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Algorithm A: genetic algorithm

Algorithm B: ant colony optimisation

Description of enhancement of Algorithm A:

I used hybridization using 2-opt to enhance the child generating process. 2-opt swaps non adjacent edges and measures the weights of the new tours to see if the edges swapped have helped the tours fitness or length. It then saves this as the new tour this finds an optimal child that is then returned to the new population (newP) parameter. This could cause the algorithm to specialize unoptimally on a child that gave high fitness early due to the genetic and 2-opt combinations. So, I decided to use island based grouping with different initial populations so that they would specialise differently, this would setup a number of groups that would go through a number of generations separately allowing them to specialize and then swap a certain amount of each islands population with another islands. This would hopefully reduce the specialization of one population towards an initial path and diversify it.

Description of enhancement of Algorithm B:

DESCRIPTION OF ALGORITHM ONLY IF THE ALGORITHM IS NOT COVERED IN LECTURES

Description of *non-standard* Algorithm A:

*Describe any non-standard algorithms you have implemented that **have not been covered in lectures** (otherwise these boxes should be blank) You need to convince me that your implementation is indeed that of the named algorithm and you need to **provide a full reference to the source for your algorithm**. You should **include a pseudocode description**. You can vary the sizes of these boxes but not the font (Calibri), font size (11) or paragraph properties (single space), and everything should fit onto one side of A4. (You can delete these instructions.)*

Description of *non-standard* Algorithm B:

Type here.