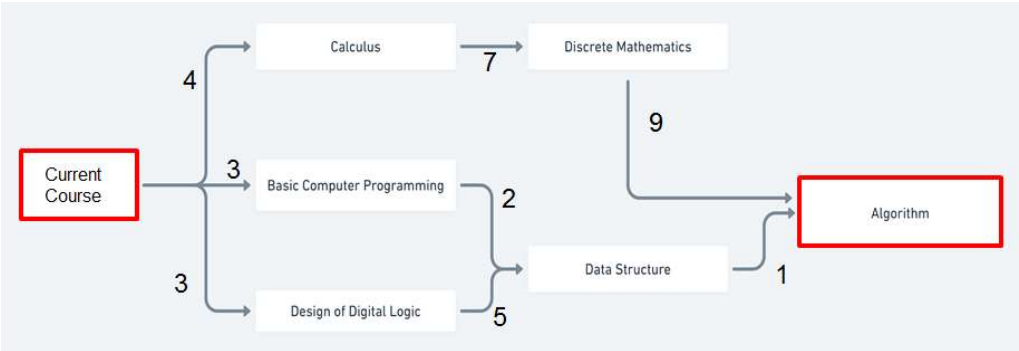


12795 - 電機資結 2020 HW4 Min Cost to take the Course

Status (/status/?pid=12795) | Limits [Submit \(/users/submit/12795\)](/users/submit/12795)

Description

- The different orders one takes courses affect their efforts of taking the following courses.
- As shown in the following figure, for example, if one takes Basic Computer Programming in advance, the extra efforts they need to take Data Structures can be lowered.
- Please find the path with the minimal effort need to spend to take the desired course, e.g., Algorithm.



Input

5 5
A
E
A B 3
A C 6
B D 4
C E 5
D E 1

← The number of courses and number of course dependency pairs.
← The course one is taking now (i.e., the starting point)
← The desired course (i.e., the destination)
← Dependency pair and the effort of taking the second course

Output

8 ↵
A B D E

← Total efforts
← The path

[Download](#) ([data:text/plain;charset=utf-8,%5B%0A%0D%0A%0C%06%0D%0AB](#))

55
A E
A B 3
A C 6
B D 4
C E 5
D E 1

Download (data:text/plain;charset=utf-8,8%0D%0AA%20B%20D%20E)

8
A B D E

Discuss