CS3310 Project 2 Report

Daniel Pasion

Renard Pascual

Runtimes for ‘n’ amount of nodes for Djikstra/dense (in nano seconds)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | N=10 | N=50 | N=100 | N=200 | N=400 | N=800 | N=1600 | N=3200 |
| Trial 1 | 15000 | 215500 | 889000 | 2378000 | 5844700 | 2089800 | 5680200 | 41662900 |
| Trial 2 |  |  |  |  |  |  |  |  |
| Trial 3 |  |  |  |  |  |  |  |  |
| Trial 4 |  |  |  |  |  |  |  |  |
| Trial 5 |  |  |  |  |  |  |  |  |
| Average |  |  |  |  |  |  |  |  |

Runtimes for ‘n’ amount of nodes for Floyd-Warshall/dense (in nano seconds)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | N=10 | N=50 | N=100 | N=200 | N=400 | N=800 | N=1600 | N=3200 |
| Trial 1 | 15000 | 215500 | 889000 | 2378000 | 5844700 | 2089800 | 8948700 | 41662900 |
| Trial 2 | 13800 | 562500 | 706200 | 2922000 | 5047800 | 3076500 | 8002600 | 26696200 |
| Trial 3 | 14200 | 200001 | 658399 | 3137499 | 5593799 | 2529300 | 6047900 | 37420100 |
| Trial 4 | 16900 | 152999 | 926801 | 3300800 | 10587000 | 4199500 | 5732600 | 31039599 |
| Trial 5 | 17800 | 176300 | 633199 | 2800200 | 9841800 | 3206300 | 4274100 | 23757500 |
| Average | 12840 | 233920 | 762719.8 | 2907700 | 7383020 | 3020280 | 6601180 | 32115259.8 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | N=10 | N=50 | N=100 | N=200 | N=400 | N=800 | N=1600 | N=3200 |
| Trial 1 | 108500 | 5334900 | 8366900 | 22084000 | 83844400 | 1173798200 | 9142193500 | 40674661500 |
| Trial 2 | 69900 | 5163900 | 12965900 | 20461300 | 63822100 | 595460000 | 3403544700 | 28419602700 |
| Trial 3 | 64901 | 5046300 | 7120500 | 19996900 | 70383500 | 477232299 | 3573783199 | 37195629100 |
| Trial 4 | 98501 | 5360699 | 5939600 | 21837000 | 70396300 | 959325200 | 3799205199 | 37300159499 |
| Trial 5 | 97299 | 5184500 | 10321700 | 20972099 | 72836900 | 863824299 | 3427103900 | 38351370600 |
| Average | 87820.2 | 5218060 | 8942920 | 21070260 | 72256640 | 813928000 | 4669166100 | 36388284680 |

Runtimes for ‘n’ amount of nodes for Djikstra/sparse (in nano seconds)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | N=10 | N=50 | N=100 | N=200 | N=400 | N=800 | N=1600 | N=3200 |
| Trial 1 | 102900 | 130200 | 255600 | 511300 | 367600 | 1146000 | 5004300 | 20301700 |
| Trial 2 | 371000 | 164800 | 236200 | 1195800 | 2870300 | 1396800 | 10225300 | 21230200 |
| Trial 3 | 322100 | 155300 | 189400 | 790600 | 4925100 | 1284200 | 10982700 | 16775300 |
| Trial 4 | 123500 | 99400 | 192500 | 933700 | 4474500 | 1380700 | 6401500 | 16775300 |
| Trial 5 | 119000 | 181300 | 558900 | 1541000 | 6041900 | 2218500 | 8527900 | 26578900 |
| Average | 207700 | 146200 | 286520 | 994480 | 3735880 | 1485240 | 8228340 | 20332280 |

Runtimes for ‘n’ amount of nodes for Floyd-Warshall/sparse (in nano seconds)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | N=10 | N=50 | N=100 | N=200 | N=400 | N=800 | N=1600 | N=3200 |
| Trial 1 | 86500 | 270800 | 1560300 | 13679600 | 75973000 | 310134200 | 6395685100 | 41941749700 |
| Trial 2 | 156400 | 382200 | 3603900 | 17721400 | 125499500 | 348213600 | 3388641200 | 27282954100 |
| Trial 3 | 92900 | 331100 | 2323300 | 22687400 | 126698800 | 1173467000 | 6070529400 | 41954035800 |
| Trial 4 | 124700 | 303000 | 2538700 | 19091000 | 119134100 | 511178600 | 3732129800 | 27564347100 |
| Trial 5 | 169000 | 708100 | 3669100 | 24268500 | 148630200 | 470538400 | 4687658900 | 36488900000 |
| Average | 125900 | 399040 | 2739060 | 19489580 | 119187120 | 562706360 | 4854928880 | 35046397340 |

Graphs of all runtimes (To 3200 vertices)

Graphs of all runtimes (To 400 Vertices)