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CSF331 Assignment 1

Exercise

A. Fifty fearless firefighters found foliage for friendly florists.
B.
    a. The type checking in C++ is static.
    b. It means that the code runs before runtime.
C. S
    - #3
    - #5
D. You can have any number of x's between two or more y's.
E. Strings matched by *x*(ab|c)**
    - #3 xxabc
    - #4 abc
    - #5 abab
    - #7 cab
F. b*a+(a|b)*
G.

S -> SS | A

A -> xy

1. Leftmost derivation for the string xyxy
    - S
    - SS
    - AS
    - xyS
    - xyA
    - xyxy

2. Rightmost derivation for the string xyxy
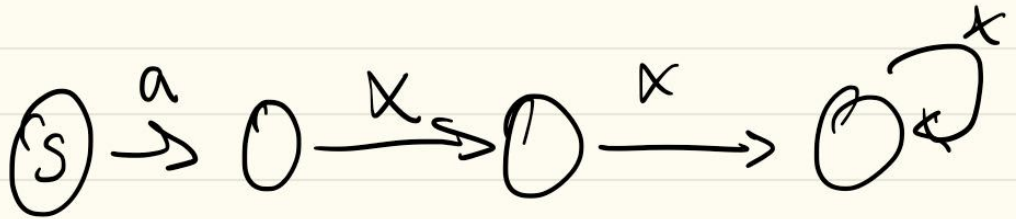   - S
    - SS
    - SA
    - Sxy
    - Axy
    - xyxy

3.

S
SS A
xy
SA AS
A A Sxy
xyxy
Axy
xyxy

Found two parse trees

4. S -> xyS | A
   A -> xy

H. {*axx,axxx,axxxx,axxxxx,…*}
1. Regex:
   (axx)(x)*
2.

3.
4. String ::<letter> | <letter> {<xParser>}
   Letter ::="axx"
   xParser ::="x"
5. There is only one parse tree, therefore it is not ambiguous