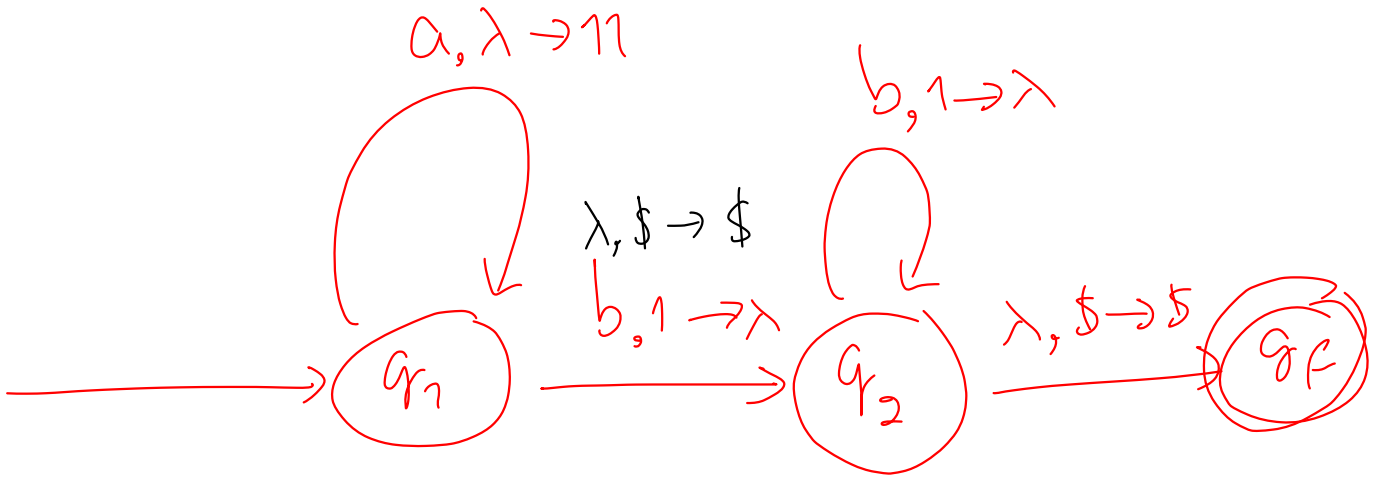
# Theory of Computation

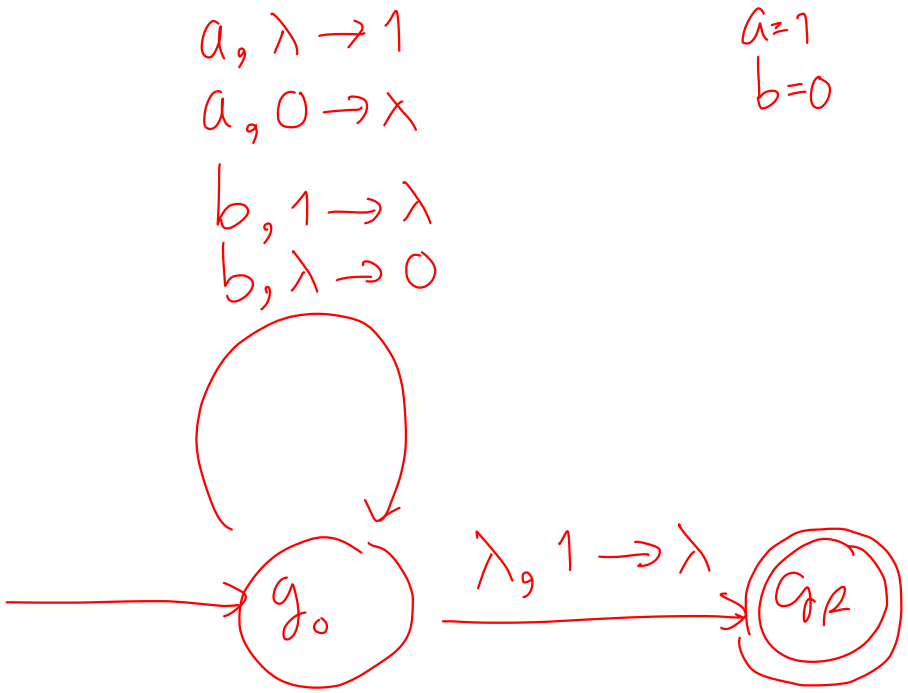
## Exercise 10: (Pushdown Automata)

Find Pushdown Automata for the following languages.

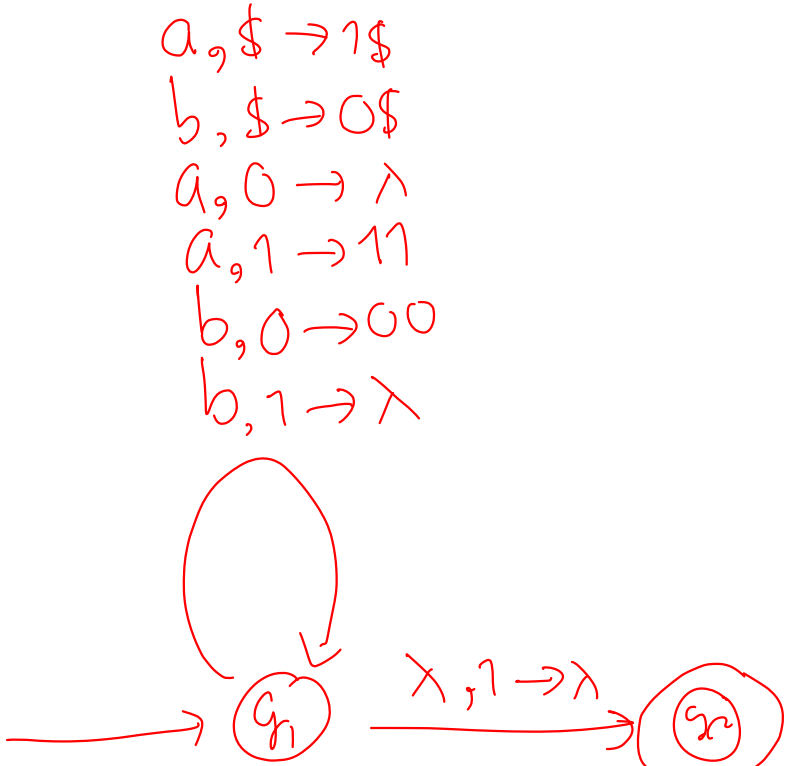
1. L1 ={ $a^n b^{2n} : n \geq 0$ }



2. L2 $=\{w \in \{a,b\}^*: n_a(w) > n_b(w)\}$




a=1
b=0



*3. L3 $=\{a^n b^m a^{n+m} : n, m \geq 1\}$

(Submit 8)