A Pushdown automata (PDA) works similar as DFA.

A DFA can remember a finite amount of information, but a PDA can remember an infinite amount of information.

A PDA can be formally described as a 7-tuple (Q, $\Sigma, \mathrm{S}, \delta, \mathrm{q} 0, \mathrm{I}, \mathrm{F})$ -

1. Q: Finite number of states
2. $\sum$ : Input alphabet
3. S: Stack
4. $\delta:$ Transition function: $Q \times(\Sigma \cup\{\varepsilon\}) \times S \times Q \times S^{*}$
5. q0: Initial state $(q 0 \in Q)$
6. I: Initial stack top symbol $(I \in S)$
7. F: Final state

PDA $=$ FSM + Stack

Where, FSM for finite state machine.

Components of PDA are,

1. Input tape
2. Control unit
3. Stack
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55. Design a NFA that accepts the language over the alphabet, $\Sigma=\{0,1,2\}$ where the decimal equivalent of the language is divisible by 3.
