Genetic Algorithm

**SETUP**

Step 1: ***initialise:***  Create a population of N elements, each with randomly generated DNA.

***DRAW***

Step 2:  ***Selection:***  Evaluate the fitness of each element of the population and build a mating pool.

Step 3:  ***Reproduction***: Repeat N times:

1. Pick two parents with probability according to relative fitness.
2. Crossover – create a “child” by combining the DNA of these two parents.
3. Mutation – mutate the child’s DNA based on a given probability.
4. Add the new child to a new population.

Step 4: Replace the old population with the new population and return to Step 2.