

Type	Name	Allowable Productions	Example Language	Example Grammar	Example Use	Recognizing Automaton	Storage Required	Parsing Complexity
0	Type 0	Unrestricted				Turing Machine	Infinite Tape	Undecidable
1	Context Sensitive	$\alpha \rightarrow \beta$ where $ \alpha \leq \beta $ $\alpha \in V^*NV^*$ $\beta \in V^+$	$a^n b^n c^n$	$S \rightarrow aSBC$ $S \rightarrow aBC$ $CB \rightarrow BC$ $aB \rightarrow ab$ $bB \rightarrow bb$ $bC \rightarrow bc$ $cC \rightarrow cc$		Linear Bounded Automaton	Tape a linear multiple of input length	NP Complete
2	Context Free	$A \rightarrow \alpha$ $A \in N$ $\alpha \in V^*$	$a^n b^n$	$S \rightarrow aSb$ $S \rightarrow ab$	Arithmetic Expression $x = a + b * c$	Pushdown Automaton	Pushdown Stack	$O(n^3)$
3	Regular Right Linear Finite Automaton Recognizable	$A \rightarrow xB$ $A \rightarrow x$ $A, B \in N$ $x \in T^*$	a^nb	$S \rightarrow ab$ $S \rightarrow aS$	Identifier VECTOR7	Finite Automaton	Finite Storage	$O(n)$