# Honors Lab 3

3.24.2010

**The Problem**

A genetic algorithm consists of population of individuals. To introduce variation into the population, we use mutation and crossover.

**Your Task**

1. Create a function that *mutates* an individual. The function should accept as input an individual and a mutation rate (i.e., the probability that a bit will flip) and should produce a modified individual as output. For example:

   1100011 mutates to 1101011

2. Create a function that performs *crossover* on two individuals. The function should accept two individuals as input. It should then select two random points in their bit-strings and cross them over to produce two new individuals.

   1111111 and 0000000 produce 1100011 and 0011100