

# Construct CFG for the given languages

- $L = \{w \mid w \text{ contains at least three } 1's\}$   $\Sigma = \{0,1\}$
- $L = \{w \mid \text{the length of } w \text{ is odd \& its middle symbol is } 0\}$   $\Sigma = \{0,1\}$
- $L = \{w \mid w \text{ contains more } 0's \text{ than } 1's\}$   $\Sigma = \{0,1\}$
- $L = \{0^i 1^j \mid i \leq j\}$
- $L = \{0^i 1^j \mid i < 2j\}$
- $L = \{0^i 1^j \mid j = 2i\}$
- $L = \{a^i b^j c^k \mid i, j, k \geq 0 \& i = j \text{ or } j = k\}$
- $L = \{a^i b^j c^k \mid i, j, k \geq 0 \& i + j = k\}$
- $L = \{a^i b^j c^k \mid i, j, k \geq 0 \& i + k = j\}$
- $L$  is non palindrome language over  $\{a, b\}$
- $L = \{w : w \text{ has twice as many } a's \text{ as } b's\}$
- $L = \{a^i b^j : i = 3j + 2\}$
- $L = \{a^{2i} b^{3j} : i, j \geq 0\}$
- $L = \{w \mid \text{length of } w \text{ is odd}\}$
- $L = \{w \mid \text{length of } w \text{ is divisible by } 3\}$
- $L = \{(ab)^m c^n d^n (c)^m \mid m, n > 0\}$
- $L = \{(a^i b^i)^m (b^j a^j)^m \mid i \geq 0, j > 0, m \geq 0\}$
- $L = \{a^n b^n c^m \mid n, m \geq 2\}$
- $L = \{a^n b^m c^n \mid n, m \geq 2\}$
- $L = \{a^n b^m \mid n + m = \text{even}\}$
- $L = \{a^n b^m \mid n + m = \text{odd}\}$

## HTML Table Creator

Statement:	Sample HTML Code								
<p>Consider a context-free grammar that generates Strings in a specific format to create an HTML table. The grammar produces a table with rows%3=0 contains Numbers only, where all other rows can contain a Number or Alphabet. The goal is to design a grammar that generates valid HTML code for such a table structure.</p> <p>Sample Output:</p> <table border="1"> <tbody> <tr> <td>2</td><td>4</td></tr> <tr> <td>A</td><td>5</td></tr> <tr> <td>1</td><td>D</td></tr> <tr> <td>8</td><td>9</td></tr> </tbody> </table>	2	4	A	5	1	D	8	9	<pre>&lt;table&gt;    &lt;tr&gt;     &lt;td&gt;2&lt;\td&gt;     &lt;td&gt;4&lt;\td&gt;   &lt;\tr&gt;   &lt;tr&gt;     &lt;td&gt;A&lt;\td&gt;     &lt;td&gt;5&lt;\td&gt;   &lt;\tr&gt;   &lt;tr&gt;     &lt;td&gt;1&lt;\td&gt;     &lt;td&gt;D&lt;\td&gt;   &lt;\tr&gt;   &lt;tr&gt;     &lt;td&gt;8&lt;\td&gt;     &lt;td&gt;9&lt;\td&gt;   &lt;\tr&gt;  &lt;\table&gt;</pre>
2	4								
A	5								
1	D								
8	9								

Design a context-free grammar that generates HTML code for a table with rows%3=0. The multiple of 3 rows should display numbers in each cell, while all the other rows should display alphabet or number. Each row should have at least one cells/columns. Table must contain at least one row. So the minimum number of rows and columns could be a single cell that is one row and one column. Your CFG can have variable number of cells/columns for each row. The generated HTML code should follow the standard syntax and structure of an HTML table. For the context-free grammar, you need to define the production rules that generate the HTML code for the desired table structure. Consider the use of non-terminal symbols for different components of the HTML code, such as the <table>, <tr>, <th>, and <td> tags, as well as the number and alphabet elements. You can use this scenario to design and explore the grammar rules that would generate the desired HTML table structure.