

<最小生成树实验报告>

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- 计算最小生成树

- ① 操作说明： 执行exe文件后，先在控制台输出所有边和跟那些边关联的结点，然后进行计算最小生成树，最后把“树的所有结点的信息和树的所有边的信息”输出在“result(). json”里面。
(这个文件在跟exe文件同目录里) (用了两个数据,“movie.json”和“Online Social Network. json”)

- ② 算法： 利用了“Prim's Algorithm”。

- ② 结果：

movie.txt	2012-09-07 오후...	텍스트 문서	3,764KB
Online Social Network Vertices.txt	2017-01-14 오후...	텍스트 문서	68KB
Online Social Network.txt	2014-01-05 오후...	텍스트 문서	176KB
最小生成树(movie).exe	2017-01-15 오후...	응용 프로그램	12KB
最小生成树(OSN).exe	2017-01-15 오후...	응용 프로그램	12KB

<处理之前>

```
C:\Users\dlwog\Desktop\最小生成树\exe\最小生成树(movie).exe
(962,966):18.744000
(962,967):3.633000
(962,968):2.700000
(962,969):5.780000
(962,970):4.800000
(963,964):3.900000
(963,965):1.700000
(963,966):3.833000
(963,967):1.500000
(963,968):1.700000
(964,965):5.700000
(964,966):10.820000
(964,967):3.767000
(964,968):3.833000
(964,969):3.633000
(964,970):2.800000
(965,966):4.650000
(965,967):2.800000
(965,969):4.700000
(965,970):2.900000
(966,967):9.700000
(966,968):2.900000
(966,969):4.650000
(966,970):5.780000
(967,969):4.800000
(967,970):4.800000
(968,969):1.700000
(968,970):2.700000
(969,970):8.775000
```

<执行“最小生成树(movie).exe”文件>

```
C:\Users\dlwog\Desktop\最小生成树\exe\最小生成树(OSN).exe
(1895,529):1.000000
(1897,651):1.000000
(1898,60):1.000000
(1899,51):1.000000
(1899,232):1.000000
(1899,268):1.000000
(1899,305):1.000000
(1899,307):1.000000
(1899,317):1.000000
(1899,330):1.000000
(1899,344):1.000000
(1899,348):1.000000
(1899,437):1.000000
(1899,495):1.000000
(1899,528):1.000000
(1899,606):1.000000
(1899,658):1.000000
(1899,663):1.000000
(1899,669):1.000000
(1899,748):1.000000
(1899,784):1.000000
(1899,796):1.000000
(1899,821):1.000000
(1899,901):1.000000
(1899,989):1.000000
(1899,1026):1.000000
(1899,1157):1.000000
(1899,1521):1.000000
(1899,1770):1.000000
```

<执行“最小生成树(OSN).exe”文件>

movie.txt	2012-09-07 오후...	텍스트 문서	3,764KB
Online Social Network Vertices.txt	2017-01-14 오후...	텍스트 문서	68KB
Online Social Network.txt	2014-01-05 오후...	텍스트 문서	176KB
result(movie).json	2017-01-15 오후...	JSON File	64KB
result(OSN).json	2017-01-15 오후...	JSON File	138KB
最小生成树(movie).exe	2017-01-15 오후...	응용 프로그램	12KB
最小生成树(OSN).exe	2017-01-15 오후...	응용 프로그램	12KB

<输出json文件>

```

1  {
2    "nodes": [
3      {"id": 0},
4      {"id": 646},
5      {"id": 41},
6      {"id": 44},
7      {"id": 46},
8      {"id": 77},
9      {"id": 711},
10     {"id": 134},
11     {"id": 146},
12     {"id": 114},
13     {"id": 199},
14     {"id": 72},
15     {"id": 74},
16     {"id": 452},
17     {"id": 343},
18     {"id": 18},
19     {"id": 118},
20     {"id": 236},
21     {"id": 311},
22     {"id": 361},
23     {"id": 417},
24     {"id": 476},
25     {"id": 515},
26     {"id": 679},
27     {"id": 738},
28     {"id": 150},
29     {"id": 256},
30     {"id": 761},
31     {"id": 125},
32     {"id": 310},
33     {"id": 5},
34     {"id": 24},
35     {"id": 94},

```

<"result(movie). json"文件中结点的信息>

```

894  "edges": [
895    {"source": 0, "target": 646, "value": 1.300000},
896    {"source": 41, "target": 646, "value": 1.100000},
897    {"source": 44, "target": 646, "value": 1.100000},
898    {"source": 46, "target": 646, "value": 1.100000},
899    {"source": 77, "target": 646, "value": 1.100000},
900    {"source": 77, "target": 711, "value": 1.100000},
901    {"source": 134, "target": 646, "value": 1.100000},
902    {"source": 134, "target": 146, "value": 1.100000},
903    {"source": 114, "target": 146, "value": 1.100000},
904    {"source": 114, "target": 199, "value": 1.100000},
905    {"source": 72, "target": 199, "value": 1.100000},
906    {"source": 74, "target": 199, "value": 1.100000},
907    {"source": 74, "target": 452, "value": 1.100000},
908    {"source": 114, "target": 343, "value": 1.100000},
909    {"source": 18, "target": 343, "value": 1.100000},
910    {"source": 18, "target": 118, "value": 1.100000},
911    {"source": 18, "target": 236, "value": 1.100000},
912    {"source": 18, "target": 311, "value": 1.100000},
913    {"source": 18, "target": 361, "value": 1.100000},
914    {"source": 18, "target": 417, "value": 1.100000},
915    {"source": 18, "target": 476, "value": 1.100000},
916    {"source": 114, "target": 515, "value": 1.100000},
917    {"source": 114, "target": 679, "value": 1.100000},
918    {"source": 114, "target": 738, "value": 1.100000},
919    {"source": 118, "target": 150, "value": 1.100000},
920    {"source": 118, "target": 256, "value": 1.100000},
921    {"source": 118, "target": 761, "value": 1.100000},
922    {"source": 125, "target": 199, "value": 1.100000},
923    {"source": 125, "target": 310, "value": 1.100000},
924    {"source": 5, "target": 310, "value": 1.100000},
925    {"source": 24, "target": 310, "value": 1.100000},
926    {"source": 94, "target": 310, "value": 1.100000},
927    {"source": 134, "target": 174, "value": 1.100000},
928    {"source": 134, "target": 444, "value": 1.100000},

```

<result(movie). json文件中边的信息>

```

1  {
2    "nodes": [
3      {"id": 1},
4      {"id": 2},
5      {"id": 9},
6      {"id": 21},
7      {"id": 22},
8      {"id": 33},
9      {"id": 34},
10     {"id": 3},
11     {"id": 19},
12     {"id": 24},
13     {"id": 30},
14     {"id": 35},
15     {"id": 36},
16     {"id": 38},
17     {"id": 41},
18     {"id": 42},
19     {"id": 43},
20     {"id": 46},
21     {"id": 49},
22     {"id": 50},
23     {"id": 53},
24     {"id": 54},
25     {"id": 57},
26     {"id": 59},
27     {"id": 61},
28     {"id": 64},
29     {"id": 68},
30     {"id": 69},
31     {"id": 70},
32     {"id": 72},
33     {"id": 73},
34     {"id": 74},
35     {"id": 75},

```

<result(OSN).json文件中结点的信息>

```

1897  "edges": [
1898    {"source": 1, "target": 2, "value": 1.000000},
1899    {"source": 1, "target": 9, "value": 1.000000},
1900    {"source": 1, "target": 21, "value": 1.000000},
1901    {"source": 1, "target": 22, "value": 1.000000},
1902    {"source": 1, "target": 33, "value": 1.000000},
1903    {"source": 1, "target": 34, "value": 1.000000},
1904    {"source": 3, "target": 21, "value": 1.000000},
1905    {"source": 3, "target": 19, "value": 1.000000},
1906    {"source": 3, "target": 24, "value": 1.000000},
1907    {"source": 3, "target": 30, "value": 1.000000},
1908    {"source": 3, "target": 35, "value": 1.000000},
1909    {"source": 3, "target": 36, "value": 1.000000},
1910    {"source": 3, "target": 38, "value": 1.000000},
1911    {"source": 3, "target": 41, "value": 1.000000},
1912    {"source": 3, "target": 42, "value": 1.000000},
1913    {"source": 3, "target": 43, "value": 1.000000},
1914    {"source": 3, "target": 46, "value": 1.000000},
1915    {"source": 3, "target": 49, "value": 1.000000},
1916    {"source": 3, "target": 50, "value": 1.000000},
1917    {"source": 3, "target": 53, "value": 1.000000},
1918    {"source": 3, "target": 54, "value": 1.000000},
1919    {"source": 3, "target": 57, "value": 1.000000},
1920    {"source": 3, "target": 59, "value": 1.000000},
1921    {"source": 3, "target": 61, "value": 1.000000},
1922    {"source": 3, "target": 64, "value": 1.000000},
1923    {"source": 3, "target": 68, "value": 1.000000},
1924    {"source": 3, "target": 69, "value": 1.000000},
1925    {"source": 3, "target": 70, "value": 1.000000},
1926    {"source": 3, "target": 72, "value": 1.000000},
1927    {"source": 3, "target": 73, "value": 1.000000},
1928    {"source": 3, "target": 74, "value": 1.000000},
1929    {"source": 3, "target": 75, "value": 1.000000},
1930    {"source": 3, "target": 76, "value": 1.000000},
1931    {"source": 3, "target": 78, "value": 1.000000},

```

<result(OSN). json文件中边的信息>