

Evaluation

Below is the list of objectives, and for each a verdict (whether it was hit) and a location where proof can be found.

Objective	Description	Was hit?	Where?
1	explore maths behind aco, sa, and an exact algorithm	yes	documented design -> algorithms
2.1	aco constructs a valid route that is a tsp solution	yes	testing -> ACO -> results
2.2	aco has input parameters	yes	technical solution -> common.py
2.3	aco returns data about every iteration	yes	technical solution -> aco.py
2.4	aco is quick, efficient, and accurate	yes	testing -> ACO -> results
3.1	sa constructs a valid route that is a tsp solution	yes	testing -> SA -> results
3.2	sa has input parameters	yes	technical solution -> common.py
3.3	sa returns data about every iteration	yes	technical solution -> sa.py
3.4	sa is quick, efficient, and accurate	yes	testing -> SA -> results
4.1	exact algorithm constructs the best possible route	yes	testing -> HK -> results
4.2	exact algorithm return the route and its cost	yes	technical solution -> held_karp.py
4.3	exact algorithm is efficient and fast	yes	testing -> HK -> results
5	create a visualisation	yes	testing -> UI
6	link back-end and front-end	yes	technical solution -> app.py

As a result, all of the objectives were hit. I ended up doing a bit more functionality on the website than I aimed for in the first place which made it even easier to use. I've loved doing this project because I got to explore and learn a lot of maths that is behind the algorithms and TSP, and compare how the algorithms perform on TSP. I can say that I fulfilled my curiosity for the topic and am very happy with the result.

Other people who used the visualisation are saying that it's simple, easy to understand and to use, and looks cool, so I think it's a success.

TSP turned out to be a perfect problem to visually learn how meta-heuristics work and to compare their performance. So in the future, I'm planning to continue adding new algorithms such as Genetic Algorithm, Particle Swarm and others to the website. Hopefully not only to fulfill my personal curiosity, but also to share this tool with others.