Steps for a genetic algorithm

Travelling Salesman Problem

1. Generate multiple random Routes

[1] 

[2] 

⋮

2. Search the best route with shortest range and order them
3. The other routes die
4. Generate new routes with mutation and combination

- Mutation:

route A = {1, 4, 5, 7}

mutated route A = {1, 7, 5, 4}

It could be possible that this route is better than the first

- Combination:
  route A = {1, 4, 5, 7}
  route B = {2, 3, 8, 9}
  } fusion both

  Combinated route C = {1, 4, 8, 9}

  Two parent routes fusion together and form a child route which could be fitter than its parents.

5. repeat step 4 several times to get even better results

6. after n generations you pick the fittest route

Parameter of a genetic Algorithm:

- Amount of generations (Step 5)
- Population per generation
- percentage of the mutated population
- percentage of the combined population
- selection of the fittest for the next generation