clear

clc

NA=[1 413 359 1.7

2 403 343 2.1

3 383.5 351 2.2

4 381 377.5 1.7

5 339 376 2.1

6 335 383 2.5

7 317 362 2.4

8 334.5 353.5 2.4

9 333 342 2.1

10 282 325 1.6

11 247 301 2.6

12 219 316 2.4

13 225 270 2.2

14 280 292 2.5

15 290 335 2.1

16 337 328 2.6

17 415 335 2.5

18 432 371 1.9

19 418 374 1.8

20 444 394 1.9

21 251 277 1.4

22 234 271 1.4

23 225 265 2.4

24 212 290 1.1

25 227 300 1.6

26 256 301 1.2

27 250.5 306 0.8

28 243 328 1.3

29 246 337 1.4

30 314 367 2.1

31 315 351 1.6

32 326 355 1.5

33 327 350 1.4

34 328 342.5 1.7

35 336 339 1.4

36 336 334 1.1

37 331 335 0.1

38 371 330 1.2

39 371 333 1.4

40 388.5 330.5 1.7

41 411 327.5 1.4

42 419 344 1.4

43 411 343 1.7

44 394 346 1.1

45 342 342 1.4

46 342 348 1.2

47 325 372 1.6

48 315 374 1.4

49 342 372 1.2

50 345 382 1.1

51 348.5 380.5 0.8

52 351 377 0.6

53 348 369 1.4

54 370 363 0.9

55 371 353 1

56 354 374 0.5

57 363 382.5 0.8

58 357 387 1.1

59 351 382 0.9

60 369 388 0.7

61 335 395 0.6

62 381 381 1.2

63 391 375 1.4

64 392 366 0.8

65 395 361 0.7

66 398 362 0.8

67 401 359 0.8

68 405 360 0.9

69 410 355 1.1

70 408 350 0.9

71 415 351 1.1

72 418 347 0.8

73 422 354 0.9

74 418.5 356 1.1

75 405.5 364.5 0.8

76 405 368 1.1

77 409 370 0.8

78 417 364 0.8

79 420 370 0.8

80 424 372 0.8

81 438 368 1.4

82 438.5 373 1.1

83 434 376 0.9

84 438 385 1

85 440 392 1.2

86 447 392 1.4

87 448 381 1.1

88 444.5 383 0.9

89 441 385 1.4

90 440.5 381.5 0.9

91 445 380 0.9

92 444 360 0.8];%%A区路口节点.

for i=1:length(NA)

x=NA(i,2);

y=NA(i,3);

hold on

plot(x,y, ' .')

text(x+0.5,y,[num2str(i)], 'fontsize',10)

end

|  |
| --- |
| EA=[12 |
| 14 |
| 16 |
| 21 |
| 22 |
| 23 |
| 24 |
| 28 |
| 29 |
| 30 |
| 38 |
| 48 |
| 62]; |

%%出入A区的路口

for i=1:length(EA)

x=NA(EA(i),2);

y=NA(EA(i),3);

plot (x,y, '\*r')

hold on

end %%出入A区的路口

|  |
| --- |
| PA=[1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |
| 11 |
| 12 |
| 13 |
| 14 |
| 15 |
| 16 |
| 17 |
| 18 |
| 19 |
| 20]; |

%% A区交巡警平台标号

for i=1:length(PA)

x=NA(PA(i),2);

y=NA(PA(i),3);

plot (x,y, 'or')

hold on

end %%A区交巡警平台位置

|  |  |
| --- | --- |
| LA=[1 | 75 |
| 1 | 78 |
| 2 | 44 |
| 3 | 45 |
| 3 | 65 |
| 4 | 39 |
| 4 | 63 |
| 5 | 49 |
| 5 | 50 |
| 6 | 59 |
| 7 | 32 |
| 7 | 47 |
| 8 | 9 |
| 8 | 47 |
| 9 | 35 |
| 10 | 34 |
| 11 | 22 |
| 11 | 26 |
| 12 | 25 |
| 14 | 21 |
| 15 | 7 |
| 15 | 31 |
| 16 | 14 |
| 16 | 38 |
| 17 | 40 |
| 17 | 42 |
| 17 | 81 |
| 18 | 81 |
| 18 | 83 |
| 19 | 79 |
| 20 | 86 |
| 21 | 22 |
| 22 | 13 |
| 23 | 13 |
| 24 | 13 |
| 24 | 25 |
| 25 | 11 |
| 26 | 27 |
| 26 | 10 |
| 27 | 12 |
| 28 | 29 |
| 28 | 15 |
| 29 | 30 |
| 30 | 7 |
| 30 | 48 |
| 31 | 32 |
| 31 | 34 |
| 32 | 33 |
| 33 | 34 |
| 33 | 8 |
| 34 | 9 |
| 35 | 45 |
| 36 | 35 |
| 36 | 37 |
| 36 | 16 |
| 36 | 39 |
| 37 | 7 |
| 38 | 39 |
| 38 | 41 |
| 39 | 40 |
| 40 | 2 |
| 41 | 17 |
| 41 | 92 |
| 42 | 43 |
| 43 | 2 |
| 43 | 72 |
| 44 | 3 |
| 45 | 46 |
| 46 | 8 |
| 46 | 55 |
| 47 | 48 |
| 47 | 6 |
| 47 | 5 |
| 48 | 61 |
| 49 | 50 |
| 49 | 53 |
| 50 | 51 |
| 51 | 52 |
| 51 | 59 |
| 52 | 56 |
| 53 | 52 |
| 53 | 54 |
| 54 | 55 |
| 54 | 63 |
| 55 | 3 |
| 56 | 57 |
| 57 | 58 |
| 57 | 60 |
| 57 | 4 |
| 58 | 59 |
| 60 | 62 |
| 61 | 60 |
| 62 | 4 |
| 62 | 85 |
| 63 | 64 |
| 64 | 65 |
| 64 | 76 |
| 65 | 66 |
| 66 | 67 |
| 66 | 76 |
| 67 | 44 |
| 67 | 68 |
| 68 | 69 |
| 68 | 75 |
| 69 | 70 |
| 69 | 71 |
| 69 | 1 |
| 70 | 2 |
| 70 | 43 |
| 71 | 72 |
| 71 | 74 |
| 72 | 73 |
| 73 | 74 |
| 73 | 18 |
| 74 | 1 |
| 74 | 80 |
| 75 | 76 |
| 76 | 77 |
| 77 | 78 |
| 77 | 19 |
| 78 | 79 |
| 79 | 80 |
| 80 | 18 |
| 81 | 82 |
| 82 | 83 |
| 82 | 90 |
| 83 | 84 |
| 84 | 85 |
| 85 | 20 |
| 86 | 87 |
| 86 | 88 |
| 87 | 88 |
| 87 | 92 |
| 88 | 89 |
| 88 | 91 |
| 89 | 20 |
| 89 | 84 |
| 89 | 90 |
| 90 | 91 |
| 91 | 92]; |

%%A区交通路口的路线

for i=1: length(NA);

for j=1: length(NA);

a(i,j)=inf;

end

end

for i=1: length(NA)

a(i,i)=0;

end

for i=1:length(LA)

x1=NA(LA(i,1),2);

y1=NA(LA(i,1),3);

x2=NA(LA(i,2),2);

y2=NA(LA(i,2),3);

plot([x1 x2],[y1 y2], '-')

hold on

d=((x2-x1)^2+(y2-y1)^2)^0.5;

a(LA(i,1), LA(i,2))=d;

a(LA(i,2), LA(i,1))=d;

end %% 画出A区交通路口的路线

[D,R]=floyd(a); %%D为各结点间距离矩阵

S=D(:,PA); %%S为结点与平台间距离矩阵

[min\_S,index]=min(S,[],2);%%从S矩阵中找出每行的最小值以及对应的列数

no=[1: length(NA)] ;

No=no'; %%编号

data=[No,index,min\_S]; %输出数据

A=[index,NA(:,4)]; %%最短距离与案发率

A1 = A(:,1);

A2 = A(:,2);

B1 = unique(A1);

B2 = arrayfun(@(a)sum(A2(A1==a)),B1);

B = [B1 B2];