CS250 Lab 17 – Other Models of Computation

Objectives: In this lab you will learn how to

- write primitive recursive and recursive functions

Assignment 1:
Complete exercises #3, #10 on pp344-345 of your text.

Assignment 2:
There exists two really cool primitive recursive functions:
$T(z, x_1, x_2, ..., x_n, y)$ returns 0 if z is an encoding of a TM, and its computation with inputs x_1, ... x_n encodes to y. The function returns 1 otherwise.
$U(y)$ returns the result of the computation y.

Use these two functions and the μ operator to get a definition of a function $f(x_1, x_2, ...x_n)$ which returns the output of the TM encoded by z.

The existence of these two functions T and U shows the recursive function model is equivalent to the Turing Machine model!

Submit your files in goucherLearn for grading.