

Problem Wk.2.1.5: First Word Machine [Optional]

Write a state machine whose inputs are the characters of a string and which outputs either (a) the input character if it is part of the first word on a line or (b) None. For the purposes here, a word is any sequence of consecutive characters that does not contain spaces or end-of-line characters. In this problem, comments have no special status, if the first thing on a line is '# ', then the first word is '#'.

For example:

```
>> str = '''def f(x): # comment
    return 1'''
>>> m = FirstWordSM()
>>> m.transduce(str)
['d', 'e', 'f',
None, None, None, None, None, None, None, None, None,
None, None, None, None, None, None, None, None, None,
'r', 'e', 't', 'u', 'r', 'n',
None, None]
>>>
```

Note: The end of line character is '\n', so you can test for an end of line with:

```
if inp == '\n':
```

We encourage you to debug this on your machine in Idle. You can work in the file `swLab02Work.py`.

```
class FirstWordSM(sm.SM):
    pass
```

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