Problem Wk.2.1.4: Comments Machine

Write a state machine whose inputs are the characters of a string (representing a Python program) and which outputs either (a) the input character if it is part of a comment or (b) None. As you know, comments start with a '#' character and continue to the end of the current line.

In Python, if you want to create a string that contains carriage returns, you can use a three quotation marks, either ''' or """.

For example:

```
>> str = '''def f(x): # comment
   return 1'''
>>> m = CommentsSM()
>>> m.transduce(str)
[None, None, None, None, None, None, None, None, None, None,
'#', ' ', 'c', 'o', 'm', 'm', 'e', 'n', 't',
None, None, None, None, None, None, None, None, None, None, None, None]
```

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

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

You should start by drawing a state transition diagram indicating the states and what inputs cause transition to which other states.

We encourage you to debug this on your machine in Idle. You can work in the file swLab02Work.py. Open it in Idle, enter your class definition and testing examples in that file, and do Run Module to execute.

```
class CommentsSM(sm.SM):
    startState = ''  # fix this

    def getNextValues(self, state, inp):
        pass
```

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