EX 1

LEXICAL ANALYZER

AIM: To implement the automata library and construct a simple program using DFA and NFA.

PROBLEM: To construct a program using DFA that accepts all strings ending with ‘abb’.

jupyter DFA Last Checkpoint: 01/10/2022 (autosaved)

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Run Code

In [1]:
```
from automata.fa.dfa import DFA
```

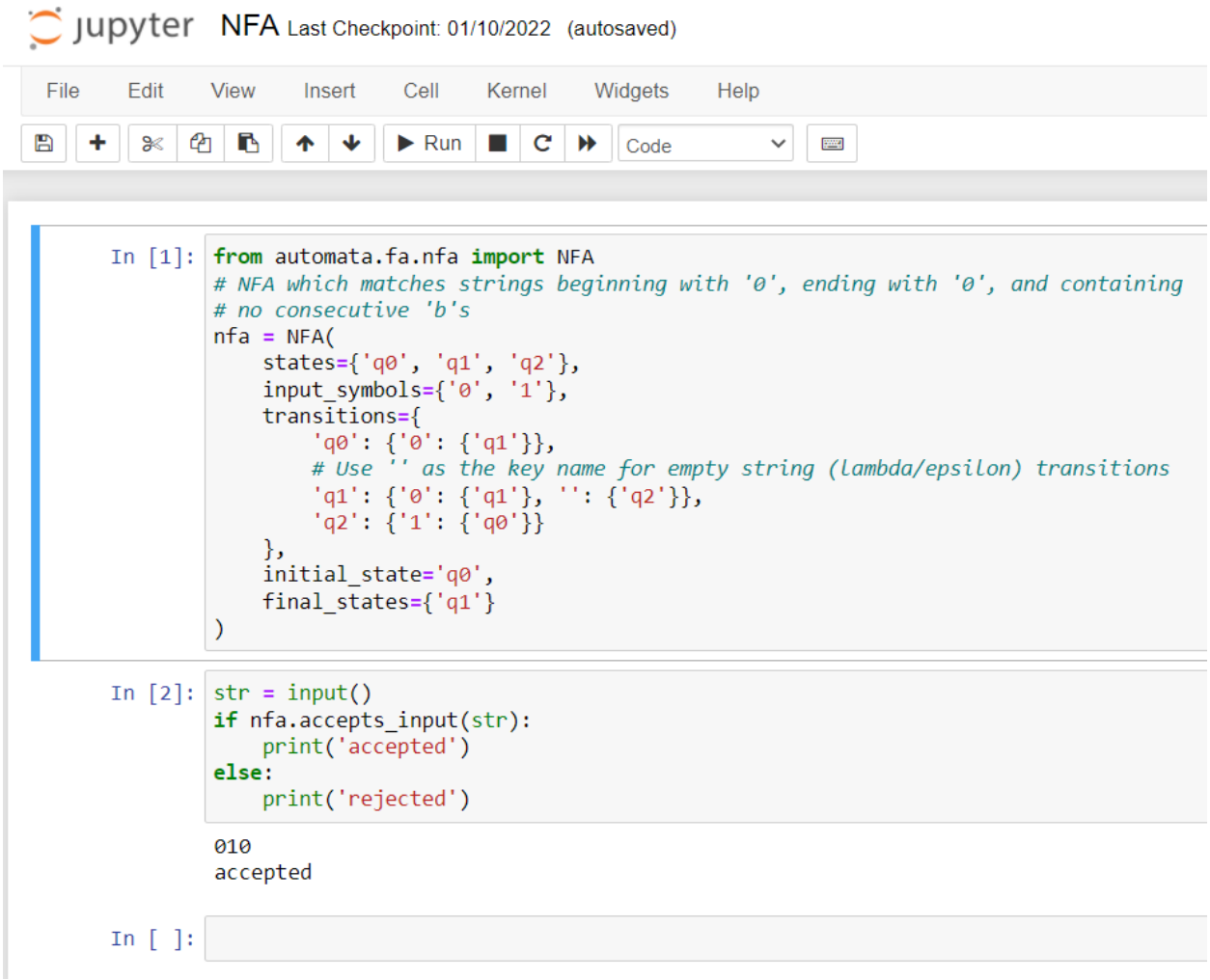
In [2]:
```
dfa = DFA(
    states={'q0', 'q1', 'q2', 'q3'},
    input_symbols={'a', 'b'},
    transitions={
        'q0': {'a': 'q1', 'b': 'q3'},
        'q1': {'a': 'q1', 'b': 'q2'},
        'q2': {'a': 'q1', 'b': 'q2'},
        'q3': {'a': 'q3', 'b': 'q3'}
    },
    initial_state='q0',
    final_states={'q2'}
)
```

In [3]:
```
str = input()
if dfa.accepts_input(str):
    print('accepted')
else:
    print('rejected')
```

```
abb
accepted
```

In [ ]:

PROBLEM: To construct a program using NFA that accepts all strings that starts with 0 and end with 0.



RESULT: Thus Deterministic Finite Automata(DFA) and Non Deterministic Finite Automata(NFA) were understood and implemented using Python Automata Library.

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