Assignment 1.1 Regular Expressions
Give regular expressions (containing terminals, parenthesis, '|', and '*') where '|' is used at most once such that the language of the regular expression satisfies the given constraints.

1. Language includes:
   - ca
   - cccccc
   - ccaa

2. Language includes:
   - abc
   - abca
   - abcabc

3. Language includes:
   - j
   - iiiij
   - ixxxxxxxxj
   - ixxiij

Assignment 1.2 Languages of Regular Expressions
Give the languages described by the following regular expressions.
For example $[a^*] = \{a^n \mid n \in \mathbb{N}\}$

1. $[x^*y^*]$
2. $[(a|b|\epsilon)c(a|\epsilon)]$
3. $[(x|y^*)z]$ 

Assignment 1.3 Automata Implementation
Come up with an implementation of the following given automata in Java. Do not make use of any “fancy” library, i.e., YOU should do the implementation ;-)