Curtis Lemke

Dr. Jesse Lowe

CS 461

27 October 2024

**Program 2 – Genetic Algorithm**

* + 1. What were the challenges in writing the program? Or did it seem to go smoothly from the beginning?

I had a lot of issues getting the fitness function to return properly. It would originally only ever return one value. Figuring out the mutation function was also a challenge. I ran into a lot of issue with it returning values that were either the same as before or were in an order and not truly random.

* + 1. What do you think of the schedule your program produced? Does it have anything that still looks odd or out of place?

I messed with the generations and found the schedule converges to around a fitness level of 8.8. Despite this, it would return a slightly different schedule each time. At 10,000 generations, which took about 4 minutes to run, it returned the same schedule a 1000 generation version did. The schedule I chose to include in my repo is probably the best one I could generate. It includes all the facilitators which was a problem I ran into.

* + 1. How would you improve the program, or change the fitness function?

I am not sure how I would improve it at this point. I am happy that it runs and appears to return a pretty reliable result. The fitness function could probably be improved if the “punishments” were more severe. I think adding a condition that every facilitator must be used would also prevent schedules being generated without using all of them.

* + 1. Anything else you feel like discussing, asking about, bragging about, etc.