

Dear students,

Below are the most frequently asked questions of this week's lab (week 6):

Question 1: My fitness score keep oscillating, am I doing something wrong?

Answer:

You are not doing anything wrong, it is expected that it will oscillate in every iteration of your GA because each iteration you are dealing with different individuals. One way to solve this is to keep track of the best individual that you have seen so far and report its fitness. Also, do make sure that you want to keep the best individual seen so far in your population (for tournament selection etc.) as it is the individual with the best "genes" seen so far and you want its "genes" to survive in the next iterations.

Question 2: My fitness score is not changing at all, what am I doing wrong?

Answer:

If your fitness score is not changing (not even for a little bit), you might have not updated `OperatorTracker.operators` to an individual's operators before running the test. If you do not update the reference, it will always use the operators that we parse out of the Problem file. So make sure you change to `OperatorTracker.operators` to the operators of the individual that you are evaluating before calling `runAllTests`.

Question 3: My GA is performing well on all but one problem, is there something missing?

Answer:

Nothing is wrong in your implementation, it is probably a problem that is really hard to patch and therefore the actual performance differs from your expectations. One thing that you can do is to try to fine tune your GA for this particular problem and see whether it helps with improving the performance. Another thing to do is to check the patches that you generated and compare it to the original problem file (you can instrument the original problem file). This way, you can maybe find the reason why your GA cannot find a better solution for this given problem.

Question 4: What's the difference between "operator" and "operator_nr"?

Answer:

`operator` is the actual operator that is being used in the problem and the `operator_nr` is the ID of the operators in the operator list that is parsed from the problem. Each operator in the problem file will get a unique identifier, this corresponds to the index in the `OperatorTracker.operators` array.