\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 250 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

117917086 function calls (92418410 primitive calls) in 47.934 seconds

35

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

9060 function calls in 0.005 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 52 , 280 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

169504009 function calls (132431544 primitive calls) in 63.388 seconds

37

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

10082 function calls in 0.006 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 54 , 310 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

165324938 function calls (129246265 primitive calls) in 62.215 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

11021 function calls in 0.007 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 56 , 340 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

317582319 function calls (247657640 primitive calls) in 121.422 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12211 function calls in 0.006 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 58 , 370 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

546813300 function calls (427069283 primitive calls) in 235.015 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12932 function calls in 0.004 seconds

44

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 60 , 400 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

531045064 function calls (414085408 primitive calls) in 231.213 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13980 function calls in 0.008 seconds

46

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 250 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

177625327 function calls (139205640 primitive calls) in 76.580 seconds

35

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

9000 function calls in 0.006 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 51 , 270 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

141519941 function calls (110820359 primitive calls) in 61.134 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

9560 function calls in 0.005 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 52 , 290 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

186338125 function calls (145718485 primitive calls) in 79.972 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

10362 function calls in 0.006 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 53 , 310 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

134096305 function calls (104648553 primitive calls) in 56.884 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

11163 function calls in 0.005 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 54 , 330 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

250889850 function calls (195896871 primitive calls) in 109.883 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

11531 function calls in 0.007 seconds

42

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 55 , 350 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

215361075 function calls (168168727 primitive calls) in 94.195 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12213 function calls in 0.005 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 56 , 370 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

340899203 function calls (265836197 primitive calls) in 152.295 seconds

42

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12408 function calls in 0.005 seconds

42

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 57 , 390 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

216582503 function calls (168786465 primitive calls) in 94.195 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13476 function calls in 0.008 seconds

46

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 58 , 410 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

451334641 function calls (351258853 primitive calls) in 172.144 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13799 function calls in 0.008 seconds

46

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 59 , 430 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

334141248 function calls (260202740 primitive calls) in 137.325 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

14557 function calls in 0.008 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 60 , 450 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

396772622 function calls (308726717 primitive calls) in 159.555 seconds

46

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

15100 function calls in 0.008 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 61 , 470 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

550545939 function calls (427828342 primitive calls) in 220.855 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

16165 function calls in 0.009 seconds

52

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 62 , 490 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

516013795 function calls (401454994 primitive calls) in 216.779 seconds

47

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

16023 function calls in 0.009 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 63 , 510 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

676136757 function calls (525492477 primitive calls) in 284.121 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

16409 function calls in 0.009 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 64 , 530 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

447101009 function calls (347677230 primitive calls) in 204.183 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

17386 function calls in 0.009 seconds

51

N fisso M variabile:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 300 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

75908419 function calls (59292077 primitive calls) in 32.693 seconds

37

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

10445 function calls in 0.006 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 320 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

84250096 function calls (65717362 primitive calls) in 37.122 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

10711 function calls in 0.004 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 340 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

53685567 function calls (41834102 primitive calls) in 22.382 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

11154 function calls in 0.007 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 360 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

48446018 function calls (37698348 primitive calls) in 20.318 seconds

38

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

11479 function calls in 0.007 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 380 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

44266614 function calls (34413691 primitive calls) in 17.954 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12170 function calls in 0.007 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 400 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

44269493 function calls (34412069 primitive calls) in 17.868 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12456 function calls in 0.007 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 420 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

38082452 function calls (29560742 primitive calls) in 13.440 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

12683 function calls in 0.007 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 440 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

26841428 function calls (20834600 primitive calls) in 9.321 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13325 function calls in 0.007 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 460 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

23784231 function calls (18441084 primitive calls) in 8.935 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13533 function calls in 0.007 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 480 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

24364481 function calls (18864912 primitive calls) in 9.516 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

14009 function calls in 0.008 seconds

42

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 50 , 500 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

16963593 function calls (13137801 primitive calls) in 7.408 seconds

41

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

14476 function calls in 0.006 seconds

42

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 70 , 20 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

36066 function calls (31338 primitive calls) in 0.011 seconds

11

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

3421 function calls in 0.002 seconds

11

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 70 , 30 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

80611 function calls (67963 primitive calls) in 0.031 seconds

18

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

4527 function calls in 0.002 seconds

18

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 70 , 40 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

149305 function calls (124144 primitive calls) in 0.054 seconds

19

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

4850 function calls in 0.002 seconds

20

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_G ( 70 , 50 )

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

Random graph generated

3869531 function calls (3167982 primitive calls) in 1.441 seconds

27

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

5825 function calls in 0.003 seconds 27

M fisso N variabile e viceversa

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 50 , 200 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

329333151 function calls (259488671 primitive calls) in 95.591 seconds

35

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

8159 function calls in 0.003 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 50 , 450 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

23812529 function calls (18453742 primitive calls) in 6.806 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

13218 function calls in 0.005 seconds

40

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 50 , 700 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

6120272 function calls (4718839 primitive calls) in 1.960 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

18227 function calls in 0.007 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 50 , 950 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

2469441 function calls (1899421 primitive calls) in 0.776 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

23321 function calls in 0.009 seconds

45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 50 , 1200 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

938518 function calls (722132 primitive calls) in 0.312 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

29026 function calls in 0.011 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 55 , 220 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

693280864 function calls (546265638 primitive calls) in 201.307 seconds

36

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

9198 function calls in 0.004 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 55 , 495 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

69967552 function calls (54294474 primitive calls) in 20.808 seconds

44

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

15285 function calls in 0.006 seconds

46

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 55 , 770 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

13407440 function calls (10335325 primitive calls) in 4.070 seconds

47

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

20809 function calls in 0.008 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 55 , 1045 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

4724881 function calls (3632067 primitive calls) in 1.578 seconds

49

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

26382 function calls in 0.010 seconds

50

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 55 , 1320 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

2031617 function calls (1560465 primitive calls) in 0.647 seconds

52

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

32111 function calls in 0.011 seconds

52

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 240 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

1932832301 function calls (1523788120 primitive calls) in 575.685 seconds

39

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

10509 function calls in 0.004 seconds

43

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 540 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

204757866 function calls (158837824 primitive calls) in 62.546 seconds

48

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

17196 function calls in 0.006 seconds

50

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 840 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

38410751 function calls (29612638 primitive calls) in 11.755 seconds

52

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

22998 function calls in 0.009 seconds

53

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 1140 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

11256985 function calls (8651950 primitive calls) in 3.609 seconds

54

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

29613 function calls in 0.011 seconds

56

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 1440 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

3933272 function calls (3018679 primitive calls) in 1.375 seconds

56

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

35735 function calls in 0.013 seconds

57

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 60 , 1740 )

Random graph generated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_min\_vertex\_cover

1578989 function calls (1212502 primitive calls) in 0.520 seconds

58

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_greedy\_vertex\_cover

41737 function calls in 0.014 seconds

58

CONCLUSIONI:

Le prestazioni dei due metodi sono state valutate attraverso l’esecuzione di questi su grafi di diverse dimensioni. Le dimensioni dei grafi considerati va da i 50 a 70 nodi e il numero di archi è abbastanza vario, considerando sia grafi sparsi che non.

Come si può capire dai risultati dei test effettuati, l’algoritmo greedy risulta sempre più rapido dell’algoritmo di min vertex cover, ed inoltre si discosta di poco dal valore esatto del vertex cover (al più cinque vertici). Si vede come il tempo impiegato dall’algoritmo greedy con un numero di vertici N elevati, dipenda soltanto da N. Essendo il suo andamento polinomiale con N, i tempi peggiorano di poco all’aumentare di N.

Diversa è l’analisi dell’algoritmo di min vertex cover che peggiora di molto all’aumentare della dimensione del grafo (tenendo fisso il rapporto N/M). Tale algoritmo migliora con l’aumentare degli archi in un grafo, in particolare con N molto grande e M dello stesso ordine di grandezza di N , i tempi di esecuzione risultano insostenibili.