**最短路径问题**

**1565 最短路**

Time Limit: 1000 ms

Memory Limit: 256 mb

在每年的校赛里，所有进入决赛的同学都会获得一件很漂亮的t-shirt。但是每当我们的工作人员把上百件的衣服从商店运回到赛场的时候，却是非常累的！所以现在他们想要寻找最短的从商店到赛场的路线，你可以帮助他们吗？

**输入输出格式**

**输入描述:**

输入包括多组数据。每组数据第一行是两个整数N、M（N<=100，M<=10000），N表示成都的大街上有几个路口，标号为1的路口是商店所在地，标号为N的路口是赛场所在地，M则表示在成都有几条路。N=M=0表示输入结束。接下来M行，每行包括3个整数A，B，C（1<=A,B<=N,1<=C<=1000）,表示在路口A与路口B之间有一条路，我们的工作人员需要C分钟的时间走过这条路。输入保证至少存在1条商店到赛场的路线。

**输出描述:**

对于每组输入，输出一行，表示工作人员从商店走到赛场的最短时间。

**输入输出样例**

**输入样例#:**

2 1

1 2 3

3 3

1 2 5

2 3 5

3 1 2

0 0

**输出样例#:**

3

2

**1344 最短路径问题**

Time Limit: 1000 ms

Memory Limit: 256 mb

给你n个点，m条无向边，每条边都有长度d和花费p，给你起点s终点t，要求输出起点到终点的最短距离及其花费，如果最短距离有多条路线，则输出花费最少的。

**输入输出格式**

**输入描述:**

输入n,m，点的编号是1~n,然后是m行，每行4个数 a,b,d,p，表示a和b之间有一条边，且其长度为d，花费为p。最后一行是两个数 s,t;起点s，终点t。n和m为0时输入结束。

(1<n<=1000, 0<m<100000, s != t)

**输出描述:**

输出一行有两个数， 最短距离及其花费。

**输入输出样例**

**输入样例#:**

3 2

1 2 5 6

2 3 4 5

1 3

0 0

**输出样例#:**

9 11

**题目来源**

**浙江大学机试题**

**1286 最短路径**

Time Limit: 1000 ms

Memory Limit: 256 mb

N个城市，标号从0到N-1，M条道路，第K条道路（K从0开始）的长度为2^K，求编号为0的城市到其他城市的最短距离

**输入输出格式**

**输入描述:**

第一行两个正整数N（2<=N<=100）M(M<=500),表示有N个城市，M条道路

接下来M行两个整数，表示相连的两个城市的编号

**输出描述:**

N-1行，表示0号城市到其他城市的最短路，如果无法到达，输出-1，数值太大的以MOD 100000 的结果输出。

**输入输出样例**

**输入样例#:**

4 4

1 2

2 3

1 3

0 1

**输出样例#:**

8

9

11

**题目来源**

**上海交通大学机试题**

**1224 I Wanna Go Home**

Time Limit: 1000 ms

Memory Limit: 256 mb

The country is facing a terrible civil war----cities in the country are divided into two parts supporting different leaders. As a merchant, Mr. M does not pay attention to politics but he actually knows the severe situation, and your task is to help him reach home as soon as possible. "For the sake of safety,", said Mr.M, "your route should contain at most 1 road which connects two cities of different camp." Would you please tell Mr. M at least how long will it take to reach his sweet home?

**输入输出格式**

**输入描述:**

The input contains multiple test cases.The first line of each case is an integer N (2<=N<=600), representing the number of cities in the country.The second line contains one integer M (0<=M<=10000), which is the number of roads.The following M lines are the information of the roads. Each line contains three integers A, B and T, which means the road between city A and city B will cost time T. T is in the range of [1,500].Next part contains N integers, which are either 1 or 2. The i-th integer shows the supporting leader of city i. To simplify the problem, we assume that Mr. M starts from city 1 and his target is city 2. City 1 always supports leader 1 while city 2 is at the same side of leader 2. Note that all roads are bidirectional and there is at most 1 road between two cities.Input is ended with a case of N=0.

**输出描述:**

For each test case, output one integer representing the minimum time to reach home.If it is impossible to reach home according to Mr. M's demands, output -1 instead.

**输入输出样例**

**输入样例#:**

2

1

1 2 100

1 2

3

3

1 2 100

1 3 40

2 3 50

1 2 1

5

5

3 1 200

5 3 150

2 5 160

4 3 170

4 2 170

1 2 2 2 1

0

**输出样例#:**

100

90

540

**题目来源**

**北京大学机考题**