Report: K-Center Problem

Introduction: As a subtask I was given to check memory and time performance of two variants of my implementation of approximation algorithm. The first variant is without distance optimization and the second one is with it.

Without DistanceOptimization - Moize memoizer

```
Number of centers 5 among 16 cities
The script uses approximately 84.57 MB
The script was running for  approximately 1s

Number of centers 5 among 1000 cities
The script uses approximately 88.82 MB
The script was running for  approximately 1s

Number of centers 100 among 1000 cities
The script uses approximately 99.89 MB
The script was running for  approximately 2s

Number of centers 500 among 1000 cities
The script uses approximately 153.44 MB
The script was running for  approximately 7s

Number of centers 999 among 1000 cities
The script uses approximately 104.37 MB
The script was running for  approximately 15s
```

With DistanceOptimization

```
Number of centers 5 among 16 cities
The script uses approximately 90.77 MB
The script was running for  approximately 1s

Number of centers 5 among 1000 cities
The script uses approximately 92.43 MB
The script was running for  approximately 1s


Number of centers 100 among 1000 cities
The script uses approximately 94.61 MB
The script was running for  approximately 1s


Number of centers 500 among 1000 cities
The script uses approximately 102.1 MB
The script was running for  approximately 1s


Number of centers 999 among 1000 cities
The script uses approximately 103.46 MB
The script was running for  approximately 1s
```