

Assignment 3 Solutions

CMPT 440L - SPRING 2020

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1)

Base case: When $|x| = 0$

$$= \text{val}(x) \bmod 2 = 1$$

Inductive Case: When $|x| > 0 = \hat{I}^*(0, yc)$

$$= \hat{I}^*(\hat{I}^*(0, y), c)$$

$$= \hat{I}^*(\text{val}(y) \bmod 2, c)$$

$$= (2(\text{val}(y) \bmod 3) + c) \bmod 2 = 1$$

$$= 2(\text{val}(y) + c) \bmod 2$$

$$= \text{val}(yc) \bmod 2 = 1$$

$$= \text{val}(x) \bmod 2 = 1$$

2)

a) accepted

b) accepted

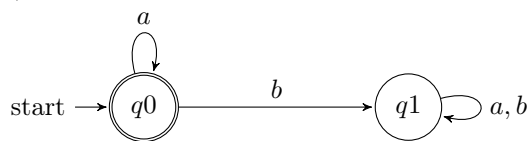
c) accepted

d) not accepted

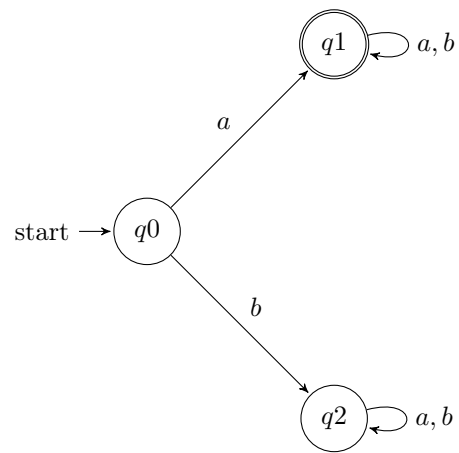
e) accepted

3)

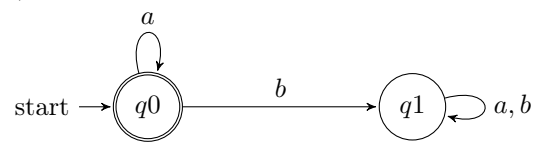
a)



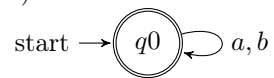
b)



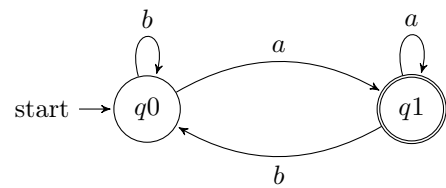
c)



d)



e)



f)

