## Relazione laboratorio Algoritmi Avanzati

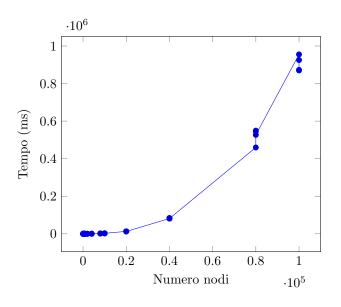
Magarotto Francesco Muraro Enrico Piva Giulio

27 aprile 2020

## 1 Kruskal

#     Numero nodi     Tempo (ms)     MST       1     10     0     29316       2     10     0     2126       3     10     0     -4476       4     10     0     2036       5     20     0     -3202       6     20     0     1859       7     20     0     -4256       8     20     0     -3720       9     40     0     -3720       9     40     0     -3720       9     40     0     -3720       10     40     0     -3720       11     40     0     -7957       12     40     0     -7957       13     80     0     -1399       14     80     0     -2113       15     80     0     -1105       16     80     0     -233       17     100     0     -2889       20	
3   10   0   -4476     4   10   0   2036     5   20   0   -3202     6   20   0   1859     7   20   0   -4256     8   20   0   -3720     9   40   0   -1220     10   40   0   -3702     11   40   0   -7957     12   40   0   -7957     13   80   0   -1399     14   80   0   -2113     15   80   0   -2113     15   80   0   -1105     16   80   0   -2333     17   100   0   -2419     18   100   0   -2889     20   100   0   -2323     21   200   0   -5151     23   200   0   -4443	
4   10   0   2036     5   20   0   -3202     6   20   0   1859     7   20   0   -4256     8   20   0   -3720     9   40   0   -1220     10   40   0   -3702     11   40   0   -7957     12   40   0   -7974     13   80   0   -1399     14   80   0   -2113     15   80   0   -1105     16   80   0   -2333     17   100   0   -2419     18   100   0   -2889     20   100   0   -232     21   200   0   -515     23   200   0   -4443	
5   20   0   -3202     6   20   0   1859     7   20   0   -4256     8   20   0   -3720     9   40   0   -1220     10   40   0   -3702     11   40   0   -7957     12   40   0   -7974     13   80   0   -1399     14   80   0   -2113     15   80   0   -1105     16   80   0   -2113     17   100   0   -2333     17   100   0   -2712     19   100   0   -2889     20   100   0   -2323     21   200   16   -5101     22   200   0   -5153     23   200   0   -4443	5
6     20     0     1859       7     20     0     -4256       8     20     0     -3720       9     40     0     -1220       10     40     0     -3702       11     40     0     -7957       12     40     0     -7974       13     80     0     -1399       14     80     0     -2113       15     80     0     -1105       16     80     0     -2113       17     100     0     -2333       17     100     0     -2712       19     100     0     -2889       20     100     0     -2323       21     200     16     -5101       22     200     0     -5153       23     200     0     -4443	0
7   20   0   -4256     8   20   0   -3720     9   40   0   -1220     10   40   0   -3703     11   40   0   -7957     12   40   0   -7974     13   80   0   -1399     14   80   0   -2113     15   80   0   -1105     16   80   0   -233     17   100   0   -2419     18   100   0   -2712     19   100   0   -2889     20   100   0   -2323     21   200   16   -5101     22   200   0   -5153     23   200   0   -4443	1
8   20   0   -3720     9   40   0   -1220     10   40   0   -3700     11   40   0   -7957     12   40   0   -7974     13   80   0   -1399     14   80   0   -2113     15   80   0   -2113     16   80   0   -233     17   100   0   -1419     18   100   0   -271'     19   100   0   -2889     20   100   0   -232'     21   200   16   -5101     22   200   0   -515'     23   200   0   -4443'	6
9   40   0   -1220     10   40   0   -370     11   40   0   -7957     12   40   0   -7974     13   80   0   -1399     14   80   0   -211     15   80   0   -1105     16   80   0   -233     17   100   0   -1419     18   100   0   -271'     19   100   0   -2889     20   100   0   -232:     21   200   16   -5101     22   200   0   -515:     23   200   0   -4443	0
10 40 0 -3703   11 40 0 -7957   12 40 0 -7974   13 80 0 -1399   14 80 0 -2113   15 80 0 -1105   16 80 0 -2333   17 100 0 -1419   18 100 0 -2712   19 100 0 -2889   20 100 0 -2323   21 200 16 -5101   22 200 0 -5153   23 200 0 -4443	05
11 40 0 -7957   12 40 0 -7974   13 80 0 -1399   14 80 0 -2113   15 80 0 -1105   16 80 0 -2333   17 100 0 -2419   18 100 0 -271   19 100 0 -2889   20 100 0 -232   21 200 16 -5101   22 200 0 -5152   23 200 0 -4443	78
12   40   0   -7974     13   80   0   -1399     14   80   0   -2113     15   80   0   -1105     16   80   0   -2333     17   100   0   -1419     18   100   0   -271'     19   100   0   -2889     20   100   0   -232'     21   200   16   -5101     22   200   0   -515'     23   200   0   -4443'	21
13 80 0 -1399   14 80 0 -2113   15 80 0 -1105   16 80 0 -233   17 100 0 -1419   18 100 0 -271'   19 100 0 -2889   20 100 0 -232'   21 200 16 -5101   22 200 0 -515'   23 200 0 -4443'	0
14 80 0 -2113   15 80 0 -1105   16 80 0 -233   17 100 0 -1419   18 100 0 -271'   19 100 0 -2889   20 100 0 -232'   21 200 16 -5101   22 200 0 -515'   23 200 0 -4443'	41
15 80 0 -1105   16 80 0 -2333   17 100 0 -1419   18 100 0 -271'   19 100 0 -2889   20 100 0 -232'   21 200 16 -5101   22 200 0 -515'   23 200 0 -4443'	26
16 80 0 -233:   17 100 0 -1419   18 100 0 -271'   19 100 0 -2889   20 100 0 -232:   21 200 16 -5101   22 200 0 -515:   23 200 0 -4443	345
17 100 0 -1419   18 100 0 -271'   19 100 0 -2889   20 100 0 -232'   21 200 16 -5101   22 200 0 -515'   23 200 0 -4443'	
18     100     0     -271°       19     100     0     -2889       20     100     0     -232°       21     200     16     -5101       22     200     0     -515°       23     200     0     -4443	320
19 100 0 -2889   20 100 0 -232   21 200 16 -5101   22 200 0 -515   23 200 0 -4443	60
20     100     0     -232:       21     200     16     -5101       22     200     0     -515:       23     200     0     -4443	743
21 200 16 -5101   22 200 0 -5153   23 200 0 -4443	06
22     200     0     -5153       23     200     0     -4443	
23   200   0   -4443	
24   200   0   -3933	57
25   400   0   -1122	919
26   400   31   -7883	
27   400   0   -8957	04
28   400   0   -7330	645
29   800   31   -1541	-
30   800   32   -1578	
31   800   31   -1675	
32   800   15   -1652	
33   1000   32   -2091	
34   1000   32   -1934	
35   1000   31   -2229	
36   1000   31   -2359	
37   2000   109   -4811	
38   2000   93   -4739	
39   2000   109   -4717	
40   2000   125   -453'	
41   4000   423   -8722	
42   4000   437   -9314	
43   4000   412   -9845	767
44   4000   439   -8683	

			L =
#	Numero nodi	Tempo (ms)	MST
45	8000	1722	-17844628
46	8000	1713	-18800966
47	8000	1731	-18741474
48	8000	1753	-18190442
49	10000	2637	-22086729
50	10000	2601	-22338561
51	10000	2563	-22581384
<b>52</b>	10000	2638	-22606313
53	20000	12976	-45978687
<b>54</b>	20000	13002	-45195405
55	20000	13009	-47854708
56	20000	12427	-46420311
57	40000	81522	-92003321
58	40000	81525	-94397064
59	40000	84400	-88783643
60	40000	81242	-93017025
61	80000	459713	-186834082
62	80000	549392	-185997521
63	80000	545050	-182065015
64	80000	526711	-180803872
65	100000	955113	-230698391
66	100000	925063	-230168572
67	100000	872704	-231393935
68	100000	869876	-231011693



## 2 Kruskal con Union-Find

#	Numero nodi	Tempo (ms)	MST
1	10	0	29316
2	10	0	2126
3	10	0	-44765
4	10	0	20360
5	20	0	-32021
6	20	0	18596
7	20	0	-42560
8	20	0	-37205
9	40	0	-122078
10	40	0	-37021
11	40	0	-79570
12	40	0	-79741
13	80	0	-139926
14	80	0	-211345
15	80	0	-110571
16	80	0	-233320
17	100	0	-141960
18	100	0	-271743
19	100	0	-288906
20	100	0	-232178
21	200	16	-510185
22	200	0	-515136
23	200	0	-444357
24	200	0	-393278
25	400	0	-1122919
26	400	31	-788168
27	400	0	-895704
28	400	0	-733645
29	800	31	-1541291
30	800	32	-1578294
31	800	31	-1675534
32	800	15	-1652119
33	1000	32	-2091110
34	1000	32	-1934208
35	1000	31	-2229428
36	1000	31	-2359192
37	2000	109	-4811598
38	2000	93	-4739387
39	2000	109	-4717250
40	2000	125	-4537267
41	4000	423	-8722212
42	4000	437	-9314968
43	4000	412	-9845767
44	4000	439	-8681447

#	Numero nodi	Tempo (ms)	MST
45	8000	6.75	
46	10000	7	
47	20000	11.5	
48	40000	29.5	
49	80000	57.25	
50	100000	99.75	

