Name: Dat Quoc Ngo

NET ID: dqn170000

Date: Feb 12, 2021

Homework 1

1. Regular Expression
   1. The set of all alphabetic strings

[a-zA-Z]+

* 1. The set of all alphabetic words

\b[a-zA-Z]\*\b

* 1. The set of all lower case alphabetic strings ending in a b

[a-z]\*b

* 1. The set of all lower case alphabetic words ending in a b

\b[a-zA-Z]\*b\b

* 1. The set of all strings from the alphabet {“a”, “b”} such that each “a” is immediately preceded by and immediately followed by at least one “b”

b(ab|b)\*

* 1. The set of all words from the alphabet {“a”, “b”} such that each “a” is immediately preceded by and immediately followed by at least one “b”

\bb(ab|b)\*\b

* 1. The set of all strings from the alphabet {“a”, “b”} that form the pattern a^nb^m where (n+m) is even; n>=0, m>=0, and (n+m)>0

2 cases: n and m are even: (aa)\*(bb)\*; n and m are odd: a(aa)\*b(bb)\*

Final result: ((a(aa)\*b(bb)\*)|((aa)\*(bb)\*))

1. Run the attached q2.py
2. Run the attached q3.py

Diagram

Description automatically generated