

# 107 Data Structure Homework 2

# Path Selection Problem

- Input : read file (input.txt)
  - Send good with weight  $x$  from city A to city K
  - Give several paths and throughput in each city (city name no more than 10 chars)
  - 0 : Have the next data, -1 : End
  - **Output order in ASCII** (answer may be not unique or no answer)
- Problem
  - Print the map (30%)
  - Print all the paths from city A to city K (30%)
  - Print all the best (throughput) paths from city A to city B (30%)
  - Print all the paths has circle (30%)

# Input range

- city name : no more than 10 chars
  - throughput in each city ( $\geq 0$ ) : positive integer, not exceeding the integer type
  - cargo weight ( $> 0$ ) : positive integer, not exceeding the integer type
- 

城市到城市之間的路徑，如果該路徑沒重複經過同一城市，才能算第二題或是第三題的答案，例如：城市A到城市H

- A,B,C,K,W,E,C,D,H (X)
- A,B,C,F,E,K,I,O,U,H (O)

# Path Selection Problem

From city A to city K

The weight of the goods is 7 units

From city A through city C and city E to city H

The number behind the city name

From city A to city B represents throughput

The weight of the goods is 4 units

0 : Have the next data

-1 : End

A, K, 7

A, 7→C, 2→E, 5→H, 7

A, 7→J, 10→C, 2→F, 6

I, 4→E, 5→K, 12→D, 6

J, 10→K, 12→G, 4→L, 3

D, 6→G, 4→H, 7→L, 3→I, 4

B, 15→E, 5

0

A, B, 4

A, 7→C, 2→E, 5→H, 7

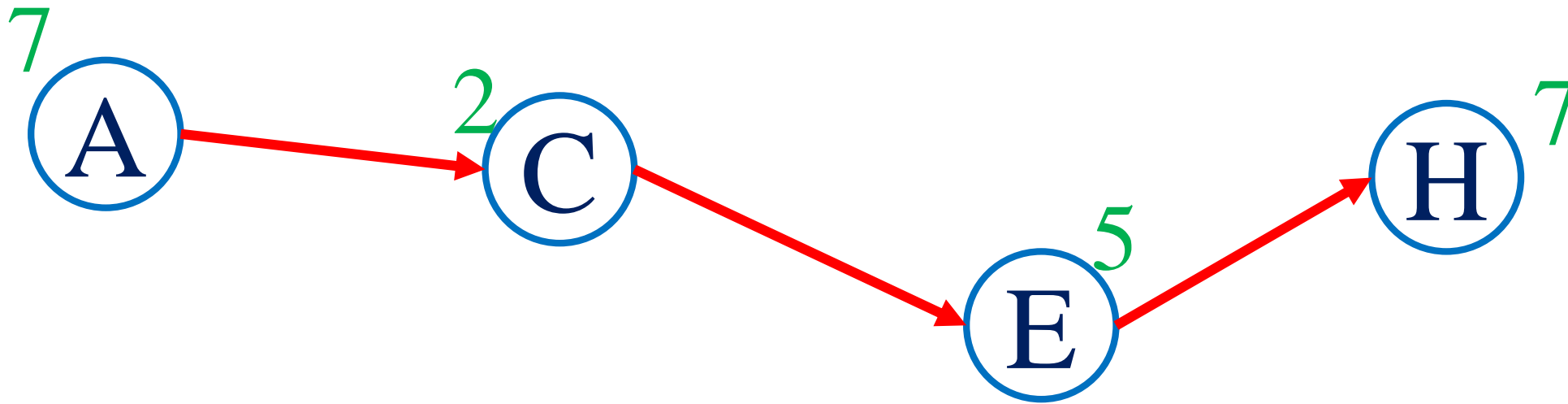
A, 7→J, 10→C, 2→F, 6

I, 4→E, 5→K, 12→D, 6

J, 10→K, 12→G, 4→L, 3

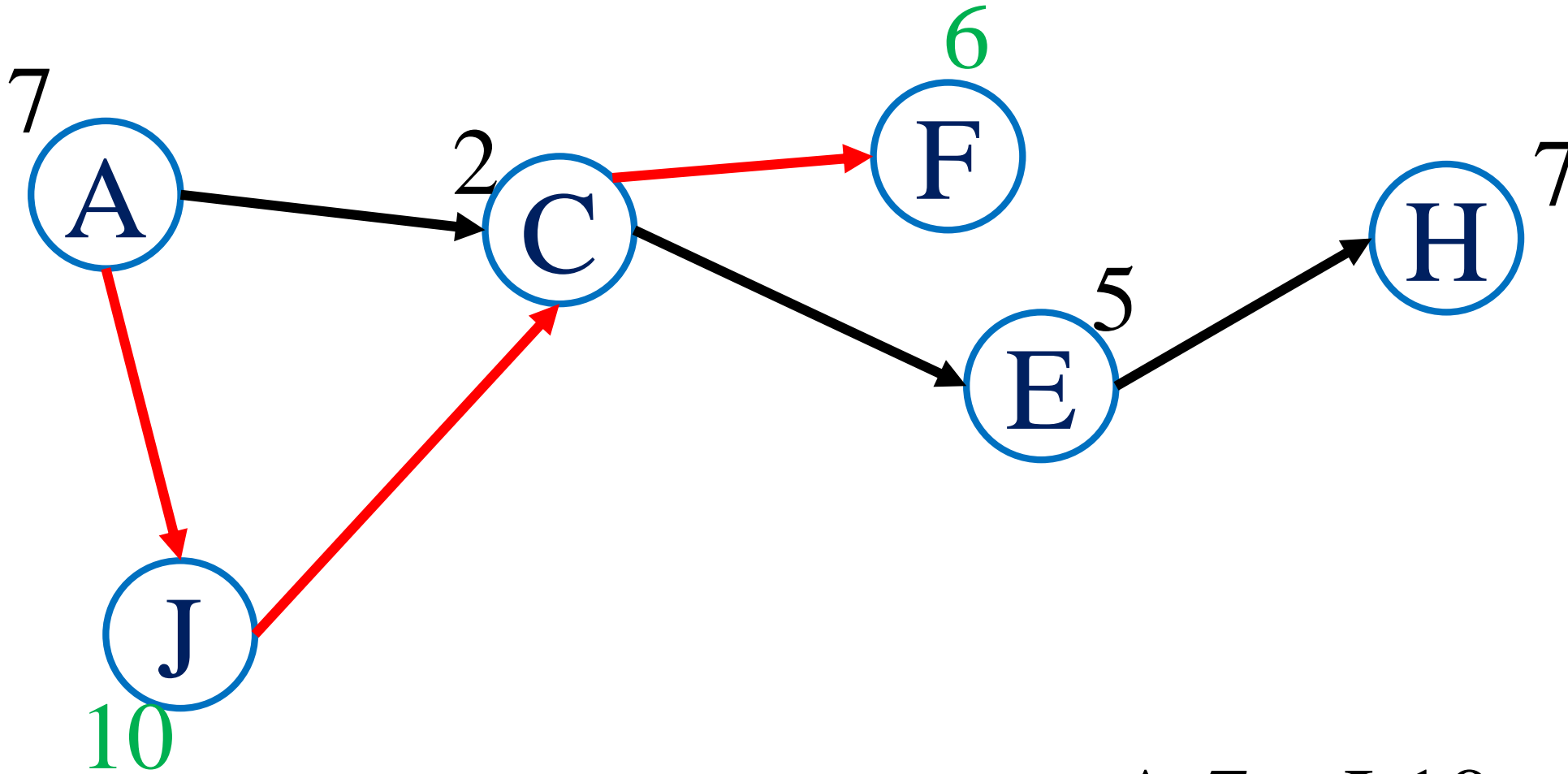
-1

# Path Selection Problem



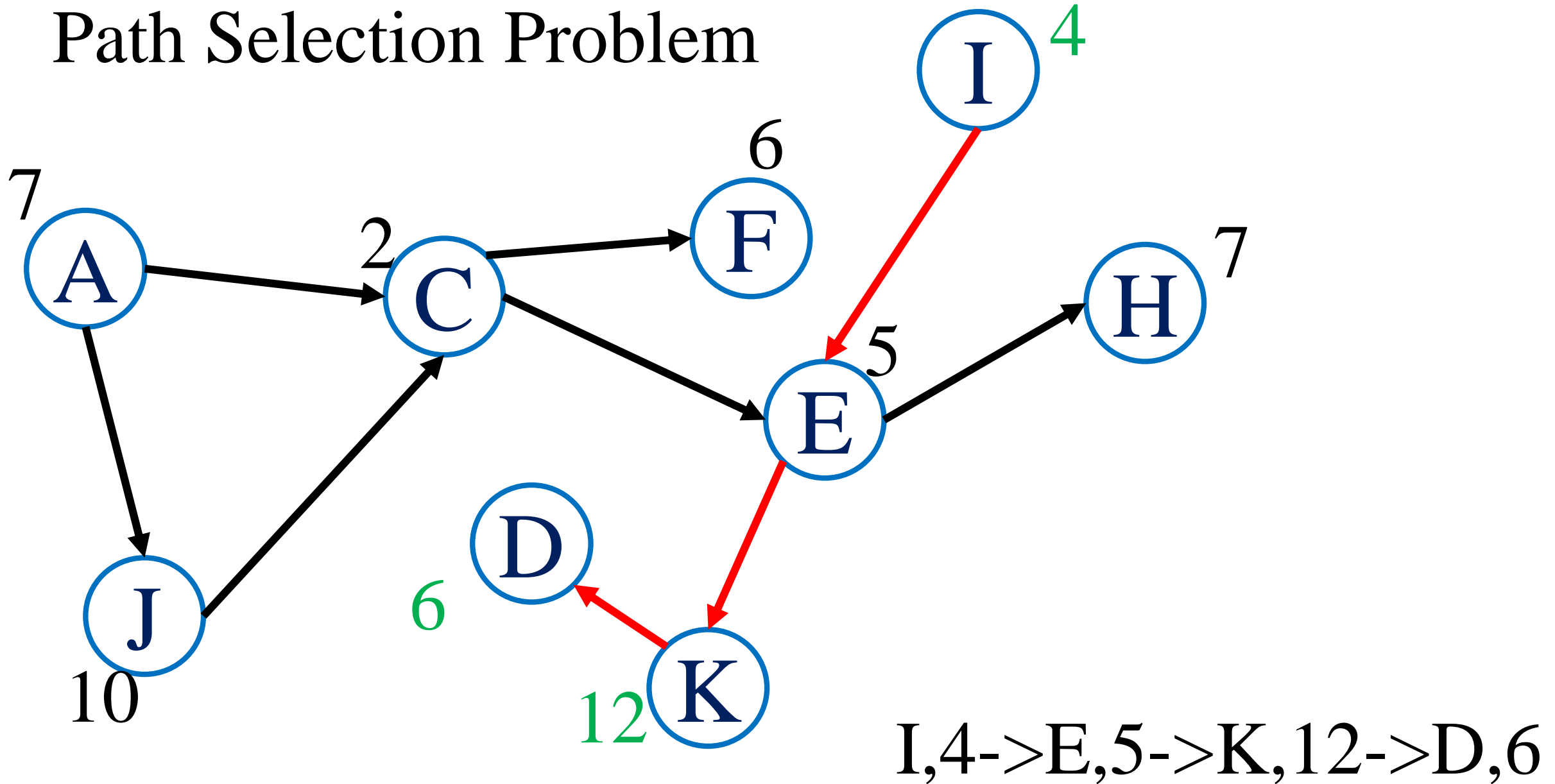
$A, 7 \rightarrow C, 2 \rightarrow E, 5 \rightarrow H, 7$

# Path Selection Problem

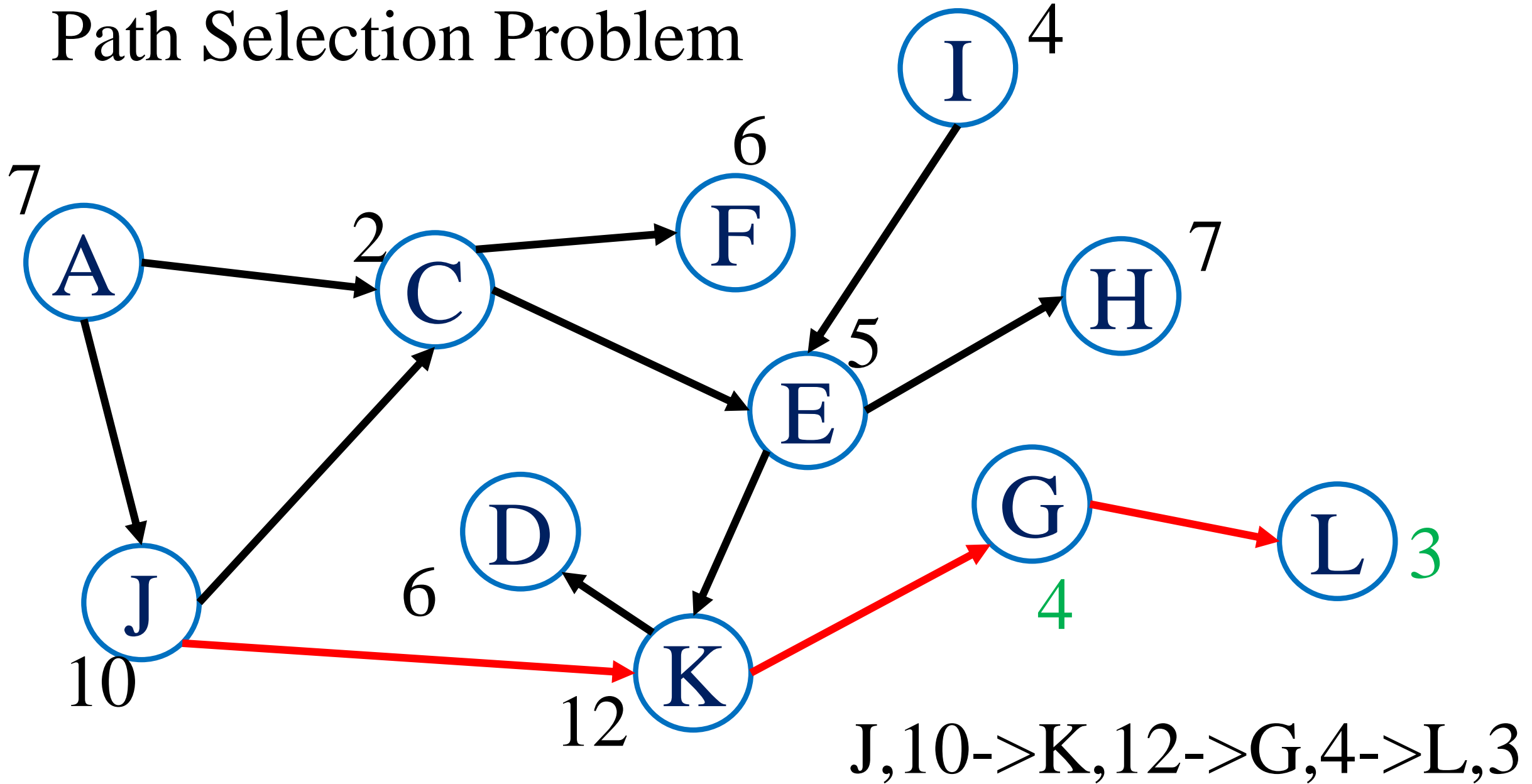


A,7->J,10->C,2->F,6

# Path Selection Problem

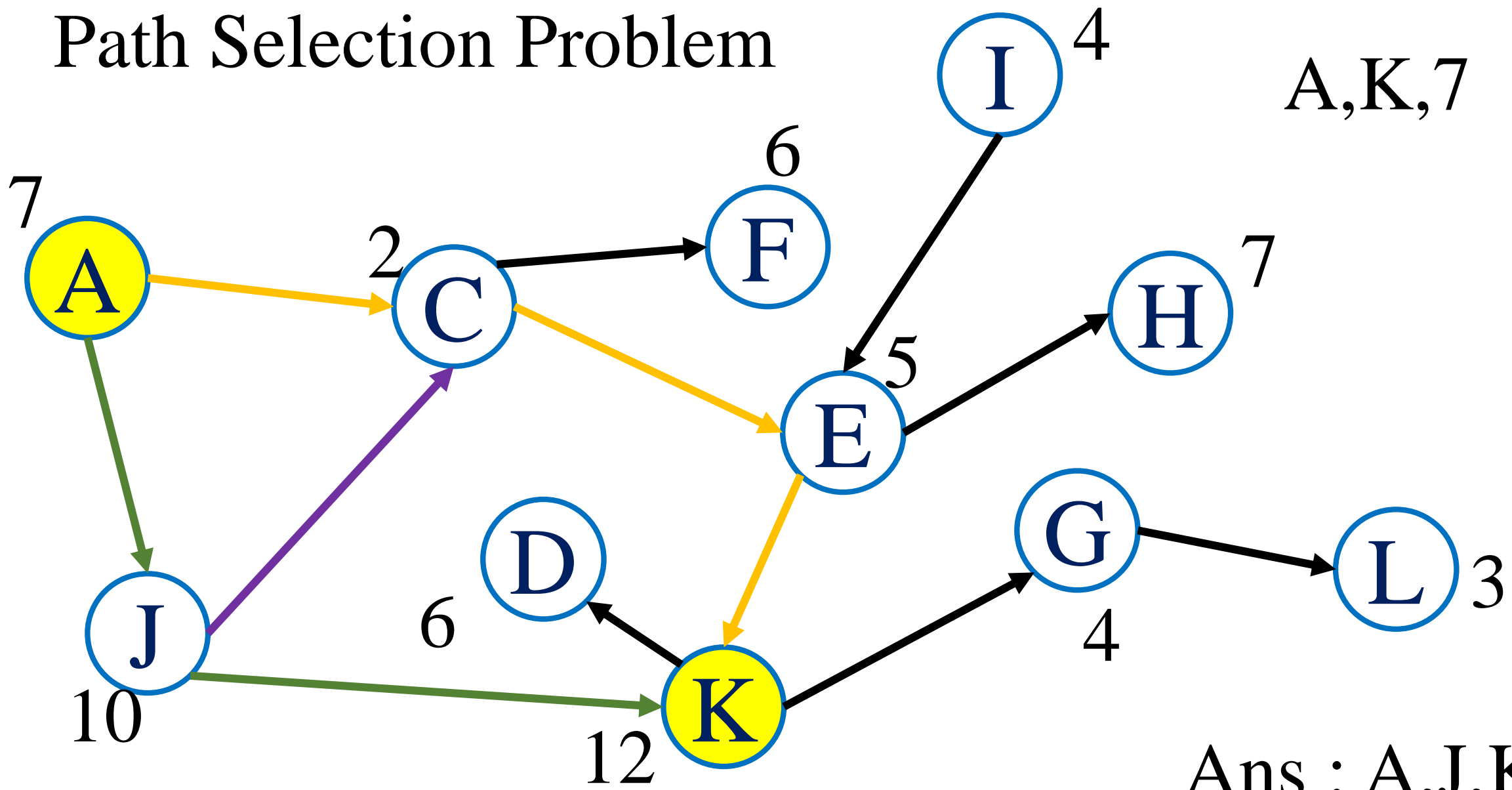


# Path Selection Problem

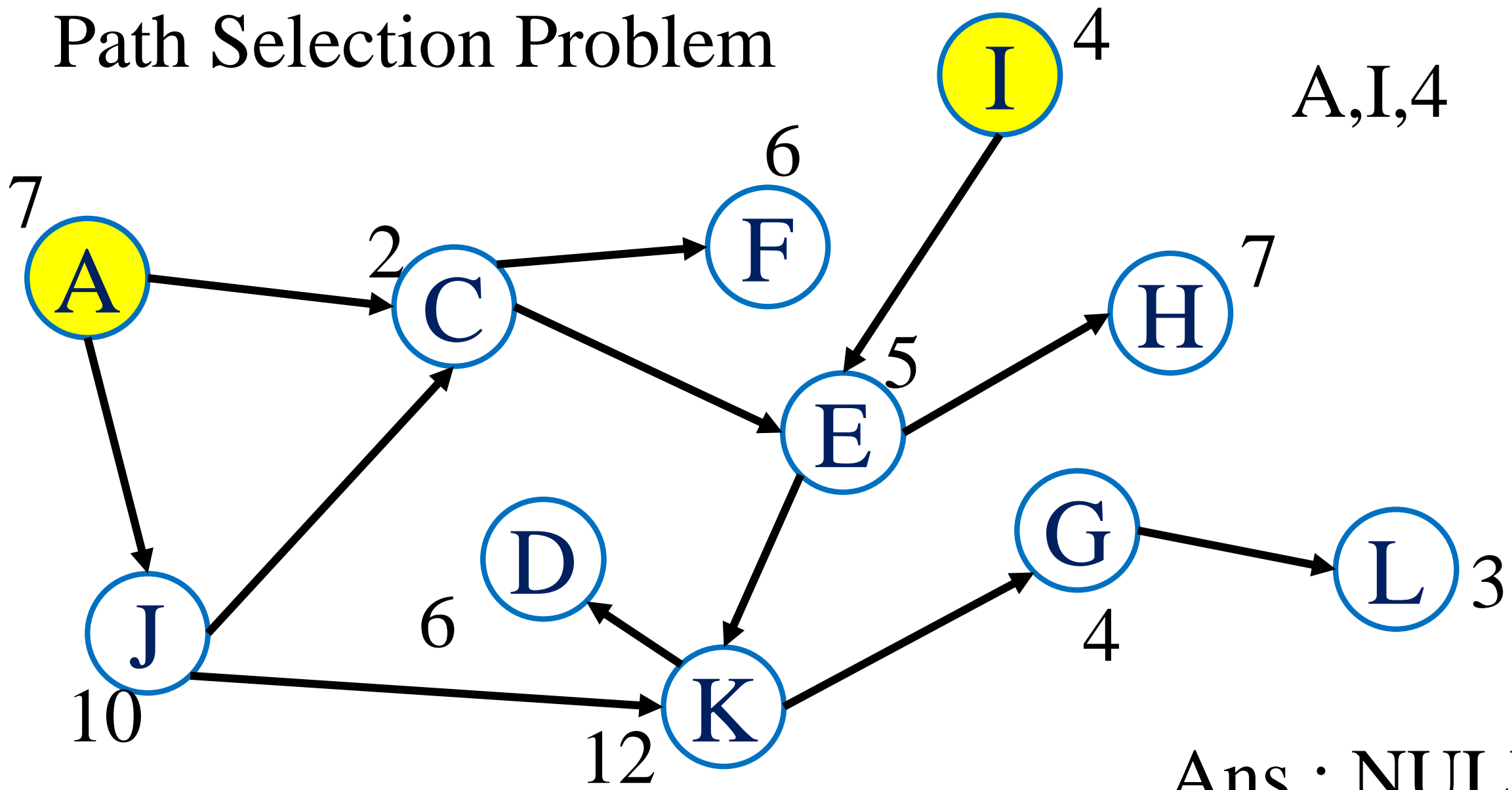




# Path Selection Problem



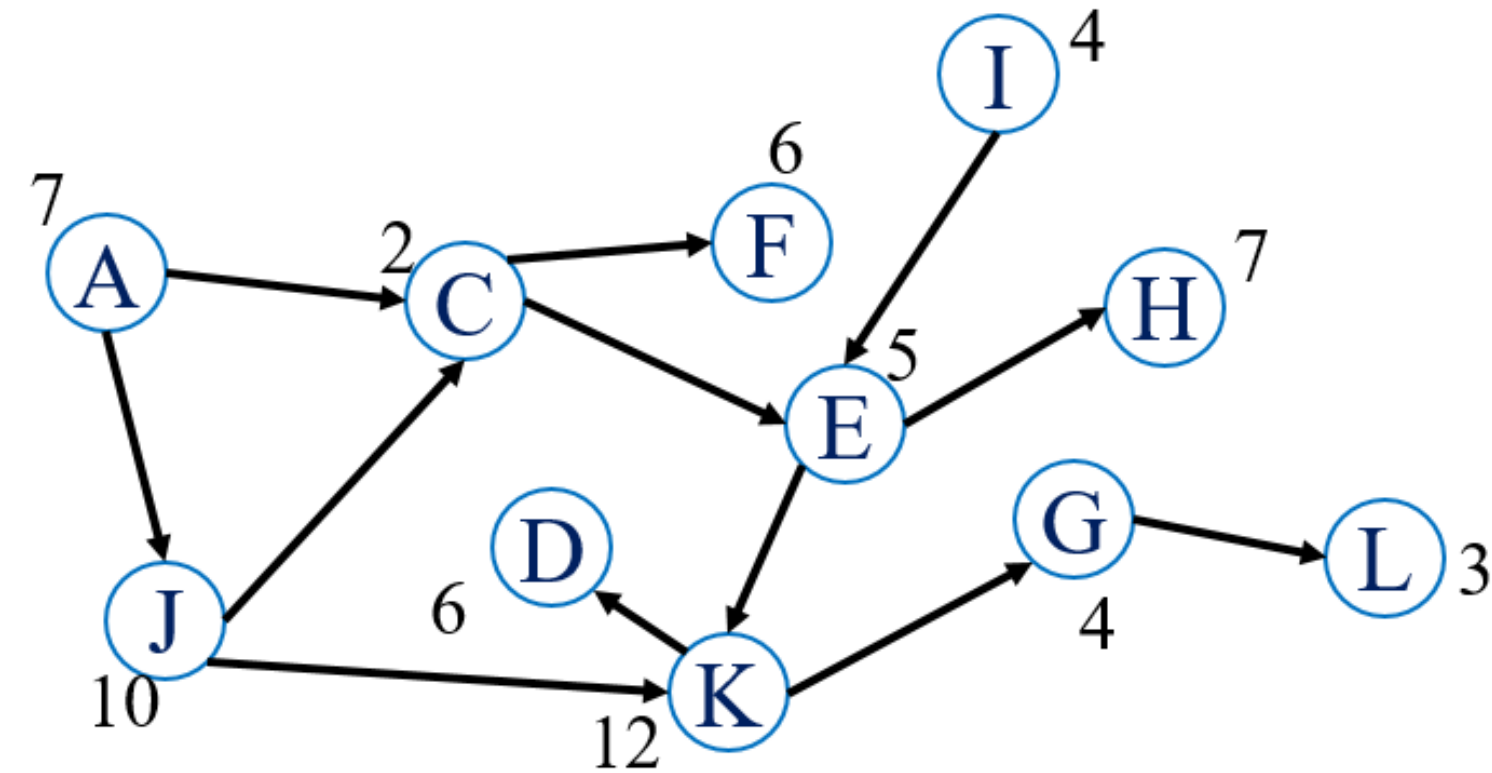
# Path Selection Problem



A,I,4

Ans : NULL

# Path Selection Problem



Map :

A,C  
A,J  
C,E  
C,F  
E,H  
E,K  
G,L  
I,E  
J,C  
J,K  
K,D  
K,G

All the paths from city A to city K :

A,C,E,K  
A,J,C,E,K  
A,J,K

All best paths from city A to city K :

A,J,K

All the paths has circle :

NULL

# Path Selection Problem

read file (input.txt)

```
FILE *fp;  
char ch;  
if((fp=fopen("input.txt","r"))==NULL){  
    printf("open file error!!\n");  
}
```

# Path Selection Problem

- Send code
- Only accepted C
- No score if you don't use linked list
- Homework upload to **iLearning** platform
- **Deadline : 2018.11.05(一) 23:59**
- 檔名 : main.c
- 測資不公開，截止日期前可以一直重新上傳
- 作業Deadline後才會改，分數直接上**iLearning**看
- **抄襲嚴懲，請打上註解**
- **交不合以上規定的作業，將直接不計分(讀檔和編譯問題除外)**