

CSCI 232 OutLab - Turing Machines

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Machine 1

Computes the function $f(n) = n \bmod(3)$

Essentially we will be doing repeated subtraction.

$S_0 1 S_1 1 R$
 $S_1 1 S_2 1 R$
 $S_2 1 S_3 1 R$
 $S_3 1 S_4 1 L$
 $S_4 1 S_5 B L$
 $S_5 1 S_6 B L$
 $S_6 1 S_7 B R$
 $S_7 B S_8 B R$
 $S_8 B S_0 B R$

Machine 2

Accept a string in the form $S = x^n * y^n$

B are the null items surrounding our string... "BBBxxxyyyBBB"

$S_0 X S_1 X R$
 $S_0 Y H Y N$
 $S_0 B H B N$
 $S_1 X S_1 X R$
 $S_1 Y S_2 Y R$
 $S_1 B H B N$
 $S_2 X H X N$
 $S_2 Y S_2 Y N$
 $S_2 B H B N$