Theoretical Computer Science
Tutorial VI

1) Explain Pumping Lemma with the help of a diagram to prove that given language is not a regular language.
2) Check if the following language is regular or not by using pumping lemma.
   a) $L=\{0^i1^j \mid i>j\}$
   b) $L=\{0^m1^n \mid gcd(m,n)=1\}$
   c) $L=\{0^{2n} \mid n>=1\}$
   d) $L=\{0^{2n+1} \mid n>=0\}$
   e) $L=\{a^xb^mc^n \mid n, x>=3\}$
   f) $L=\{ a^n \mid n>=0\}$
   g) $L=\{ww \mid w \in \{a,b\}^*\}$
   h) $L = \{x \mid x \text{ is palindrome}, x \in \{0,1\}^*\}$
   i) L= equal number of 0's and 1's anywhere.
   j) $L=\{ a^p \mid p \text{ is prime}\}$