**ID: 1105021**

**AI Assignment 2**

**TSP with Hill Climbing**

**Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MAP** | **SIGMA** | **ITER** | **AVG COST** | **MIN COST** | **GAP** |
| **att48** | 10000 | 10 | 41506.4931993209 | 35775.319329585946 | 290.53907790102465 |
| **att48** | 10000 | 20 | 41101.66649152213 | 33212.36762371516 | 286.73001967935767 |
| **att48** | 5000 | 10 | 43757.24450739879 | 33757.45633850624 | 311.7166400771433 |
| **att48** | 5000 | 20 | 39590.47776795493 | 31691.90716524296 | 272.5110817459064 |
| **att48** | 5000 | 30 | 40680.366693934295 | 33230.05366265678 | 282.7659643764988 |
| **att48** | 1000 | 10 | 39822.29204739944 | 33553.61411686406 | 274.69224734098077 |
| **att48** | 1000 | 20 | 43633.1338604189 | 31785.99859846151 | 310.54886959370435 |
| **att48** | 1000 | 30 | 40161.988069775645 | 33079.93688727857 | 277.8884839083143 |
| **att48** | 500 | 10 | 43497.57949976975 | 34742.83378119497 | 309.2734239722408 |
| **att48** | 500 | 20 | 45273.50659395096 | 33268.40875533848 | 325.98331383092733 |
| **att48** | 500 | 30 | 40659.451290940415 | 33174.36295384399 | 282.5691690905195 |
| **att48** | 100 | 10 | 46312.58310194867 | 34537.243338561726 | 335.76009693214786 |
| **att48** | 100 | 20 | 41475.846012490954 | 32965.967267049986 | 290.250715209738 |
| **att48** | 100 | 30 | 42911.57508484807 | 33462.0662086241 | 303.7596451340616 |
| **st70** | 5000 | 10 | 783.8873670979372 | 671.2536635328172 | 16.131461792286984 |
| **st70** | 5000 | 20 | 866.7498442918783 | 694.730238151504 | 28.407384339537522 |
| **st70** | 5000 | 30 | 834.5934331505899 | 687.3311287383037 | 23.643471577865174 |
| **st70** | 1000 | 10 | 889.8245223539558 | 704.2380075939949 | 31.825855163549004 |
| **st70** | 1000 | 20 | 797.2671567375739 | 674.8169079425558 | 18.113652850010954 |
| **st70** | 1000 | 30 | 813.7136586956892 | 698.2272281462235 | 20.550171658620624 |
| **st70** | 500 | 10 | 794.509003842629 | 696.5641856091861 | 17.705037606315408 |
| **st70** | 500 | 20 | 865.7105241734919 | 694.0971506790413 | 28.25341098866546 |
| **st70** | 500 | 30 | 852.2303654504591 | 692.1981613932 | 26.256350437105052 |
| **st70** | 100 | 10 | 833.8085338539586 | 679.0353326802184 | 23.527190200586457 |
| **st70** | 100 | 20 | 879.3873464399514 | 706.3310937691823 | 30.279606879992805 |
| **st70** | 100 | 30 | 880.7544256012663 | 691.7872942234576 | 30.482137126113535 |
| **burma14** | 10000 | 30 | 33.3694776899297 | 27.046820763576626 | 0.41973424595156694 |
| **burma14** | 10000 | 20 | 33.135333840578475 | 27.90831969824902 | 0.28488161125946876 |
| **burma14** | 10000 | 10 | 33.40830785145786 | 30.877436517428198 | 0.536586973992977 |
| **burma14** | 5000 | 30 | 33.48877910771098 | 28.336419728823355 | 0.7787514526361288 |
| **burma14** | 5000 | 20 | 32.20613343904312 | 28.58724222095932 | 3.0811512517510553 |
| **burma14** | 5000 | 10 | 32.33640181072774 | 28.85368472755692 | 2.689130873524688 |
| **burma14** | 1000 | 30 | 33.390434447403635 | 28.480555755161486 | 0.48280002227998225 |
| **burma14** | 1000 | 20 | 33.43290267415939 | 26.7791193428698 | 0.6106008852223794 |
| **burma14** | 1000 | 10 | 34.78432028054555 | 29.7558928306989 | 4.677460970645663 |
| **burma14** | 500 | 30 | 32.066535461085614 | 28.485993739290294 | 3.501247483943373 |
| **burma14** | 500 | 20 | 32.405472383336935 | 27.863526364698508 | 2.481274801874998 |
| **burma14** | 500 | 10 | 32.579586463782896 | 29.468716291768946 | 1.9573082642705428 |
| **ulysses22** | 10000 | 30 | 79.54364535780297 | 58.912297841745094 | 13.423136115504034 |
| **ulysses22** | 10000 | 20 | 77.31994195517811 | 58.40156183503297 | 10.252305654039803 |
| **ulysses22** | 10000 | 10 | 81.0885485738748 | 55.16805981666316 | 15.62604958487781 |
| **ulysses22** | 5000 | 30 | 75.30524850975645 | 62.77520366863287 | 7.3795073574168795 |
| **ulysses22** | 5000 | 20 | 76.18339225287293 | 57.71901731630534 | 8.631672968591102 |
| **ulysses22** | 5000 | 10 | 75.27000475638415 | 59.9240002173953 | 7.329252468820988 |
| **ulysses22** | 1000 | 30 | 76.85562402113483 | 54.13735135077942 | 9.59022390009245 |
| **ulysses22** | 1000 | 20 | 79.69357152293932 | 63.06022094714732 | 13.636919325451771 |
| **ulysses22** | 1000 | 10 | 74.48301035419713 | 65.3893549577568 | 6.207058825320318 |
| **ulysses22** | 500 | 30 | 78.27001861160971 | 62.65871402337712 | 11.607042081291487 |
| **ulysses22** | 500 | 20 | 80.5396025936632 | 58.40173213928617 | 14.8432947293073 |
| **ulysses22** | 500 | 10 | 78.99141378444267 | 64.3068363229757 | 12.635696256156676 |