

Compilers Lab, Spring term 2019

Task 5

First & Follow

Please read the following instructions carefully:

- Read [Rules & regulations first](#)
- It is **YOUR responsibility** to ensure that you have:
 - Submitted before the deadline.
 - Submitted the correct file(s).
 - Submitted the correct file(s) names.
 - Submitted correct logic of the task as it will be tested both publicly & privately.
 - Submitted your code in the format XX_XXXX_lab_5.zip where XX_XXXX is your ID for example 34_8000_lab_5.zip if your ID is 3 digits, append a zero to the left to be 34_0800_lab_5.zip to the correct google form link <https://goo.gl/forms/Ug6isZMSHcsP7rny2>.
- Good luck! =D

1 FIRST & FOLLOW

In this part, you are required to implement First & Follow for the variables of any given grammar.

- You should submit all files contains your python code for the solution.
- All files should have the extension “.py” & the “main” method should be in a file with the name “task_5_1.py”.
- You should make sure that the output is produced in a text file with the name “task_5_1_result.txt”.
- “Assignment 1 sample file” on the course web site contains a piece of code that you must include in your “task_5_1.py” in order to read inputs from a text file.

(All tokens must be separated by space characters)
(Epsilon will be represented with the word "epsilon")

For example, the input file will contain the grammar as follows:

Listing 1: Format

Line #1 non terminal colon set of production rules.
e.g.: A : A c | A a d | b d
...

```
1 S : A B C D E
2 A : a | epsilon
3 B : b | epsilon
4 C : c
5 D : d | epsilon
6 E : e | epsilon
```

The output would be:

Listing 2: Format

Line #1 non terminal colon first colon follow
e.g.: A : a b c : a b \$
...

```
1 S : a b c : $  
2 A : a epsilon : b c  
3 B : b epsilon : c  
4 C : c : d e $  
5 D : d epsilon : e $  
6 E : e epsilon : $
```