

Genetic Algorithm :

Project ▾

Bot-AL_Side [route-optimizer] D:\WSPA\erasi

src

main

java

com.university.routing

algorithms

- AStarAlgorithm
- localSearch
- TSPGeneticSolver**
- UseAlgorithms

Map

- apiKey
- DistanceMatrixService
- DistanceMatrixResponse
- GeocodingService
- RoutImage.java

models

- Graph
- Node
- Main

org.example

resources

UseAlgorithms.java

AStarAlgorithm.java

localSearch.java

TSPGeneticSolver.java

```
7
8 public class TSPGeneticSolver {
9     // Параметры ГА
10    private static final int POPULATION_SIZE = 100;
11    private static final int GENERATIONS = 1000;
12    private static final double MUTATION_RATE = 0.02;
13    private static final int SELECTION_SIZE = POPULATION_SIZE / 2; // Размер отобранной популяции
14
15    public static List<String> solveTSP(Graph graph, List<String> points) {
16        List<List<String>> population = initializePopulation(points);
17        Random random = new Random();
18
19        for (int generation = 0; generation < GENERATIONS; generation++) {
20            // Оценка приспособленности
21            Map<List<String>, Integer> fitnessMap = evaluateFitness(graph, population);
22
23            // Селекция
24            List<List<String>> populationRoutes = new ArrayList<>(population);
25            List<List<String>> selectedPopulation = selectPopulation(populationRoutes, SELECTION_SIZE);
```