%% 使用K-Means算法聚类

clear ;

k = 3; % 聚类的类别

iteration =500 ; % 聚类最大循环次数

distance = 'sqEuclidean'; % 距离函数

%% 读取数据

data =[27 6 232.61

3 5 1507.11

4 16 817.62

3 11 232.81

14 7 1913.05

19 6 220.07

5 2 615.83

26 2 1059.66

21 9 304.82

2 21 1227.96

15 2 521.02

26 3 438.22

17 11 1744.55

30 16 1957.44

5 7 1713.79

4 21 1768.11

93 2 1016.34

16 3 950.36

4 1 754.93

27 1 294.23

5 1 195.3

17 3 1845.34

12 13 1434.29

21 3 275.85

18 5 449.76

30 21 1628.68

4 2 1795.41

7 12 1786.24

18 1 679.44

60 7 5318.81

4 22 873.68

16 1 654.69

3 2 230.37

14 11 1165.68

13 21 1276.31

10 16 334.21

5 5 759.19

1 1 1383.39

24 8 3280.77

19 4 154.65

9 1 501.38

1 24 1721.93

14 1 107.18

10 1 973.36

10 17 764.55

7 6 1251.4

23 11 923.28

15 1 1011.18

1 15 1847.61

3 21 1669.46

10 3 1758.05

30 8 1865.99

28 8 1791.44

4 15 874.6

24 5 557.17

16 2 1025.35

7 2 1261.47

66 4 2920.81

4 2 1266.02

21 11 626.37

6 4 1105.63

26 21 1465.58

8 21 630.74

26 2 1546.45

14 11 1577.91

17 6 170.16

20 5 1558.75

5 5 1272.06

26 3 111.02

15 7 1578.37

26 24 720.26

25 16 873.22

4 7 935.19

23 11 723.67

15 9 1833.01

6 3 681.26

78 11 1461.63

15 17 560.57

9 18 1761.19

8 7 1707.25

28 2 227.14

22 3 223.57

8 6 940.46

23 6 256.3

5 1 312.44

15 14 929.52

27 15 1296.66

22 11 591.62

2 2 755.72

18 17 1424.07

61 8 940.93

3 7 414.24

1 14 576.56

12 22 1037.14

26 5 1200.17

1 3 1727.36

13 16 503.71

19 7 703.36

12 17 1583.05

3 18 602.9

5 1 798.41

25 7 1202.09

85 4 1605.36

28 21 1222.34

25 19 593.17

8 6 94.75

14 1 89.7

21 15 1061.56

29 15 978.85

14 3 155.9

20 5 938.15

3 24 1477.97

10 6 1976.23

8 5 181.17

17 4 499.65

49 1 76.22

13 11 267.1

23 1 137.62

65 5 1383.47

20 22 1311.2

22 13 496.61

21 6 1921.8

14 11 304.1

26 1 468.09

27 9 432.67

30 1 368.35

11 4 759.69

26 3 1110.81

28 1 53

39 11 1314.21

11 6 1895.95

23 1 417.23

3 2 679.58

5 1 533.97

24 8 1134.64

25 6 825.39

10 6 165.39

29 9 1234.64

80 11 1829.32

23 1 89

4 2 1557.88

3 8 1328.01

15 7 304.65

17 23 1505.55

16 7 711.1

16 1 539.76

5 1 65.83

16 3 776.21

22 18 1820.61

19 4 1997

4 22 1846.69

23 7 1252.41

7 13 987.17

3 6 1130.03

18 1 148.32

28 1 135.57

6 2 1641.79

7 2 242.83

21 8 1803.02

12 12 1557.95

25 4 1494.81

26 13 1280.06

28 1 160

22 9 440.12

14 1 746.95

12 2 351.09

6 2 556.91

7 3 957.83

16 16 1212.37

11 2 946.65

16 13 1442.68

5 12 1612.7

0 21 1281.68

9 13 1928.8

24 7 335.35

3 8 1589.35

20 11 797.72

17 1 793.47

13 16 569.47

10 3 149.5

17 21 515.38

8 4 187.76

20 7 1441.83

27 1 121.61

25 11 934.58

16 15 591.06

15 4 951.31

12 11 914

3 22 1058

9 2 1111.51

17 9 458.52

27 18 927.59

73 1 1370.25

17 1 946.53

10 1 1474.41

16 3 1661.03

0 9 1465.18

17 3 1813.45

5 7 772.54

4 1 172.82

14 4 552.37

12 8 946.28

26 2 651.99

6 9 857.79

7 4 1016.55

5 6 1766.44

25 3 908.53

28 2 403.75

25 4 1270.75

13 3 1157.92

13 1 497.09

2 1 216.78

23 16 1454.58

2 17 1027.58

24 12 722.09

15 7 282.19

11 4 106.96

18 1 999.75

24 14 1139.33

24 5 836.72

3 2 1678.54

3 17 1337.34

1 4 1335.77

11 2 810.2

29 11 943.9

51 12 5135.77

6 9 984.12

6 5 1413.55

1 6 381.95

6 14 788.22

29 1 80.8

21 1 611.13

24 4 1766.35

0 2 1516.76

9 6 1925.2

17 1 344.23

49 1 204.1

5 2 1257.59

7 3 1095.09

2 1 123.76

3 2 696.82

26 2 1487.35

19 3 1278.43

28 14 627.97

12 1 95

14 4 1827.01

10 6 754.05

19 2 922.93

12 12 257.4

1 14 676.34

3 19 984.32

27 32 1914.06

13 4 1953.81

1 4 768.02

61 13 1379.86

42 1 1054.24

21 11 298.34

17 5 841.04

8 9 1757.87

22 11 1010.7

13 6 948.83

12 24 852.95

7 7 1532.72

11 6 1891.29

10 21 1900.33

16 13 598.84

8 21 1622.91

21 7 536.53

66 6 180.51

18 8 1751.33

26 1 1146.43

24 6 654.8

4 3 1599.58

14 16 1317.4

16 18 1665.03

11 17 440.21

16 3 1689.94

3 12 1163.78

11 6 664.23

10 4 1658.4

3 8 1293.56

59 14 912.94

25 2 1265.24

20 6 1169.96

25 3 735.19

5 6 1749.68

17 15 483.51

23 22 1436.67

16 2 1439.93

16 1 252.12

7 14 848.68

30 9 252.98

5 2 464.9

3 2 50.14

5 5 1381.21

23 1 1606.04

8 11 309.45

69 15 1441.57

12 8 434.36

61 6 1893.97

16 18 1391.11

12 24 1292.14

3 6 312.33

17 24 845.68

16 6 1993.47

22 2 1414.29

2 11 472.46

10 1 1255.44

7 12 1256.98

15 9 904.91

8 9 237.52

7 11 1143.16

20 7 805.15

15 4 1259.42

11 7 247.64

3 1 1391.51

12 18 866.59

71 23 1127.95

25 9 1535.08

20 13 911.15

20 5 1001.84

10 1 91.93

15 7 1172.57

9 18 1882.22

1 19 528.68

21 11 1943.65

28 7 570.73

5 6 909.57

12 8 1406.95

10 11 1060.91

4 1 90.67

17 15 1757.5

65 11 1082.01

1 6 1665.49

20 17 553.53

24 18 1568.74

24 4 993.88

9 17 511.39

12 23 7149.96

11 16 1994.53

6 13 399.26

20 7 211.93

16 2 1466.19

29 2 1185.26

22 16 1400.35

11 1 433

10 4 238.6

22 3 1393.92

7 3 720.16

26 16 1810.43

24 6 230.28

4 4 772.84

26 1 339.03

5 19 1118.51

1 6 328.31

21 17 1385.52

47 5 169.25

8 18 1177.91

26 12 879.69

11 3 446.58

16 1 1437.14

13 21 695.48

27 16 1715.16

19 1 1048.5

2 17 1545.94

22 1 656.28

15 11 620.08

16 12 1111.76

26 5 1440.3

30 11 173.89

29 9 365.41

29 19 1495.14

7 24 1456.31

13 13 1327.45

24 1 1445.07

20 2 67.47

15 14 759.95

8 11 268.31

44 11 887.47

8 22 1970.75

26 2 335.05

13 19 419.22

7 12 494.74

10 11 1535.51

9 1 571.11

12 1 1491.21

12 3 1385.53

1 11 1030.93

4 4 978.71

15 1 516.33

6 24 543.75

5 4 356.23

10 18 1789.67

24 16 1978.79

16 5 434.48

22 23 1458.64

15 1 854.1

18 13 1879.27

8 24 1901.09

39 2 1521.44

14 13 1956.9

12 14 690.06

1 18 1157.17

17 6 600.46

1 21 1108.49

25 23 512.01

25 11 1510.08

27 21 1255.12

3 5 1676.56

1 17 1974.68

28 4 418.22

1 19 1577.28

5 24 1416.82

23 9 1300.04

12 23 1206.86

11 16 1699.1

10 19 1031.1

8 9 414.99

58 8 1262.55

18 4 1254.34

7 1 1103.45

8 14 1802.11

0 2 387.24

19 22 1204.62

27 19 1058.39

22 1 696.37

12 7 1055.71

2 14 1649.81

27 19 1293.73

20 16 1517.39

28 3 1497.35

4 9 399.02

6 1 1598.45

0 18 1300.99

18 15 1008.74

13 8 1819.96

21 18 630.47

6 5 1478.86

16 21 1562.08

29 9 1171.59

8 21 1642.86

11 19 1373.12

8 5 180.07

2 18 996.17

7 1 45.23

29 11 1049.44

16 8 220.03

19 7 393.14

14 17 1963.58

9 6 147.12

6 7 1279.7

24 1 633.17

12 1 1562.66

14 21 1354.59

8 1 911.62

25 4 1725.82

4 4 573.16

14 13 1331.53

13 14 1688.13

13 4 180

4 22 636.38

10 8 830.24

20 22 641.43

4 1 790.84

17 22 686

29 18 839.53

7 22 1862.15

4 2 1645.01

26 13 678.39

1 15 1287.7

24 12 1138.13

25 21 1081.9

1 11 432.32

18 13 437.33

24 23 852.05

18 5 1686.86

39 15 1420.24

27 11 869.55

25 8 1919.58

12 22 1451.94

2 1 1824.64

7 11 1877.28

6 24 1717.3

17 16 6148.05

13 2 111.17

21 1 621.61

16 1 1663.79

7 7 1247.65

5 1 198.72

8 1 927.95

33 1 117.62

6 13 1674.32

1 21 734.98

5 11 1387.5

8 18 488.5

7 6 92.63

6 7 1808.21

19 21 910.94

14 6 1564.15

25 14 1894.13

10 12 751.38

4 11 1813.51

4 6 1367.15

15 5 1264.09

7 1 685.55

4 4 1296.34

14 7 1300.12

38 15 1728.68

11 1 487.28

4 12 1313.31

25 17 1694.35

5 2 1931.97

27 22 1372.36

26 18 1731.94

19 1 1496.83

22 15 1798.79

11 6 803.94

24 11 1505.96

17 1 120.52

18 7 936.77

23 7 1824.41

17 5 177.08

1 19 867.99

21 17 756.88

13 4 6433.81

38 2 1947.54

19 5 549.35

26 8 1680.69

30 12 555.2

7 6 334.12

17 19 925.89

27 6 249.2

12 14 666.3

27 17 1955.27

8 11 363.62

4 8 1728

20 9 197.43

28 24 973.93

27 12 1051.75

12 19 1315.32

4 13 1628.32

13 12 1452.1

16 21 1591.59

10 1 487.24

36 18 839.52

8 11 1729.52

13 3 1679

2 18 780.88

9 5 498.99

26 11 1932.64

27 1 98.39

5 6 239.36

23 13 866.19

27 4 1469.94

26 7 1273.07

24 19 1617.51

24 9 334.68

7 12 1288.1

42 2 1784.51

16 7 1234.33

21 21 1730.02

13 3 1512.12

9 4 93

26 3 1767.68

24 11 1640.19

5 6 750.26

6 12 299.66

19 14 1735.09

26 11 1628.49

20 4 1155.02

22 8 1923.31

2 18 391.1

13 14 411.61

21 4 1631.06

21 18 1359.47

26 3 1083.38

23 16 1320.69

13 21 564.33

13 3 1936.93

12 21 766.06

23 8 1090.77

25 9 1932.46

27 11 747.42

14 12 377.47

13 6 141.28

8 22 547.14

23 3 344.95

17 7 999.24

13 12 745.11

28 23 751.19

8 1 954.72

26 3 1066.27

17 2 489.08

3 15 885.49

39 14 1454.39

13 8 519.83

18 21 473.87

10 21 1465.95

4 6 301.49

20 16 951.76

16 15 1282.64

14 6 347.42

1 5 164.98

20 7 99.67

7 5 1909.29

1 11 981.2

16 14 1473.62

18 1 72.31

20 23 1128.24

2 9 1444.39

1 1 128

59 1 1767.93

18 1 531.73

27 1 85.63

2 2 698.67

3 3 690.64

29 1 249.85

9 3 563.28

19 5 1191.27

21 22 1400.81

6 2 1749.21

23 11 471.6

27 19 1325.11

12 13 778.11

8 6 216.09

84 2 276.26

19 2 1657.46

26 2 1483.83

21 5 554.38

15 13 1457.71

7 15 1537.57

3 21 627.72

1 3 1920.02

7 9 739.45

19 23 639.21

2 22 1321.41

19 14 1214.69

5 2 1576.96

2 6 1726.92

9 2 418.18

93 1 878.92

24 11 1829.07

9 19 919.33

28 14 950.21

22 3 773.16

29 1 314.52

4 2 1708.36

3 5 129.92

11 2 1427.69

22 13 1128.25

29 2 1198.38

9 24 880.79

21 2 1152.14

103 6 320.79

26 18 568.95

13 15 553.58

10 1 103.32

8 5 62.11

29 14 1572.41

15 4 946.16

16 7 1189.99

17 1 1856.61

9 9 802.56

7 11 1399.32

3 12 853.18

16 18 1346.3

12 8 1899.43

8 19 1829.73

14 6 1995.32

121 19 1343.96

6 24 579

9 17 1535.08

10 22 1035.15

5 6 1990.33

16 12 1998.24

26 4 1904.23

20 4 1844.99

16 18 835.03

5 11 1960.2

2 4 480.5

16 5 1041.53

16 7 233.22

21 16 1906.48

29 11 572.41

8 18 1634.84

15 2 120.92

8 2 312.85

21 1 1097.34

14 7 583.65

13 7 1361.69

28 21 1168.85

4 3 1840.56

16 5 1254.12

19 24 1088.95

11 2 1940.85

3 18 1187.4

9 2 1725.07

27 7 1717.7

12 4 1290.95

16 3 1075.38

54 8 1352.2

5 13 1553.19

24 12 1971.23

27 6 226.25

13 5 1779.41

8 11 1934.78

30 2 377.73

7 23 959.73

18 5 406.12

18 1 807.35

0 21 814.76

7 3 1199.35

19 1 593.31

12 2 726.51

14 22 980.27

7 19 722.57

15 7 207.07

8 5 334.09

11 3 1472.33

14 5 1670.74

58 21 1902.07

17 22 1949.76

3 22 490.72

9 3 145.14

5 1 90.41

10 4 118.43

5 2 527.92

23 11 1887.65

27 16 1344.29

24 2 1665.91

10 19 439.31

4 2 812.47

16 6 1251.32

21 22 1497.22

25 14 1328.08

7 1 285.05

27 9 270.18

52 7 649.58

18 1 73.1

23 6 271.1

28 7 309.92

27 4 1582.05

5 17 1661.15

24 6 327.09

15 6 214.7

14 4 573.03

15 9 423.98

22 3 895.91

28 5 1651.61

20 2 161.6

10 2 666.05

12 4 596.93

27 18 1919.11

22 18 1348.37

11 16 1746.07

6 24 685.08

28 6 1272.97

3 19 1527.41

17 5 1968.29

21 24 1269.7

27 14 755.85

6 21 1471.02

28 26 1167.93

20 1 343.18

26 11 1051.25

20 18 1190.9

24 6 564.02

5 28 1090.56

8 22 1687.67

17 21 1968.93

28 18 436.54

28 5 1681.4

20 1 28.43

4 20 837.3

7 17 803.21

4 1 49.7

1 11 612.05

14 20 1121.53

16 6 173.27

12 23 954.11

3 26 701.23

25 10 995.61

15 4 1576.22

5 5 1559.12

8 1 161.15

11 2 225.69

2 2 1776.01

24 10 1599.47

21 3 304.23

6 15 1856.11

24 10 734.29

53 6 1437.02

25 8 879.55

69 21 677.5

8 24 1830.94

2 6 521.58

18 22 598.34

29 9 245.96

4 20 1127.64

25 15 1176.69

13 23 1312.58

6 25 547.58

4 4 714.95

1 22 1617.22

22 8 1893.54

27 29 1290.45

23 13 1434.73

3 5 200.52

8 17 1042.82

21 7 1542.58

7 1 171.09

16 1 49.61

3 3 443.42

15 8 410.27

18 1 338.22

26 9 389.47

19 9 1627.36

2 15 617.82

27 17 921

10 13 602.29

5 7 132.27

15 19 704.16

26 17 1336.09

24 9 199.27

28 9 1438.39

20 26 773.5

20 3 251.94

15 10 1337.51

18 11 301.09

22 14 714.36

10 2 1513.69

14 16 393.81

25 10 904.58

21 1 358.62

18 13 1696.64

20 3 465.7

10 5 631.59

29 15 1283.59

11 9 1335.59

27 23 990.49

21 17 1256.47

1 19 1728.84

8 4 617.83

10 9 1380.94

4 3 1783.68

4 1 23.24

19 9 587.24

11 13 1574.3

19 1 1898.46

8 1 953.18

23 2 351.39

6 7 652.8

26 2 1270.24

19 6 207.82

23 1 68.31

20 7 1525.26

13 12 1992.17

18 15 1956.9

15 3 1945.2

2 8 1893.18

22 27 1554.73

11 18 1424.69

5 2 248.11

1 5 275.93

9 13 1611.27

10 1 93.72

18 10 1530.48

27 13 1509.41

9 24 1281.48

26 3 539.2

29 2 1399.1

25 29 1733.38

27 14 653.55

43 2 706.12

24 29 1489.27

28 21 1956.83

12 14 1795.23

10 22 730.88

7 11 1583.77

18 2 169.75

18 6 1607.65

68 3 916.19

20 23 681.57

16 12 1528.57

5 28 1396.47

3 3 259.83

4 6 1804.3

15 21 1073.82

27 11 884.15

16 7 411.65

20 20 933.47

9 19 1692.98

1 14 1168.04

18 9 289.67

21 6 1527.15

1 20 1951.03

0 4 1331.32

13 27 719.12

16 6 735.31

56 4 1869.92

26 1 150.18

24 2 157.54

2 9 1748.72

15 3 890.99

16 11 649.79

23 27 1628.78

21 2 1599.24

12 23 1550.61

8 1 183.55

26 5 1230.32

9 14 1627.19

11 28 1154.7

17 1 33.58

15 9 1959.64

10 22 1581.14

27 5 1879.82

25 3 1142.4

15 1 174.64

5 2 638.81

19 4 1067.78

14 22 1345.92

6 3 1311.06

26 8 962.62

23 1 285.97

17 17 1651.68

16 3 1503.87

6 13 1506.48

22 24 625.12

28 17 1742.95

17 26 1292.21

16 7 1801.38

1 27 1585.1

17 27 7795.03

2 17 2341.93

1 5 1865.78

19 4 1163.08

9 7 1007.06

27 7 1322.94

30 4 860.41

22 1 776.7

];

%% 调用kmeans算法

opts = statset('MaxIter',iteration);

[IDX,C,~,D] = kmeans(data,k,'distance',distance,'Options',opts);

IDX %%%所属类

C %%%% 类中心

%% 打印结果

for i=1:k

disp(['第' num2str(i) '组聚类中心为：']);

disp(C(i,:));

end

disp('K-Means聚类算法完成！');

clear all

A=[27 6 232.61

3 5 1507.11

4 16 817.62

3 11 232.81

14 7 1913.05

19 6 220.07

5 2 615.83

26 2 1059.66

21 9 304.82

2 21 1227.96

15 2 521.02

26 3 438.22

17 11 1744.55

30 16 1957.44

5 7 1713.79

4 21 1768.11

93 2 1016.34

16 3 950.36

4 1 754.93

27 1 294.23

5 1 195.3

17 3 1845.34

12 13 1434.29

21 3 275.85

18 5 449.76

30 21 1628.68

4 2 1795.41

7 12 1786.24

18 1 679.44

60 7 5318.81

4 22 873.68

16 1 654.69

3 2 230.37

14 11 1165.68

13 21 1276.31

10 16 334.21

5 5 759.19

1 1 1383.39

24 8 3280.77

19 4 154.65

9 1 501.38

1 24 1721.93

14 1 107.18

10 1 973.36

10 17 764.55

7 6 1251.4

23 11 923.28

15 1 1011.18

1 15 1847.61

3 21 1669.46

10 3 1758.05

30 8 1865.99

28 8 1791.44

4 15 874.6

24 5 557.17

16 2 1025.35

7 2 1261.47

66 4 2920.81

4 2 1266.02

21 11 626.37

6 4 1105.63

26 21 1465.58

8 21 630.74

26 2 1546.45

14 11 1577.91

17 6 170.16

20 5 1558.75

5 5 1272.06

26 3 111.02

15 7 1578.37

26 24 720.26

25 16 873.22

4 7 935.19

23 11 723.67

15 9 1833.01

6 3 681.26

78 11 1461.63

15 17 560.57

9 18 1761.19

8 7 1707.25

28 2 227.14

22 3 223.57

8 6 940.46

23 6 256.3

5 1 312.44

15 14 929.52

27 15 1296.66

22 11 591.62

2 2 755.72

18 17 1424.07

61 8 940.93

3 7 414.24

1 14 576.56

12 22 1037.14

26 5 1200.17

1 3 1727.36

13 16 503.71

19 7 703.36

12 17 1583.05

3 18 602.9

5 1 798.41

25 7 1202.09

85 4 1605.36

28 21 1222.34

25 19 593.17

8 6 94.75

14 1 89.7

21 15 1061.56

29 15 978.85

14 3 155.9

20 5 938.15

3 24 1477.97

10 6 1976.23

8 5 181.17

17 4 499.65

49 1 76.22

13 11 267.1

23 1 137.62

65 5 1383.47

20 22 1311.2

22 13 496.61

21 6 1921.8

14 11 304.1

26 1 468.09

27 9 432.67

30 1 368.35

11 4 759.69

26 3 1110.81

28 1 53

39 11 1314.21

11 6 1895.95

23 1 417.23

3 2 679.58

5 1 533.97

24 8 1134.64

25 6 825.39

10 6 165.39

29 9 1234.64

80 11 1829.32

23 1 89

4 2 1557.88

3 8 1328.01

15 7 304.65

17 23 1505.55

16 7 711.1

16 1 539.76

5 1 65.83

16 3 776.21

22 18 1820.61

19 4 1997

4 22 1846.69

23 7 1252.41

7 13 987.17

3 6 1130.03

18 1 148.32

28 1 135.57

6 2 1641.79

7 2 242.83

21 8 1803.02

12 12 1557.95

25 4 1494.81

26 13 1280.06

28 1 160

22 9 440.12

14 1 746.95

12 2 351.09

6 2 556.91

7 3 957.83

16 16 1212.37

11 2 946.65

16 13 1442.68

5 12 1612.7

0 21 1281.68

9 13 1928.8

24 7 335.35

3 8 1589.35

20 11 797.72

17 1 793.47

13 16 569.47

10 3 149.5

17 21 515.38

8 4 187.76

20 7 1441.83

27 1 121.61

25 11 934.58

16 15 591.06

15 4 951.31

12 11 914

3 22 1058

9 2 1111.51

17 9 458.52

27 18 927.59

73 1 1370.25

17 1 946.53

10 1 1474.41

16 3 1661.03

0 9 1465.18

17 3 1813.45

5 7 772.54

4 1 172.82

14 4 552.37

12 8 946.28

26 2 651.99

6 9 857.79

7 4 1016.55

5 6 1766.44

25 3 908.53

28 2 403.75

25 4 1270.75

13 3 1157.92

13 1 497.09

2 1 216.78

23 16 1454.58

2 17 1027.58

24 12 722.09

15 7 282.19

11 4 106.96

18 1 999.75

24 14 1139.33

24 5 836.72

3 2 1678.54

3 17 1337.34

1 4 1335.77

11 2 810.2

29 11 943.9

51 12 5135.77

6 9 984.12

6 5 1413.55

1 6 381.95

6 14 788.22

29 1 80.8

21 1 611.13

24 4 1766.35

0 2 1516.76

9 6 1925.2

17 1 344.23

49 1 204.1

5 2 1257.59

7 3 1095.09

2 1 123.76

3 2 696.82

26 2 1487.35

19 3 1278.43

28 14 627.97

12 1 95

14 4 1827.01

10 6 754.05

19 2 922.93

12 12 257.4

1 14 676.34

3 19 984.32

27 32 1914.06

13 4 1953.81

1 4 768.02

61 13 1379.86

42 1 1054.24

21 11 298.34

17 5 841.04

8 9 1757.87

22 11 1010.7

13 6 948.83

12 24 852.95

7 7 1532.72

11 6 1891.29

10 21 1900.33

16 13 598.84

8 21 1622.91

21 7 536.53

66 6 180.51

18 8 1751.33

26 1 1146.43

24 6 654.8

4 3 1599.58

14 16 1317.4

16 18 1665.03

11 17 440.21

16 3 1689.94

3 12 1163.78

11 6 664.23

10 4 1658.4

3 8 1293.56

59 14 912.94

25 2 1265.24

20 6 1169.96

25 3 735.19

5 6 1749.68

17 15 483.51

23 22 1436.67

16 2 1439.93

16 1 252.12

7 14 848.68

30 9 252.98

5 2 464.9

3 2 50.14

5 5 1381.21

23 1 1606.04

8 11 309.45

69 15 1441.57

12 8 434.36

61 6 1893.97

16 18 1391.11

12 24 1292.14

3 6 312.33

17 24 845.68

16 6 1993.47

22 2 1414.29

2 11 472.46

10 1 1255.44

7 12 1256.98

15 9 904.91

8 9 237.52

7 11 1143.16

20 7 805.15

15 4 1259.42

11 7 247.64

3 1 1391.51

12 18 866.59

71 23 1127.95

25 9 1535.08

20 13 911.15

20 5 1001.84

10 1 91.93

15 7 1172.57

9 18 1882.22

1 19 528.68

21 11 1943.65

28 7 570.73

5 6 909.57

12 8 1406.95

10 11 1060.91

4 1 90.67

17 15 1757.5

65 11 1082.01

1 6 1665.49

20 17 553.53

24 18 1568.74

24 4 993.88

9 17 511.39

12 23 7149.96

11 16 1994.53

6 13 399.26

20 7 211.93

16 2 1466.19

29 2 1185.26

22 16 1400.35

11 1 433

10 4 238.6

22 3 1393.92

7 3 720.16

26 16 1810.43

24 6 230.28

4 4 772.84

26 1 339.03

5 19 1118.51

1 6 328.31

21 17 1385.52

47 5 169.25

8 18 1177.91

26 12 879.69

11 3 446.58

16 1 1437.14

13 21 695.48

27 16 1715.16

19 1 1048.5

2 17 1545.94

22 1 656.28

15 11 620.08

16 12 1111.76

26 5 1440.3

30 11 173.89

29 9 365.41

29 19 1495.14

7 24 1456.31

13 13 1327.45

24 1 1445.07

20 2 67.47

15 14 759.95

8 11 268.31

44 11 887.47

8 22 1970.75

26 2 335.05

13 19 419.22

7 12 494.74

10 11 1535.51

9 1 571.11

12 1 1491.21

12 3 1385.53

1 11 1030.93

4 4 978.71

15 1 516.33

6 24 543.75

5 4 356.23

10 18 1789.67

24 16 1978.79

16 5 434.48

22 23 1458.64

15 1 854.1

18 13 1879.27

8 24 1901.09

39 2 1521.44

14 13 1956.9

12 14 690.06

1 18 1157.17

17 6 600.46

1 21 1108.49

25 23 512.01

25 11 1510.08

27 21 1255.12

3 5 1676.56

1 17 1974.68

28 4 418.22

1 19 1577.28

5 24 1416.82

23 9 1300.04

12 23 1206.86

11 16 1699.1

10 19 1031.1

8 9 414.99

58 8 1262.55

18 4 1254.34

7 1 1103.45

8 14 1802.11

0 2 387.24

19 22 1204.62

27 19 1058.39

22 1 696.37

12 7 1055.71

2 14 1649.81

27 19 1293.73

20 16 1517.39

28 3 1497.35

4 9 399.02

6 1 1598.45

0 18 1300.99

18 15 1008.74

13 8 1819.96

21 18 630.47

6 5 1478.86

16 21 1562.08

29 9 1171.59

8 21 1642.86

11 19 1373.12

8 5 180.07

2 18 996.17

7 1 45.23

29 11 1049.44

16 8 220.03

19 7 393.14

14 17 1963.58

9 6 147.12

6 7 1279.7

24 1 633.17

12 1 1562.66

14 21 1354.59

8 1 911.62

25 4 1725.82

4 4 573.16

14 13 1331.53

13 14 1688.13

13 4 180

4 22 636.38

10 8 830.24

20 22 641.43

4 1 790.84

17 22 686

29 18 839.53

7 22 1862.15

4 2 1645.01

26 13 678.39

1 15 1287.7

24 12 1138.13

25 21 1081.9

1 11 432.32

18 13 437.33

24 23 852.05

18 5 1686.86

39 15 1420.24

27 11 869.55

25 8 1919.58

12 22 1451.94

2 1 1824.64

7 11 1877.28

6 24 1717.3

17 16 6148.05

13 2 111.17

21 1 621.61

16 1 1663.79

7 7 1247.65

5 1 198.72

8 1 927.95

33 1 117.62

6 13 1674.32

1 21 734.98

5 11 1387.5

8 18 488.5

7 6 92.63

6 7 1808.21

19 21 910.94

14 6 1564.15

25 14 1894.13

10 12 751.38

4 11 1813.51

4 6 1367.15

15 5 1264.09

7 1 685.55

4 4 1296.34

14 7 1300.12

38 15 1728.68

11 1 487.28

4 12 1313.31

25 17 1694.35

5 2 1931.97

27 22 1372.36

26 18 1731.94

19 1 1496.83

22 15 1798.79

11 6 803.94

24 11 1505.96

17 1 120.52

18 7 936.77

23 7 1824.41

17 5 177.08

1 19 867.99

21 17 756.88

13 4 6433.81

38 2 1947.54

19 5 549.35

26 8 1680.69

30 12 555.2

7 6 334.12

17 19 925.89

27 6 249.2

12 14 666.3

27 17 1955.27

8 11 363.62

4 8 1728

20 9 197.43

28 24 973.93

27 12 1051.75

12 19 1315.32

4 13 1628.32

13 12 1452.1

16 21 1591.59

10 1 487.24

36 18 839.52

8 11 1729.52

13 3 1679

2 18 780.88

9 5 498.99

26 11 1932.64

27 1 98.39

5 6 239.36

23 13 866.19

27 4 1469.94

26 7 1273.07

24 19 1617.51

24 9 334.68

7 12 1288.1

42 2 1784.51

16 7 1234.33

21 21 1730.02

13 3 1512.12

9 4 93

26 3 1767.68

24 11 1640.19

5 6 750.26

6 12 299.66

19 14 1735.09

26 11 1628.49

20 4 1155.02

22 8 1923.31

2 18 391.1

13 14 411.61

21 4 1631.06

21 18 1359.47

26 3 1083.38

23 16 1320.69

13 21 564.33

13 3 1936.93

12 21 766.06

23 8 1090.77

25 9 1932.46

27 11 747.42

14 12 377.47

13 6 141.28

8 22 547.14

23 3 344.95

17 7 999.24

13 12 745.11

28 23 751.19

8 1 954.72

26 3 1066.27

17 2 489.08

3 15 885.49

39 14 1454.39

13 8 519.83

18 21 473.87

10 21 1465.95

4 6 301.49

20 16 951.76

16 15 1282.64

14 6 347.42

1 5 164.98

20 7 99.67

7 5 1909.29

1 11 981.2

16 14 1473.62

18 1 72.31

20 23 1128.24

2 9 1444.39

1 1 128

59 1 1767.93

18 1 531.73

27 1 85.63

2 2 698.67

3 3 690.64

29 1 249.85

9 3 563.28

19 5 1191.27

21 22 1400.81

6 2 1749.21

23 11 471.6

27 19 1325.11

12 13 778.11

8 6 216.09

84 2 276.26

19 2 1657.46

26 2 1483.83

21 5 554.38

15 13 1457.71

7 15 1537.57

3 21 627.72

1 3 1920.02

7 9 739.45

19 23 639.21

2 22 1321.41

19 14 1214.69

5 2 1576.96

2 6 1726.92

9 2 418.18

93 1 878.92

24 11 1829.07

9 19 919.33

28 14 950.21

22 3 773.16

29 1 314.52

4 2 1708.36

3 5 129.92

11 2 1427.69

22 13 1128.25

29 2 1198.38

9 24 880.79

21 2 1152.14

103 6 320.79

26 18 568.95

13 15 553.58

10 1 103.32

8 5 62.11

29 14 1572.41

15 4 946.16

16 7 1189.99

17 1 1856.61

9 9 802.56

7 11 1399.32

3 12 853.18

16 18 1346.3

12 8 1899.43

8 19 1829.73

14 6 1995.32

121 19 1343.96

6 24 579

9 17 1535.08

10 22 1035.15

5 6 1990.33

16 12 1998.24

26 4 1904.23

20 4 1844.99

16 18 835.03

5 11 1960.2

2 4 480.5

16 5 1041.53

16 7 233.22

21 16 1906.48

29 11 572.41

8 18 1634.84

15 2 120.92

8 2 312.85

21 1 1097.34

14 7 583.65

13 7 1361.69

28 21 1168.85

4 3 1840.56

16 5 1254.12

19 24 1088.95

11 2 1940.85

3 18 1187.4

9 2 1725.07

27 7 1717.7

12 4 1290.95

16 3 1075.38

54 8 1352.2

5 13 1553.19

24 12 1971.23

27 6 226.25

13 5 1779.41

8 11 1934.78

30 2 377.73

7 23 959.73

18 5 406.12

18 1 807.35

0 21 814.76

7 3 1199.35

19 1 593.31

12 2 726.51

14 22 980.27

7 19 722.57

15 7 207.07

8 5 334.09

11 3 1472.33

14 5 1670.74

58 21 1902.07

17 22 1949.76

3 22 490.72

9 3 145.14

5 1 90.41

10 4 118.43

5 2 527.92

23 11 1887.65

27 16 1344.29

24 2 1665.91

10 19 439.31

4 2 812.47

16 6 1251.32

21 22 1497.22

25 14 1328.08

7 1 285.05

27 9 270.18

52 7 649.58

18 1 73.1

23 6 271.1

28 7 309.92

27 4 1582.05

5 17 1661.15

24 6 327.09

15 6 214.7

14 4 573.03

15 9 423.98

22 3 895.91

28 5 1651.61

20 2 161.6

10 2 666.05

12 4 596.93

27 18 1919.11

22 18 1348.37

11 16 1746.07

6 24 685.08

28 6 1272.97

3 19 1527.41

17 5 1968.29

21 24 1269.7

27 14 755.85

6 21 1471.02

28 26 1167.93

20 1 343.18

26 11 1051.25

20 18 1190.9

24 6 564.02

5 28 1090.56

8 22 1687.67

17 21 1968.93

28 18 436.54

28 5 1681.4

20 1 28.43

4 20 837.3

7 17 803.21

4 1 49.7

1 11 612.05

14 20 1121.53

16 6 173.27

12 23 954.11

3 26 701.23

25 10 995.61

15 4 1576.22

5 5 1559.12

8 1 161.15

11 2 225.69

2 2 1776.01

24 10 1599.47

21 3 304.23

6 15 1856.11

24 10 734.29

53 6 1437.02

25 8 879.55

69 21 677.5

8 24 1830.94

2 6 521.58

18 22 598.34

29 9 245.96

4 20 1127.64

25 15 1176.69

13 23 1312.58

6 25 547.58

4 4 714.95

1 22 1617.22

22 8 1893.54

27 29 1290.45

23 13 1434.73

3 5 200.52

8 17 1042.82

21 7 1542.58

7 1 171.09

16 1 49.61

3 3 443.42

15 8 410.27

18 1 338.22

26 9 389.47

19 9 1627.36

2 15 617.82

27 17 921

10 13 602.29

5 7 132.27

15 19 704.16

26 17 1336.09

24 9 199.27

28 9 1438.39

20 26 773.5

20 3 251.94

15 10 1337.51

18 11 301.09

22 14 714.36

10 2 1513.69

14 16 393.81

25 10 904.58

21 1 358.62

18 13 1696.64

20 3 465.7

10 5 631.59

29 15 1283.59

11 9 1335.59

27 23 990.49

21 17 1256.47

1 19 1728.84

8 4 617.83

10 9 1380.94

4 3 1783.68

4 1 23.24

19 9 587.24

11 13 1574.3

19 1 1898.46

8 1 953.18

23 2 351.39

6 7 652.8

26 2 1270.24

19 6 207.82

23 1 68.31

20 7 1525.26

13 12 1992.17

18 15 1956.9

15 3 1945.2

2 8 1893.18

22 27 1554.73

11 18 1424.69

5 2 248.11

1 5 275.93

9 13 1611.27

10 1 93.72

18 10 1530.48

27 13 1509.41

9 24 1281.48

26 3 539.2

29 2 1399.1

25 29 1733.38

27 14 653.55

43 2 706.12

24 29 1489.27

28 21 1956.83

12 14 1795.23

10 22 730.88

7 11 1583.77

18 2 169.75

18 6 1607.65

68 3 916.19

20 23 681.57

16 12 1528.57

5 28 1396.47

3 3 259.83

4 6 1804.3

15 21 1073.82

27 11 884.15

16 7 411.65

20 20 933.47

9 19 1692.98

1 14 1168.04

18 9 289.67

21 6 1527.15

1 20 1951.03

0 4 1331.32

13 27 719.12

16 6 735.31

56 4 1869.92

26 1 150.18

24 2 157.54

2 9 1748.72

15 3 890.99

16 11 649.79

23 27 1628.78

21 2 1599.24

12 23 1550.61

8 1 183.55

26 5 1230.32

9 14 1627.19

11 28 1154.7

17 1 33.58

15 9 1959.64

10 22 1581.14

27 5 1879.82

25 3 1142.4

15 1 174.64

5 2 638.81

19 4 1067.78

14 22 1345.92

6 3 1311.06

26 8 962.62

23 1 285.97

17 17 1651.68

16 3 1503.87

6 13 1506.48

22 24 625.12

28 17 1742.95

17 26 1292.21

16 7 1801.38

1 27 1585.1

17 27 7795.03

2 17 2341.93

1 5 1865.78

19 4 1163.08

9 7 1007.06

27 7 1322.94

30 4 860.41

22 1 776.7

];

[n,n1]=size(A);

B=[15.41614602 10.54100933 734.7280821

16.56579336 4.977362956 250.6759131

17.86550716 11.40847198 1215.141695

16.92279759 10.64941236 1915.569751

15.78954533 10.91752858 1588.771549

];

[m,m1]=size(B);

%Dist距离矩阵

Dist=zeros(n,m);

for i=1:n

for j=1:m

Dist(i,j)=norm(A(i,:)-B(j,:));

end

end

for i=1:1:n

D(i)=find(min( Dist(i,:))==Dist(i,:))

end

D'