Honors Lab 1

3.3.2010

The Problem

A *genetic algorithm* consists of a population of individuals, where each individual is a bit string (i.e., a list of 0's and 1's). For example, 0010101010 could be a genetic algorithm individual.

A *fitness function* interprets an individual and assigns it a fitness that represents how good or bad the solution is. One simple fitness function is *counting ones*, where an individual's fitness is simply the number of ones in the bit string. For example, the bit string 011100 would have a fitness of 3.

Your Task

1. Create one random individual. The individual should be a list of length 100. Each bit should be assigned randomly to a 0 or a 1. (Hint: Check out the random package for python.)
2. Write a counting ones fitness function. Your function should accept an individual as input and return the number of ones as output.