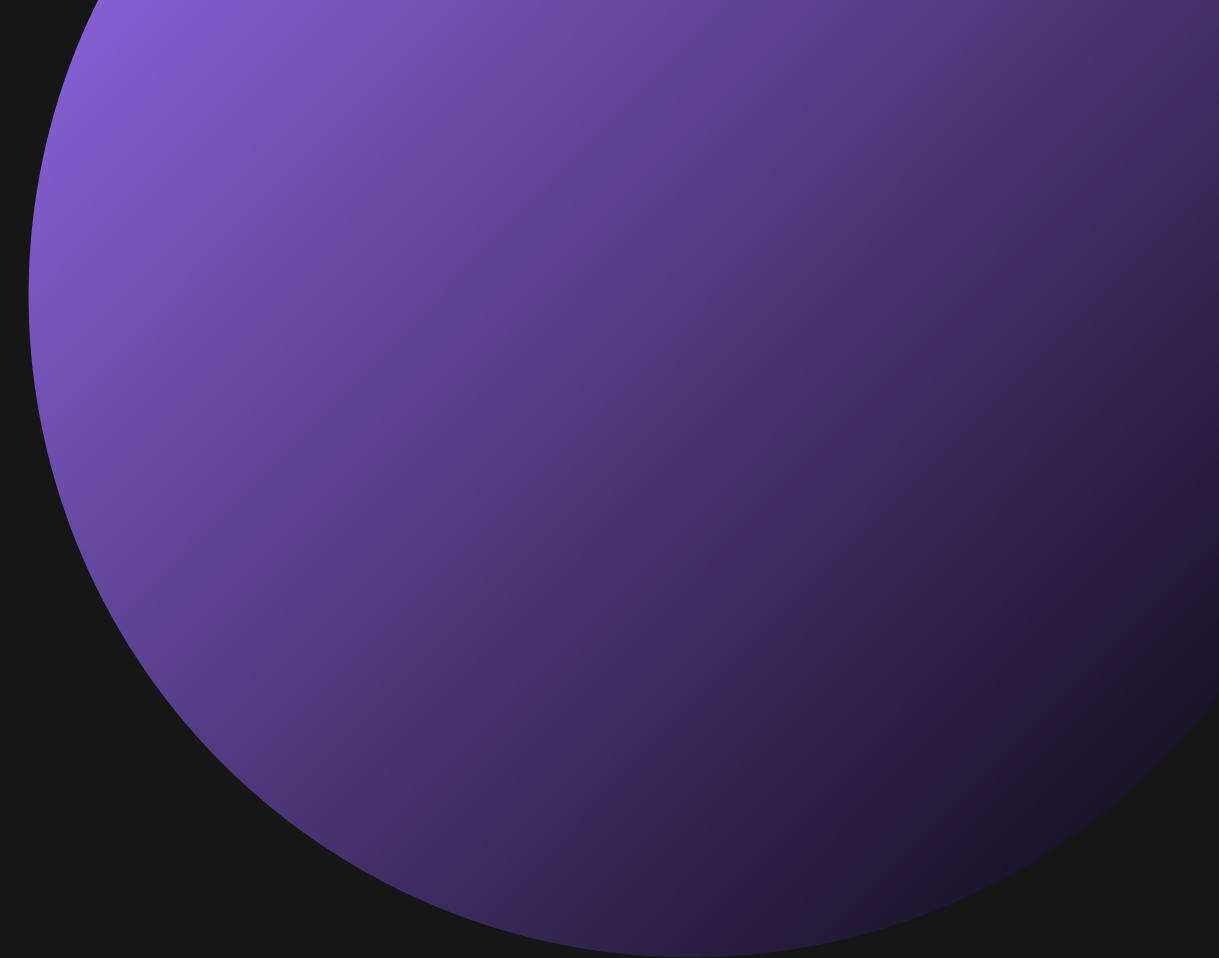


# CFG to PDA **Conversion & Implementation**

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# CFG

$S \rightarrow XADBDXB$

$A \rightarrow * | / | + | -$

$B \rightarrow XADBDXB \mid (XADBDXB)$

$B \rightarrow 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid$   
 $8 \mid 9 \mid BB$

$C \rightarrow 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9 \mid CC$

$D \rightarrow \_ \mid DD$

$X \rightarrow D \mid \epsilon$



# CNF

$S \rightarrow EF \mid JK$

$A \rightarrow * \mid / \mid + \mid -$

$B \rightarrow EF \mid LM \mid JK \mid NT$

$B \rightarrow 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid$   
 $8 \mid 9 \mid BB$

$C \rightarrow AD$

$D \rightarrow _ \mid DD$

$E \rightarrow CB$

$F \rightarrow DB$

$G \rightarrow ($

$H \rightarrow )$

$J \rightarrow DE$

$K \rightarrow FD$

$L \rightarrow GE$

$M \rightarrow FH$

$N \rightarrow GJ$

$T \rightarrow KH$

The logo consists of the letters 'GNF' in a white, stylized, rounded font. The letters are slightly shadowed, giving them a 3D appearance as if they are floating above or attached to the purple circle. The background is a large purple circle with a gradient from light purple to dark purple. There are also several smaller circles of various colors (purple, orange, pink) scattered around the main logo.

S → \*DBF | /DBF | +DBF | -DBF | \_VEK | \_EK

A → \*|+|-|/|[spasi]A|\*D|+D|-D|/D|[spasi]Y

B → \*DBFW | /DBFW | +DBFW | -DBFW | (EMW | \_VEKW | \_EKW | (JTW | \*DBF | /DBF | +DBF | -DBF | (EM | \_VEK | \_EK | (JT | OW | 1W | 2W | 3W | 4W | 5W | 6W | 7W | 8W | 9W | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

W → \*DBFW | /DBFW | +DBFW | -DBFW | (EMW | \_VEKW | \_EKW | (JTW | \*DBF | /DBF | +DBF | -DBF | (EM | \_VEK | \_EK | (JT | OW | 1W | 2W | 3W | 4W | 5W | 6W | 7W | 8W | 9W | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | \*DBFWW | /DBFWW | +DBFWW | -DBFWW | (EMWW | \_VEKWW | \_EKWW | (JTWW | OWW | 1WW | 2WW | 3WW | 4WW | 5WW | 6WW | 7WW | 8WW | 9WW

D → \_V | \_

V → \_VV | \_V | \_

E → \*DB | /DB | +DB | -DB

F → \_VB | \_B

H → )

J → \_VE | \_E

K → \_VBD | \_BD

M → \_VBH | \_BH

T → \_VBDH | \_BDH

# PDA

$$\delta(q, \varepsilon, S) = \{(q, *DBF), (q, /DBF), (q, +DBF), (q, -DBF), (q, \_VEK), (q, \_EK)\}$$

$$\delta(q, \varepsilon, B) = \{(q, *DBFW), (q, /DBFW), (q, +DBFW), (q, -DBFW), (q, (EMW), (q, \_VEKW), (q, \_EKW), (q, (JTW), (q, *DBF), (q, /DBF), (q, +DBF), (q, -DBF), (q, \_VEK), (q, \_EK), (q, (JT), (q, 0W), (q, 1W), (q, 2W), (q, 3W), (q, 4W), (q, 5W), (q, 6W), (q, 7W), (q, 8W), (q, 9W), (q, 0), (q, 1), (q, 2), (q, 3), (q, 4), (q, 5), (q, 6), (q, 7), (q, 8), (q, 9)\}$$

$$\delta(q, \varepsilon, W) = \{(q, *DBFW), (q, /DBFW), (q, +DBFW), (q, -DBFW), (q, (EMW), (q, \_VEKW), (q, \_EKW), (q, (JTW), (q, *DBF), (q, /DBF), (q, +DBF), (q, -DBF), (q, \_VEK), (q, \_EK), (q, (JT), (q, 0W), (q, 1W), (q, 2W), (q, 3W), (q, 4W), (q, 5W), (q, 6W), (q, 7W), (q, 8W), (q, 9W), (q, 0), (q, 1), (q, 2), (q, 3), (q, 4), (q, 5), (q, 6), (q, 7), (q, 8), (q, 9)\}$$

$$\delta(q, \varepsilon, D) = \{(q, \_V), (q, \_)\}$$

$$\delta(q, \varepsilon, V) = \{(q, \_VV), (q, \_V), (q, \_)\}$$

$$\delta(q, \varepsilon, E) = \{(q, *DB), (q, /DB), (q, +DB), (q, -DB)\}$$

$$\delta(q, \varepsilon, F) = \{(q, \_VB), (q, \_B)\}$$



# PDA

$$\delta(q, \varepsilon, H) = \{(q, )\}$$

$$\delta(q, \varepsilon, J) = \{(q, \_VE), (q, \_E)\}$$

$$\delta(q, \varepsilon, K) = \{(q, \_VBD), (q, \_BD)\}$$

$$\delta(q, \varepsilon, M) = \{(q, \_VBH), (q, \_BH)\}$$

$$\delta(q, \varepsilon, T) = \{(q, \_VBDH), (q, \_BDH)\}$$

$$\delta(q, 0, 0) = (q, \varepsilon)$$

$$\delta(q, 1, 1) = (q, \varepsilon)$$

$$\delta(q, 2, 2) = (q, \varepsilon)$$

$$\delta(q, 3, 3) = (q, \varepsilon)$$

$$\delta(q, 4, 4) = (q, \varepsilon)$$

$$\delta(q, 5, 5) = (q, \varepsilon)$$

$$\delta(q, 6, 6) = (q, \varepsilon)$$

$$\delta(q, 7, 7) = (q, \varepsilon)$$

$$\delta(q, 8, 8) = (q, \varepsilon)$$

$$\delta(q, 9, 9) = (q, \varepsilon)$$

$$\delta(q, *, 8) = (q, \varepsilon)$$

$$\delta(q, /, /) = (q, \varepsilon)$$

$$\delta(q, +, +) = (q, \varepsilon)$$

$$\delta(q, -, -) = (q, \varepsilon)$$

$$\delta(q, \_, \_) = (q, \varepsilon)$$

$$\delta(q, ), ) = (q, \varepsilon)$$

$$\delta(q, (, () = (q, \varepsilon)$$



**Go to code!**

**Thank You**

