**Report about genetic algorithm for function Maximization**

The goal of this algorithm is try to find a max value for the function F(x) =x with a chromosome of 5 bit.

We’ll use the genetic approach to find a solution to this problem such as our initial population will be a random 100 individual and we’ll preform the main operation of this type of algorithms.

In Matlab the data of each individual will be an arrays of bits 0 or 1 with a length of 5.the whole generation is a matrix.

The basic operation are:

**Initialization**: start with a 100 random individual form the search space [0, 35]

**function** **[** population **]** **=** initialization**(**M**,** N**)**

**for** i **=** 1 **:** M

**for** j **=** 1 **:** N

population**.**Chromosomes**(**i**).**Gene**(**j**)** **=** **[** round**(** rand**()** **)** **];**

**end**

**end**

**Selection**: give each individual a fitness to evaluate its score. And rank them.

**Crossover**: select each two parent to produce two children.

**Mutation**: each individual have a random chance to have one or more bit change.

**Evaluation**: at the end of each generation we evaluate it and decide if we continue or we found a solution.