Logical Reasoning in Prolog - Task 4

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Understanding the Prolog Knowledge Base:

Read the document on Simpson KB to understand the terminologies such as Terms, Predicates, Facts, Rules and Queries which helped us gain a solid understanding to create a KB with Facts and Rules.

Testing using Simpson KB:

The Simpson KB contained 15 facts and 5 rules and we initially tested 5 queries using this readily available KB to get a better understanding of the querying of the Facts and Rules.

Creating and Testing our own KB:

1. Installed SWI-Prolog version 9.0.4 for x86_64-linux using the bash command:

```
Unset
sudo apt install swi-prolog-core
```

2. Installed the Python wrapper pyswip for SWI-Prolog using pip, as this package was not available in conda repository:

```
Unset
pip install pyswip
```

3. Created a KB based on the American Sitcom - FRIENDS. This KB file has 15 facts and 4 rules

4. Queried “friends.pl” KB: Open SWI-Prolog interpreter, load the KB file and run the queries using the below commands:

```
Unset
swipl

1 ?- [friends].
true.

2 ?- bestfriend(joey, chandler).
true.

3 ?- friend(joey, Y).
Y = chandler.

4 ?- wife(X, chandler).
X = monica .

3 ?- wife(X, Y).
X = monica,
Y = chandler ;
X = phoebe,
Y = mike.


6 ?- brother(ross, monica).
true.

7 ?- sister(monica, ross).
true.

8 ?- ?- friend(monica, Y).
Y = rachel ;
Y = phoebe.
```

5. Created a Jupyter notebook for python prolog. Initially we found discrepancy in the outputs from SWI-Prolog and Python Prolog interpreter. Then we identified that in the SWI-Prolog's interactive mode, if there are multiple answers for a query, pressing "enter" will just exit without searching for other answers and that we should press ; to search for other answers. With this we made sure that the outputs from SWI-Prolog and Python Prolog interpreter were the same.