Homework 3 - CSC 320

1. Show that the grammar $S \to 1S|0S1S|\epsilon$ is ambiguous by drawing two parse trees for some string.

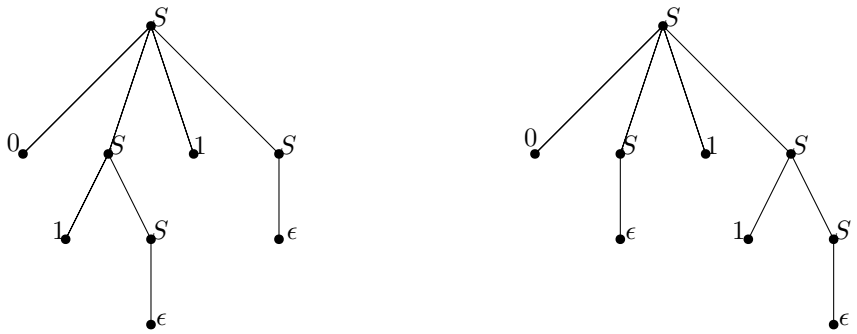

Figure 1: For the string 011 there are two leftmost derivations

2. Use the technique in class to find the PDA which accepts strings generated by the grammar in question 1. You may NOT assume you are allowed to push more than one stack symbol on the stack at a time.

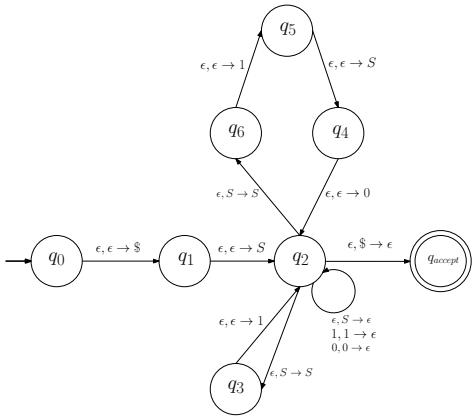

Figure 2: The PDA which accepts strings generated by the grammar in question 1

3. Give a PDA to accept $L' = \{w \in \{0,1\} | w \text{ contains twice as many 1's as 0's}\}$.

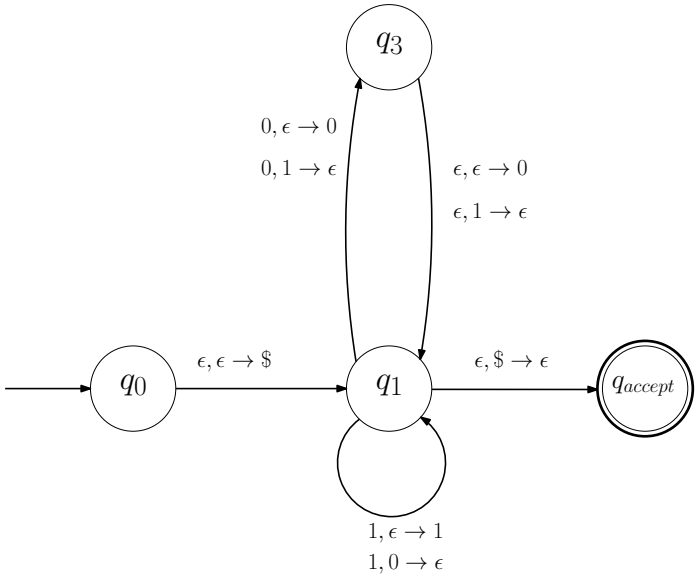

Figure 3: The PDA for L'