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TOC Tutorial 6 (II)

1. PDA for even Palindrome over $\{1, 0\}$.

Automaton Simulator: DFA NFA PDA Examples

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```
graph LR
    start((start)) -- "epsilon, epsilon, Z" --> s0((s0))
    s0 -- "0, epsilon, 0" --> s0
    s0 -- "1, epsilon, 1" --> s0
    s0 -- "epsilon, 0, 1" --> s0
    s0 -- "epsilon, epsilon, epsilon" --> s1((s1))
    s1 -- "0, 0, epsilon" --> s1
    s1 -- "1, 1, epsilon" --> s1
    s1 -- "epsilon, 1, epsilon" --> s1
    s1 -- "epsilon, Z, epsilon" --> s2(((s2)))
    style s2 fill:#add8e6,stroke:#000,stroke-width:2px
```

Test / Debug:

Bulk Testing

Accept (one per line):

```
001100
10011001
101101
010010
1111
```

Reject (one per line):

```
0001000
101010
10101
101
111000
```

Test Results:

```
Accept: 001100 -- Pass
Accept: 10011001 -- Pass
Accept: 101101 -- Pass
Accept: 010010 -- Pass
Accept: 1111 -- Pass
Reject: 0001000 -- Pass
Reject: 101010 -- Pass
Reject: 10101 -- Pass
Reject: 101 -- Pass
Reject: 111000 -- Pass
```

Kyle Dickerson -- kyle.dickerson@gmail.com -- On GitHub Tools: Query jsPlumb Icons: FatCov

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2. PDA for accepting matching parentheses (consider 'o' for '(' and 'c' for ')')

Automaton Simulator: DFA NFA PDA Examples

Test / Debug:

Bulk Testing

Accept (one per line):

```
oococ
ococ
ooccc
```

Reject (one per line):

```
ooo
cooo
ooccc
```

Test Results:

```
Accept: oococ -- Pass
Accept: ococ -- Pass
Accept: ooccc -- Pass
Reject: ooo -- Pass
Reject: cooo -- Pass
Reject: ooccc -- Pass
```

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Diagram of the PDA states and transitions:

- Start state: start
- State s0: ϵ, ϵ, Z transition to s0; o, ϵ, o transition to s0; c, ϵ, c transition to s0.
- State s1: ϵ, Z, ϵ transition to s1.

Kyle Dickerson - kyle.dickerson@gmail.com - On GitHub Tools: jQuery isPlumb Icons: FatCow

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