

# Assignment 4 - Report

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## **Files -**

### **NL Interface -**

The nl-interface made interpretes any sentence in the english language and makes out necessary input in the form of facts for the prolog file.

For input from the user, the program prompts the user for every particular input and also gives an example of the required input. For some inputs which are absolutely necessary, the code prompts the user multiple times until the required input is obtained.

The code then creates a fact file which is accessed by the prolog program as inputs (facts) and the predictions are then shown to the user.

### **Facts File -**

The facts file created contains the facts as required by the prolog program for the predictions.

### **Script -**

The main prolog file which is the prediction system made for the assignment 1. This consults the facts file for facts, uses them as input and then gives the predictions.

### **Assignment 1 Script -**

This is given so that I can demonstrate the differences between the scripts.

### **Methodology and NL concepts used -**

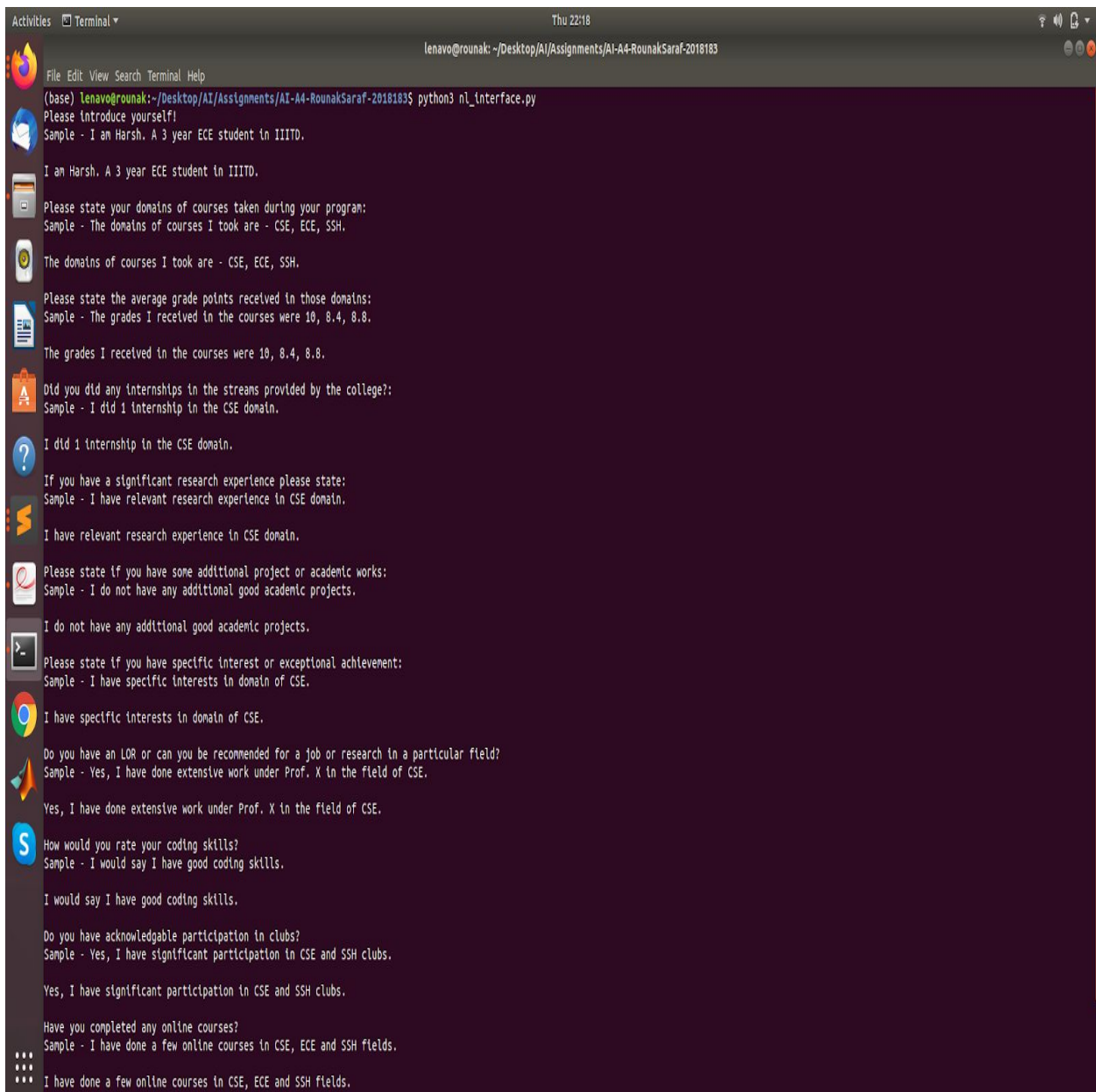
- nltk library
  - word tokenize
  - sent tokenize
  - porter stemmer
  - pos\_tag
-

I have tested through sample sentences that would provide the required input for the prolog program and noted their tags. When the user gives input, I check if the word matches with the tag and if it is present in the dictionary containing the bag of inputs.

## Concepts dealt with -

Phonetics - dealt with homophones, word boundary, disfluency and phrase boundary.  
There is semantic analysis also done for some inputs.

## Screenshot of the working program -



```
lenavo@rounak: ~/Desktop/AI/Assignments/AI-A4-RounakSaraf-2018183
(base) lenavo@rounak:~/Desktop/AI/Assignments/AI-A4-RounakSaraf-2018183$ python3 nl_interface.py
Please introduce yourself!
Sample - I am Harsh. A 3 year ECE student in IIITD.
I am Harsh. A 3 year ECE student in IIITD.
Please state your domains of courses taken during your program:
Sample - The domains of courses I took are - CSE, ECE, SSH.
The domains of courses I took are - CSE, ECE, SSH.
Please state the average grade points received in those domains:
Sample - The grades I received in the courses were 10, 8.4, 8.8.
The grades I received in the courses were 10, 8.4, 8.8.
Did you did any internships in the streams provided by the college?:
Sample - I did 1 Internship in the CSE domain.
I did 1 Internship in the CSE domain.
If you have a significant research experience please state:
Sample - I have relevant research experience in CSE domain.
I have relevant research experience in CSE domain.
Please state if you have some additional project or academic works:
Sample - I do not have any additional good academic projects.
I do not have any additional good academic projects.
Please state if you have specific interest or exceptional achievement:
Sample - I have specific interests in domain of CSE.
I have specific interests in domain of CSE.
Do you have an LOR or can you be recommended for a job or research in a particular field?
Sample - Yes, I have done extensive work under Prof. X in the field of CSE.
Yes, I have done extensive work under Prof. X in the field of CSE.
How would you rate your coding skills?
Sample - I would say I have good coding skills.
I would say I have good coding skills.
Do you have acknowledgeable participation in clubs?
Sample - Yes, I have significant participation in CSE and SSH clubs.
Yes, I have significant participation in CSE and SSH clubs.
Have you completed any online courses?
Sample - I have done a few online courses in CSE, ECE and SSH fields.
...
...
...
I have done a few online courses in CSE, ECE and SSH fields.
```

```
Activities Terminal Thu 22:19
lenavo@rounak: ~/Desktop/AI/Assignments/AI-A4-RounakSaraf-2018183

File Edit View Search Terminal Help
I did 1 internship in the CSE domain.

If you have a significant research experience please state:
Sample - I have relevant research experience in CSE domain.

I have relevant research experience in CSE domain.

Please state if you have some additional project or academic works:
Sample - I do not have any additional good academic projects.

I do not have any additional good academic projects.

Please state if you have specific interest or exceptional achievement:
Sample - I have specific interests in domain of CSE.

I have specific interests in domain of CSE.

Do you have an LOR or can you be recommended for a job or research in a particular field?
Sample - Yes, I have done extensive work under Prof. X in the field of CSE.

? Yes, I have done extensive work under Prof. X in the field of CSE.

How would you rate your coding skills?
Sample - I would say I have good coding skills.

I would say I have good coding skills.

Do you have acknowledgeable participation in clubs?
Sample - Yes, I have significant participation in CSE and SSH clubs.

> Yes, I have significant participation in CSE and SSH clubs.

Have you completed any online courses?
Sample - I have done a few online courses in CSE, ECE and SSH fields.

I have done a few online courses in CSE, ECE and SSH fields.

Do you think you can work long hours?
Sample - Yes, I believe I can work long hours.
Sample - No, I donot/don't/do not think I can work long hours.

S Yes, I believe I can work long hours.

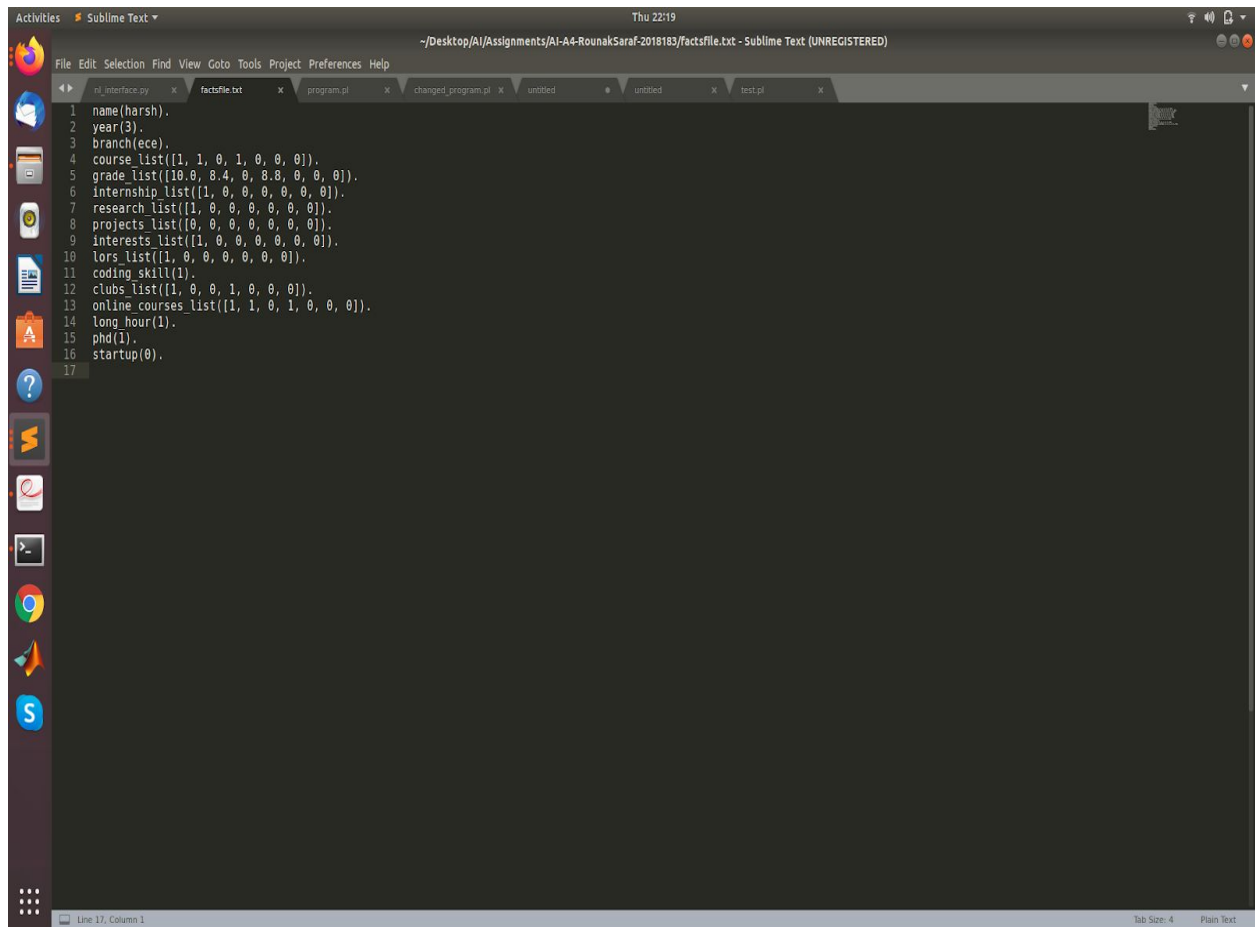
Do you think of ever going for a Phd?
Sample - Yes, I think of going for a Phd.
Sample - No, I have no intention of going for a Phd.

Yes, I think of going for a Phd.

Does it ever come to you of establishing your own startup?
Sample - Yes, I have a few ideas.
Sample - No, I haven't thought in that direction. But maybe in the future.

... No, I haven't thought in that direction. But maybe in the future.
... (base) lenavo@rounak:~/Desktop/AI/Assignments/AI-A4-RounakSaraf-2018183
```

## Screenshot of Facts file created -



```
1 name(harsh).
2 year(3).
3 branch(ece).
4 course_list([1, 1, 0, 1, 0, 0, 0]).
5 grade_list([10.0, 8.4, 0, 8.8, 0, 0, 0]).
6 internship_list([1, 0, 0, 0, 0, 0, 0]).
7 research_list([1, 0, 0, 0, 0, 0, 0]).
8 projects_list([0, 0, 0, 0, 0, 0, 0]).
9 interests_list([1, 0, 0, 0, 0, 0, 0]).
10 lora_list([1, 0, 0, 0, 0, 0, 0]).
11 coding_skill(1).
12 clubs_list([1, 0, 0, 1, 0, 0, 0]).
13 online_courses_list([1, 1, 0, 1, 0, 0, 0]).
14 long_hour(1).
15 phd(1).
16 startup(0).
17
```