

Yves Nieto
DPDA Project

$S \rightarrow E\$$

$E \rightarrow T E1$

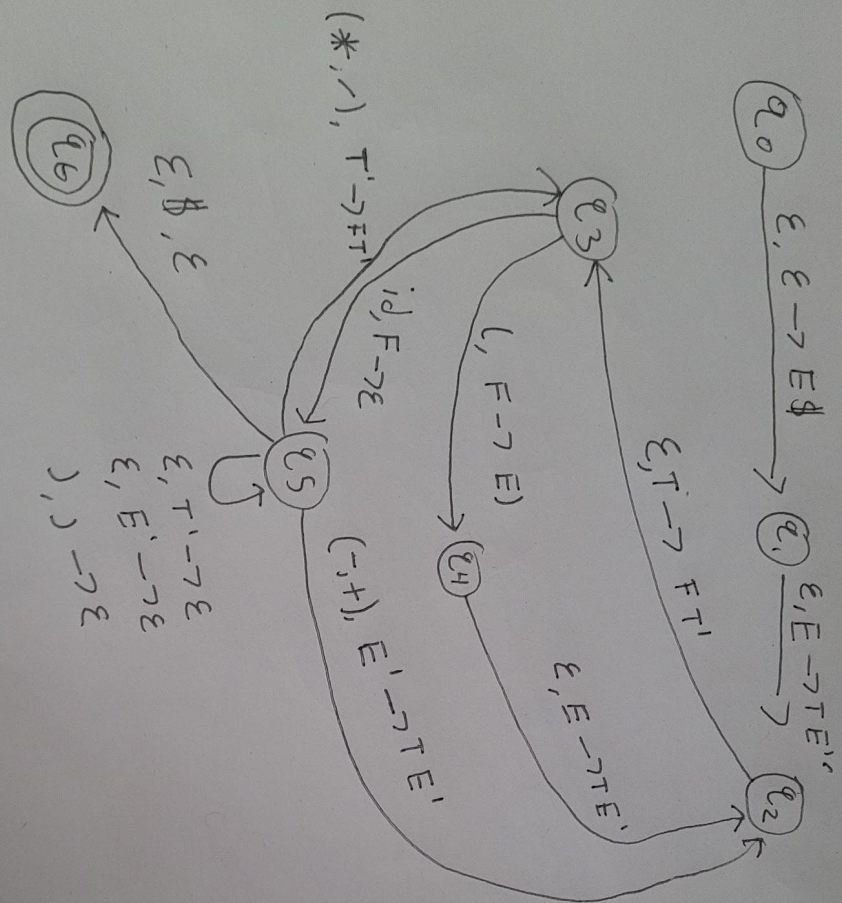
$E1 \rightarrow +T E1 \mid -T E1 \mid \in$

$T \rightarrow F T1$

$T1 \rightarrow * F T1 \mid / F T1 \mid \in$

$F \rightarrow (E) \mid 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9$

Transition Diagram



$id = 0, 1, 2, \dots, 9$

Transition States

`==minus

H==T'

G==E'

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o yvesnieto@WalrusLaptop:~/PROJECTS/DPDA$ /bin/python /home/yvesnieto/PROJECTS/DPDA/DPDA.py
Printing all Transitions...
Transitions for state 0:
[eps,eps-> E$]
Transitions for state 1:
[eps,E-> TG]
Transitions for state 2:
[eps,T-> FH]
Transitions for state 3:
[(,F-> E)]
[9,F-> eps]
[8,F-> eps]
[7,F-> eps]
[6,F-> eps]
[5,F-> eps]
[4,F-> eps]
[3,F-> eps]
[2,F-> eps]
[1,F-> eps]
[0,F-> eps]
Transitions for state 4:
[eps,E-> TG]
Transitions for state 5:
[*,H-> FH]
[/,H-> FH]
[,)-> eps]
[,G-> TG]
[+,G-> TG]
[eps,$-> eps]
[eps,H-> eps]
[eps,G-> eps]
Transitions for state 6:
Enter a string to be processed by the PDA:█
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(2+5)-4*3/2 Accepted

```
Accept string (2+5) 4*3/2? true
(q0;(2+5) 4*3/2;eps)-->[eps,eps->E$]-->(q1;(2+5) 4*3/2;E$)-->[eps,E->TG]-->(q2;(2+5) 4*3/2;TG$)-->[eps,T->FH]-->(q3;(2+5) 4*3/2;FH$)-->[(,F->E)]-->(q4;(2+5) 4*3/2;E)HG$)-->[eps,E->TG]
-->(q2;(2+5) 4*3/2;TG)HG$)-->[eps,T->FH]-->(q3;(2+5) 4*3/2;FH)HG$)-->[2,F->eps]-->(q5;+5) 4*3/2;HG)HG$)-->[eps,H->eps]-->(q5;+5) 4*3/2;G)HG$)-->[+,G->TG]-->(q2;5) 4*3/2;TG)HG$)-->[eps,
T->FH]-->(q3;5) 4*3/2;FH)HG$)-->[5,F->eps]-->(q5;) 4*3/2;HG)HG$)-->[eps,H->eps]-->(q5;) 4*3/2;G)HG$)-->[eps,G->eps]-->(q5;) 4*3/2;)HG$)-->[,)->eps]-->(q5; 4*3/2;HG$)-->[eps,H->eps]-
->(q5; 4*3/2;G$)-->[,G->TG]-->(q2;4*3/2;TG$)-->[eps,T->FH]-->(q3;4*3/2;FH$)-->[4,F->eps]-->(q5;*3/2;HG$)-->[,H->FH]-->(q3;3/2;FH$)-->[3,F->eps]-->(q5;2;HG$)-->[/,H->FH]-->(q3;2;FH
G$)-->[2,F->eps]-->(q5;eps;HG$)-->[eps,H->eps]-->(q5;eps;G$)-->[eps,G->eps]-->(q5;eps;$)-->[eps,$->eps]-->(q6;eps;eps)
Enter a string to be processed by the PDA:█
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()() Rejected

```
Accept string ()() false
(q0;()();eps)-->[eps,eps->E$]-->(q1;()();E$)-->[eps,E->TG]-->(q2;()();TG$)-->[eps,T->FH]-->(q3;()();FH$)-->[(,F->E)]-->(q4;()();E)HG$)-->[eps,E->TG]-->(q2;()();TG)HG$)-->[ep
s,T->FH]-->(q3;()();FH)HG$)
Enter a string to be processed by the PDA:█
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$(5+3*9+6)/(3+2)$ Accepted

```
Accept string (5+3*9+6)/(3+2)? true
(q0;(5+3*9+6)/(3+2);eps)--[eps,eps->E$]-->(q1;(5+3*9+6)/(3+2);E$)--[eps,E->TG]-->(q2;(5+3*9+6)/(3+2);TG$)--[eps,T->FH]-->(q3;(5+3*
9+6)/(3+2);FHG$)--[(,F->E)]-->(q4;5+3*9+6)/(3+2);E)HG$)--[eps,E->TG]-->(q2;5+3*9+6)/(3+2);TG)HG$)--[eps,T->FH]-->(q3;5+3*9+6)/(3+2
);FHG)HG$)--[5,F->eps]-->(q5;+3*9+6)/(3+2);HG)HG$)--[eps,H->eps]-->(q5;+3*9+6)/(3+2);G)HG$)--[+,G->TG]-->(q2;3*9+6)/(3+2);TG)HG$)-
-[eps,T->FH]-->(q3;3*9+6)/(3+2);FHG)HG$)--[3,F->eps]-->(q5;*9+6)/(3+2);HG)HG$)--[*,H->FH]-->(q3;9+6)/(3+2);FHG)HG$)--[9,F->eps]-->
(q5;+6)/(3+2);HG)HG$)--[eps,H->eps]-->(q5;+6)/(3+2);G)HG$)--[+,G->TG]-->(q2;6)/(3+2);TG)HG$)--[eps,T->FH]-->(q3;6)/(3+2);FHG)HG$)-
-[6,F->eps]-->(q5;)/(3+2);HG)HG$)--[eps,H->eps]-->(q5;)/(3+2);G)HG$)--[eps,G->eps]-->(q5;)/(3+2);)HG$)--[(,)->eps]-->(q5;)/(3+2);HG
$)--[(,H->FH]-->(q3;(3+2);FHG$)--[(,F->E)]-->(q4;3+2);E)HG$)--[eps,E->TG]-->(q2;3+2);TG)HG$)--[eps,T->FH]-->(q3;3+2);FHG)HG$)--[3,
F->eps]-->(q5;+2);HG)HG$)--[eps,H->eps]-->(q5;+2);G)HG$)--[+,G->TG]-->(q2;2);TG)HG$)--[eps,T->FH]-->(q3;2);FHG)HG$)--[2,F->eps]-->
(q5;);HG)HG$)--[eps,H->eps]-->(q5;);G)HG$)--[eps,G->eps]-->(q5;);)HG$)--[(,)->eps]-->(q5;eps;HG$)--[eps,H->eps]-->(q5;eps;G$)--[ep
s,G->eps]-->(q5;eps;$)--[eps,$->eps]-->(q6;eps;eps)
Enter a string to be processed by the PDA:
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$3+(-3)$ Rejected

```
Accept string 3+(-3)? false
(q0;3+(-3);eps)--[eps,eps->E$]-->(q1;3+(-3);E$)--[eps,E->TG]-->(q2;3+(-3);TG$)--[eps,T->FH]-->(q3;3+(-3);FHG$)--[3,F->eps]-->(q5;+
(-3);HG$)--[eps,H->eps]-->(q5;+(-3);G$)--[+,G->TG]-->(q2;(-3);TG$)--[eps,T->FH]-->(q3;(-3);FHG$)--[(,F->E)]-->(q4;(-3);E)HG$)--[eps
,E->TG]-->(q2;(-3);TG)HG$)--[eps,T->FH]-->(q3;(-3);FHG)HG$)
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