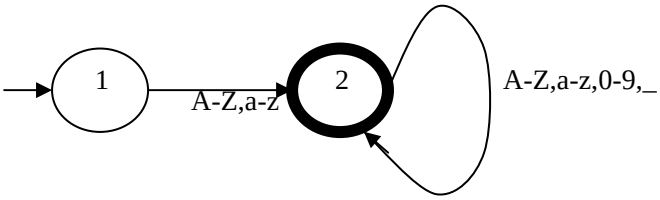
CS352 Homework1 solution

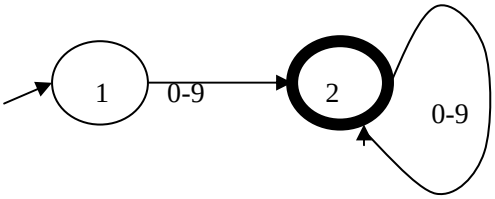
(100 pts)

Exercise 1

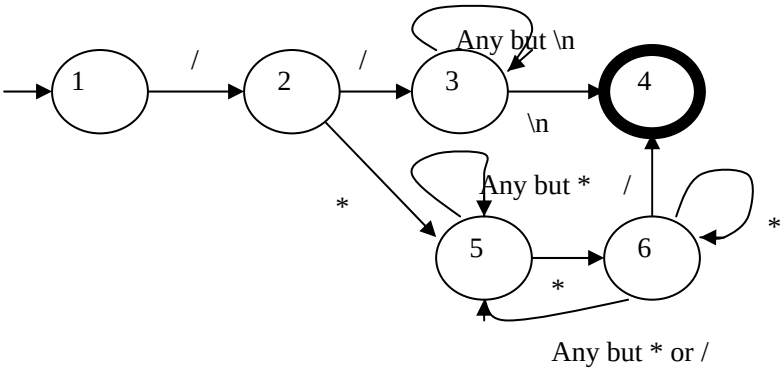
Identifiers (10 pts)



Integer literals (10 pts)



Comments (no nested comments) (20 pts)



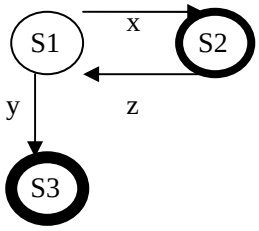
Exercise 2

2.1(e) (a|c) *(b | ba | bac(a|c)* | bc(a|c)*)* (15 pts)

2.1(f) (0[0-7]*)|([1-9][0-9]*) (15 pts)

2.5(a) **(15 pts)**

	x	y	Z
S1:{1,2,3,4}	5,6,7	6,7	
S2:{5,6,7}			1,2,3,4
S3:{6,7}			



2.8(a) (15pts) 3 is the maximum. After reaching state 5, we may have to pass states 6 and 7 (e.g. by scanning e, +, x) before realizing that we already were at the end of the token in state 5. (One may also say the answer is 2 by explaining that the last "illegal character" is not counted. In any case, an explanation should be given in addition to giving a number.)

Tips: the answer to this kind of questions is usually answered by finding the longest distance between 2 final states (e.g. states 5 and 7), suppose there are no other final states between these two.