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Formal Language and Autonoma

Homework 1, Pseudo Code Proof

October 7, 2016

Let e = the empty string

Let w = {1,0}\*

Es.First()

prevstring = e

if accepts(prevstring)

return prevstring

Es.next()

L = length of prevstring - 1

if prevstring = e // COND 1: e will always return 0 as next element

if accepts(prevstring)

return “0”;

else

if prevstring[L] = “1”// COND 2: find first 0 in string and replace rest with 0’s

bool = true

while bool = true

newL = L-1

if prevstring[newL] = “1”

do nothing

if prevstring [newL] = “0”

prevstring[newL] = “1” //reassign 0 with 1

while newL < L

newL = newL+1

prevstring[newL] = “0”

bool = false

if bool = true

prevstring = string of L+1 number of 0’s

if accepts(prevstring)

return prevstring

else

w.add(prevstring)

if accepts(prevstring)

return prevstring

if prevstring[L] = “0” // COND 3: if ending char is 0, replace with 1

prevstring[L] = “1”

if accepts(prevstring)

return prevstring

Ds.accepts()

if prevstring in w return true