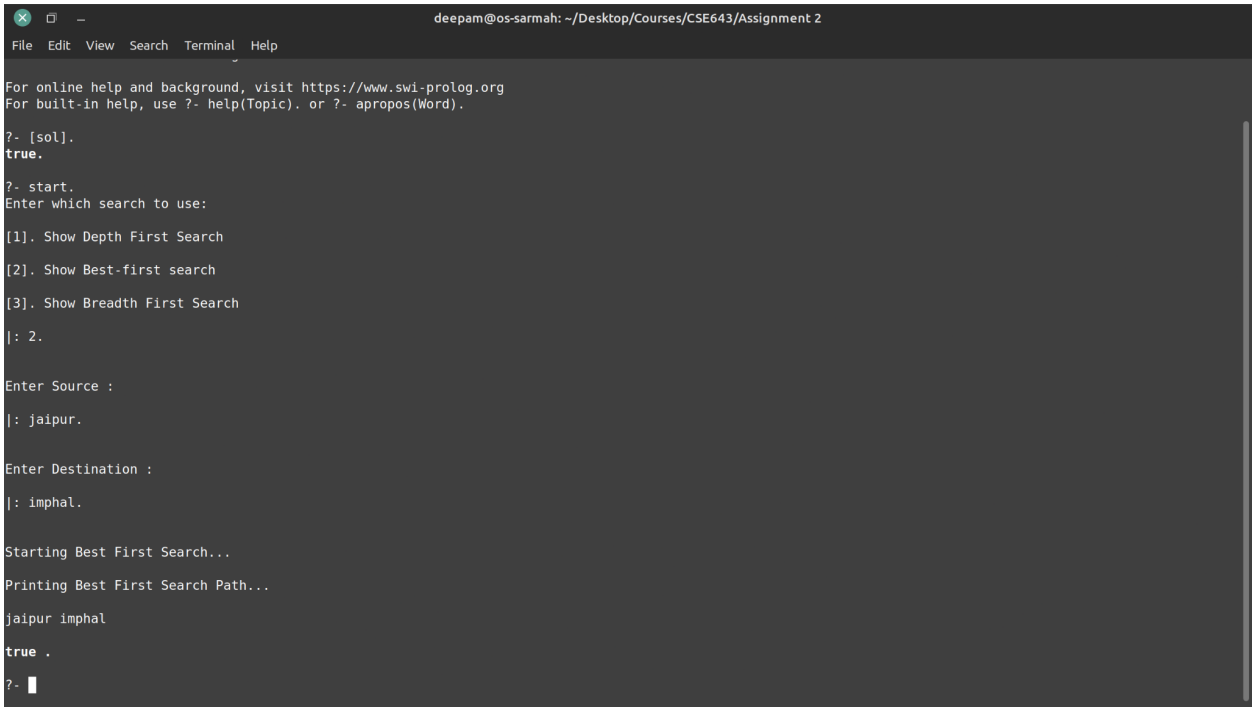
Working of program : (To run, load sol.pl and then start.)

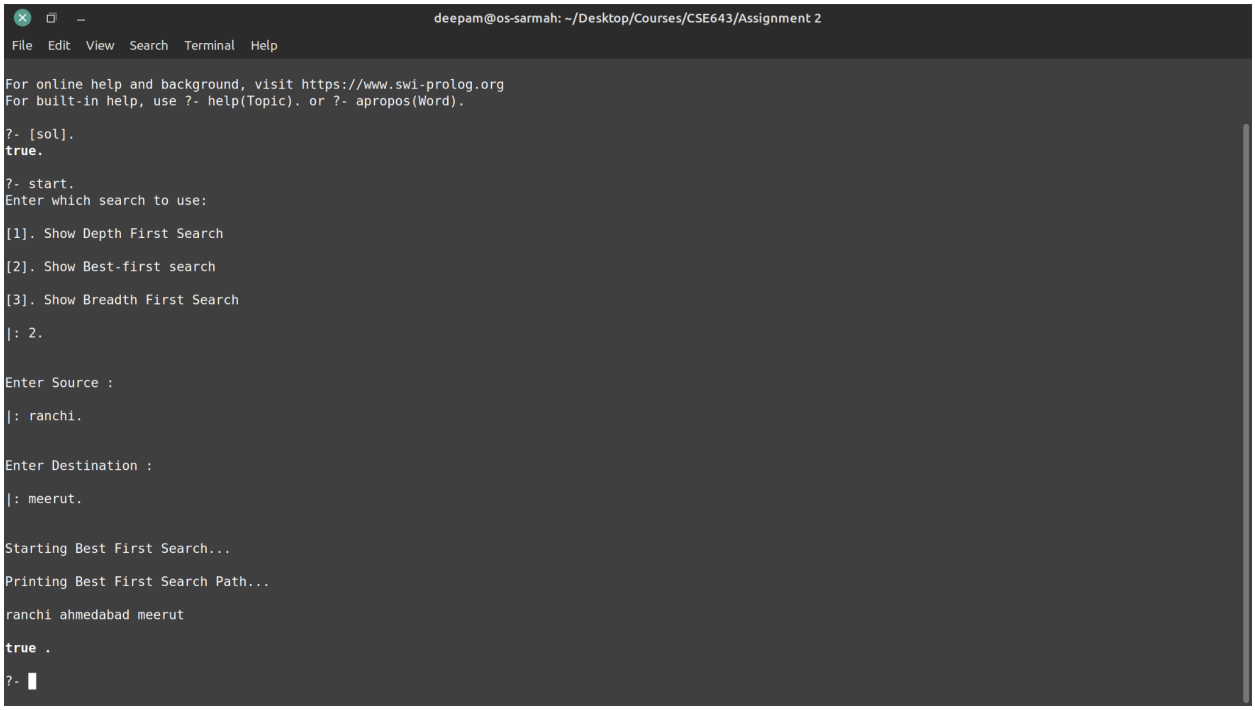
1. Depth First Search



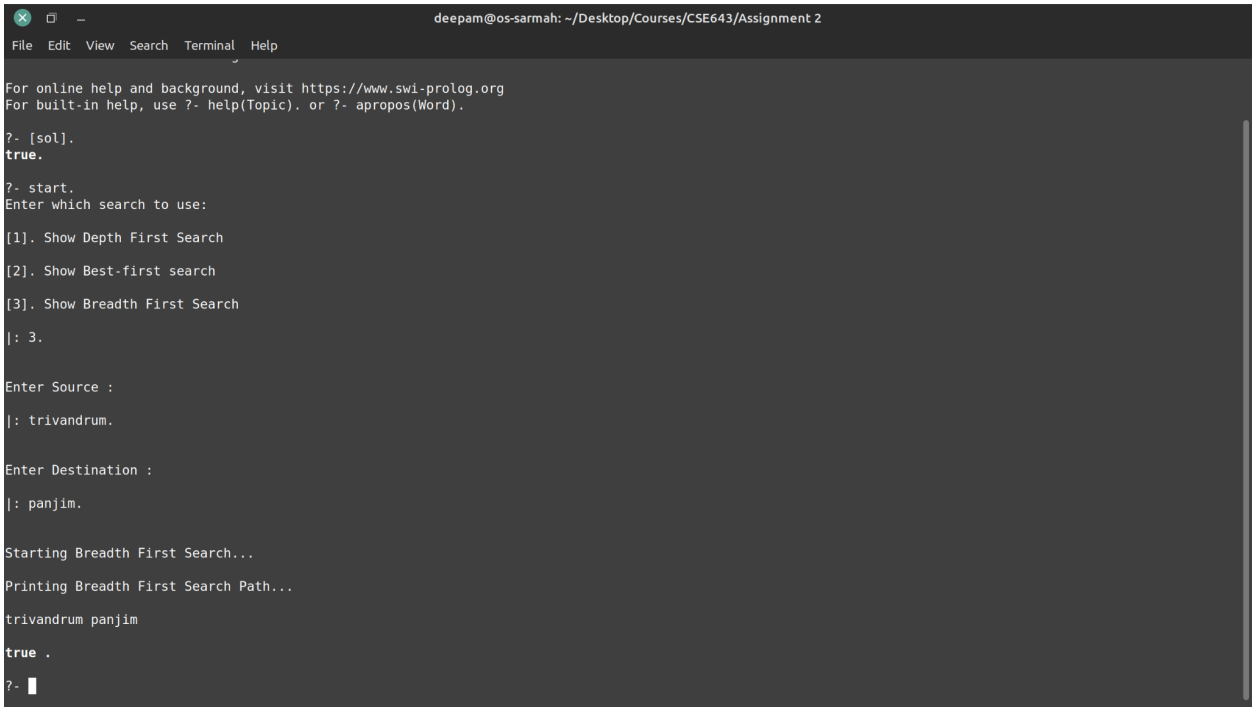


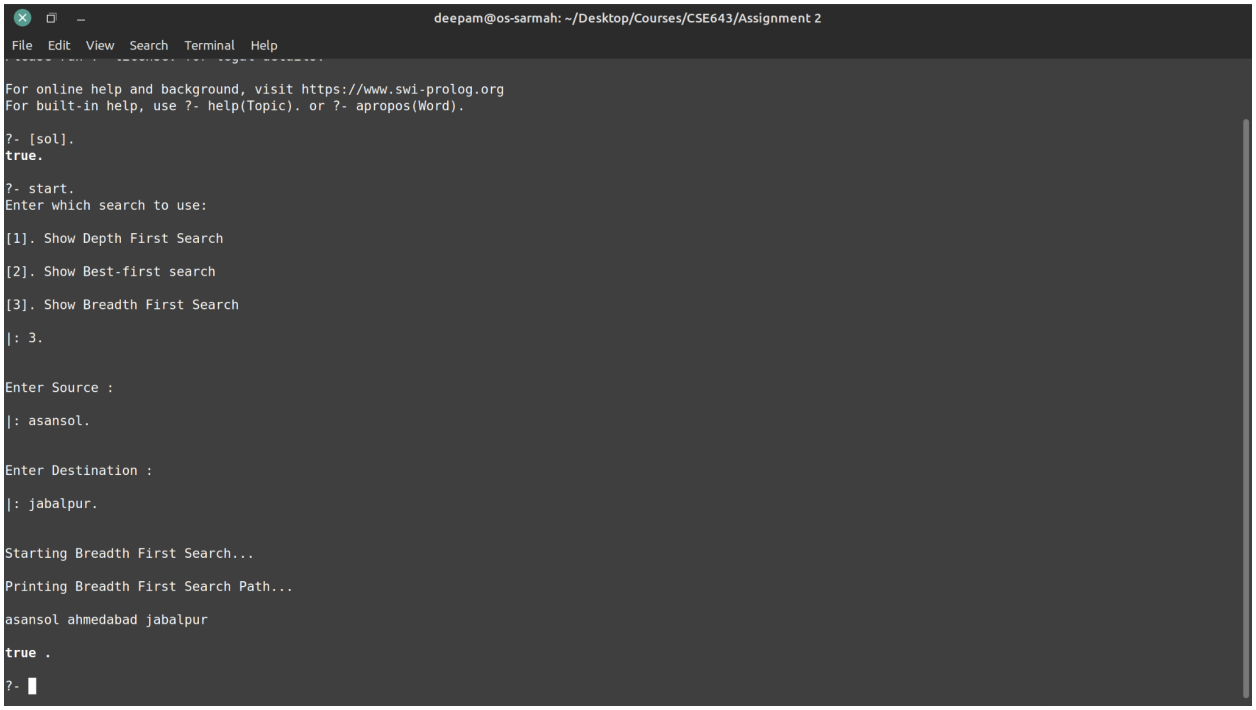
2. Best First Search





3. Breadth First Search




deepam@os-sarmah: ~/Desktop/Courses/CSE643/Assignment 2
File Edit View Search Terminal Help
For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).
?- [sol].
true.
?- start.
Enter which search to use:
[1]. Show Depth First Search
[2]. Show Best-first search
[3]. Show Breadth First Search
|: 3.
Enter Source :
|: asansol.
Enter Destination :
|: jabalpur.
Starting Breadth First Search...
Printing Breadth First Search Path...
asansol ahmedabad jabalpur
true .
?-