Laboratory 4:

https://github.com/CopsiMan/FLCD/tree/main/Lab%205

Documentation:

class FA: - The finite automaton class

def __init__(self):

self.set_of_states = string

self.alphabet = string

self.transitions = string

self.final_states = list of states

self.Transitions = list of transitions

self.initial_state = state

def read_fa(self, file_name): - reads the file and parses the input into the final_states/alphabet/transitionsa/initial_state/set_of_states

def verify_sequence(self, sequence): -first checks if the finite automaton is deterministic

- And after that if it is deterministic it checks if the sequence is valid
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def verify(self, first, sequence): - this takes recursively one by one the first symbol of the sequence and it goes trough the transitions until it finds the right one until the sequence is empty, then it checks if it is in a final state

def is_deterministic_finite_automaton(self): - checks if the automaton is deterministic by making sure there is only one way of proceeding.

class Transition: This is the object we use for the transitions

def matches(self, initial, trough): - checks if this transition matches a state and a symbol

class State: this is the class we use to work with states

def split_states(line): - parses the input file and returns a list of states