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Dijkstra

无向图

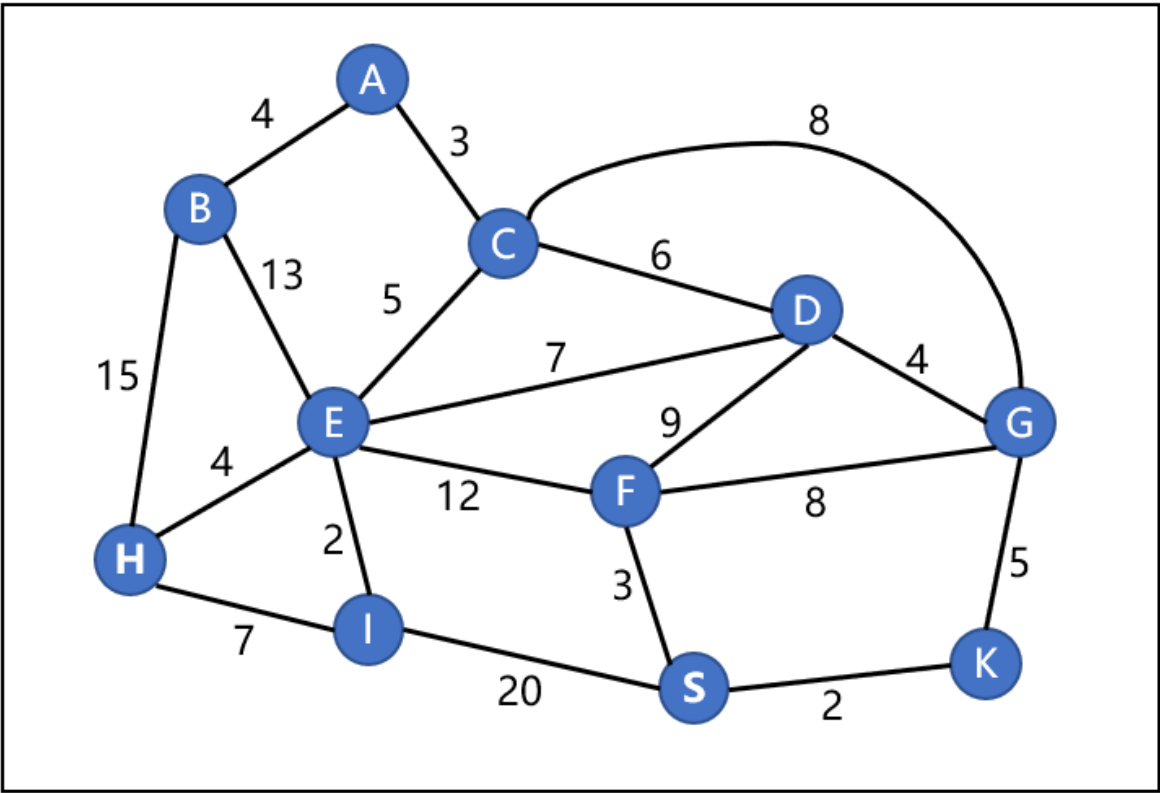
有向图

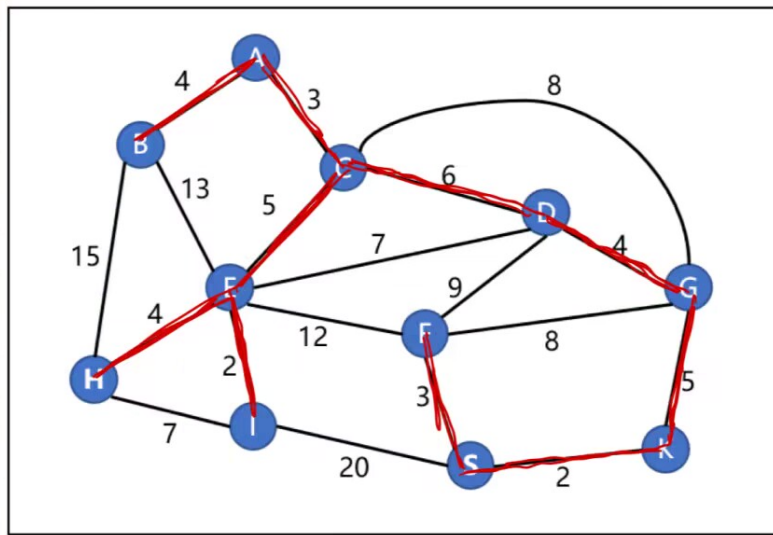
KMP

## Dijkstra

### 无向图

图 1 是一幅带权无向图，请写出用 Dijkstra 算法得到 **S**点 到其他各点最短路径的过程，并画出最终的最短路径树。



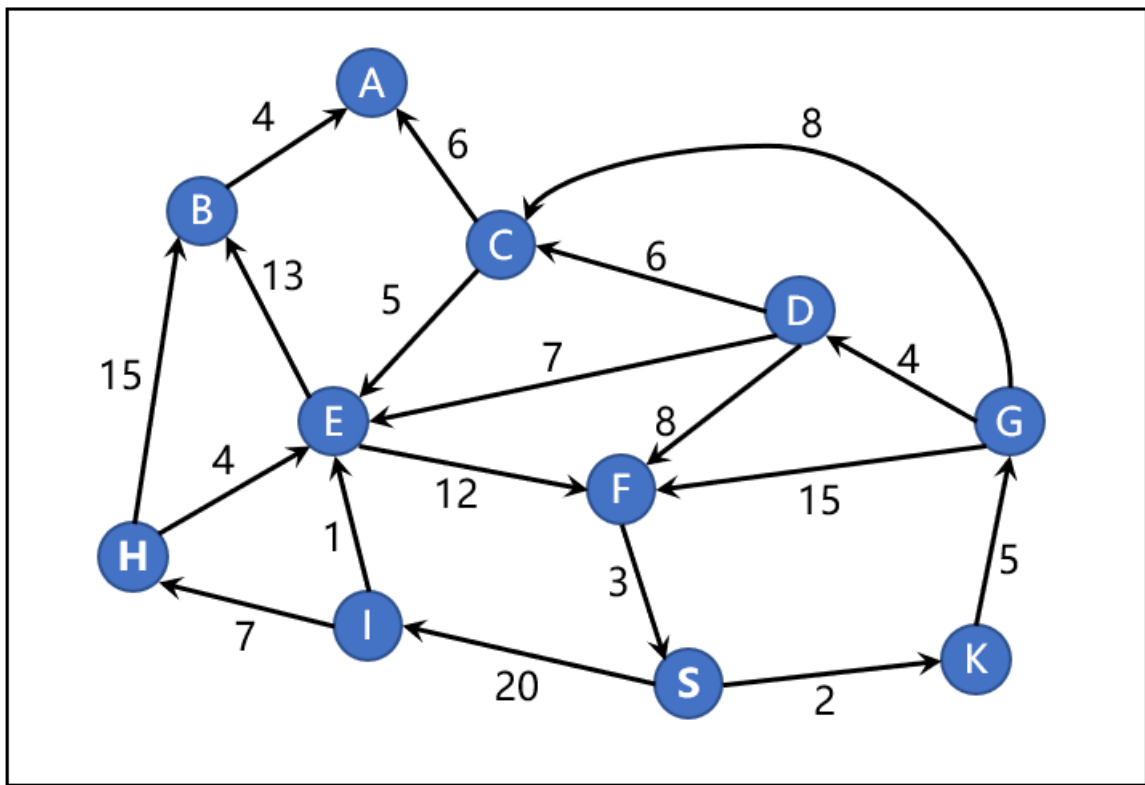


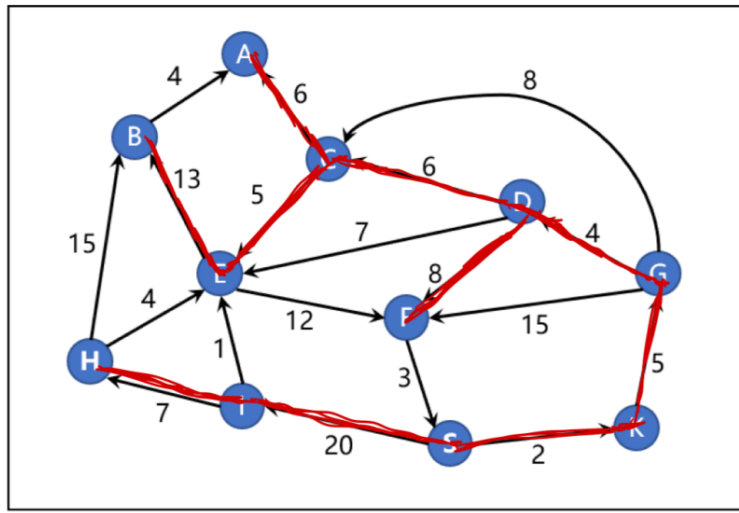
- ①  $\{20, 7, 2\}_{\min} = 2$   $S+K$
- ②  $\{20, 3, 5\}_{\min} = 3$   $S+K+F$
- ③  $\{20, 12, 9, 8, 5\}_{\min} = 5$   $S+K+F+G$
- ④  $\{20, 12, 7, 4, 8\}_{\min} = 4$   $S+K+F+G+D$
- ⑤  $\{20, 12, 7, 6, 8\}_{\min} = 6$   $S+K+F+G+D+C$
- ⑥  $\{20, 12, 5, 3, 7\}_{\min} = 3$   $S+K+F+G+D+C+A$
- ⑦  $\{20, 12, 7, 5, 4\}_{\min} = 4$   $S+K+F+G+D+C+A+B$
- ⑧  $\{20, 12, 7, 5, 13, 15\}_{\min} = 5$   $S+K+F+G+D+C+A+B+E$
- ⑨  $\{20, 2, 4, 15\}_{\min} = 2$   $S+K+F+G+D+C+A+B+E+I$
- ⑩  $\{15, 4, 7\}_{\min} = 4$   $S+K+F+G+D+C+A+B+E+I+H$

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## 有向图

图 2 是一幅带权有向图，请写出用 Dijkstra 算法得到 S 点到其他各点最短路径的过程，并画出最终的最短路径树。





- ①  $\{20, 2\}_{\min} = 2$  S+K
- ②  $\{20, 5\}_{\min} = 5$  S+K+G
- ③  $\{20, 15, 4, 8\}_{\min} = 4$  S+K+G+D
- ④  $\{20, 15, 8, 7, 6, 8\}_{\min} = 6$  S+K+G+D+C
- ⑤  $\{20, 15, 8, 7, 5, 6\}_{\min} = 5$  S+K+G+D+C+E
- ⑥  $\{20, 15, 8, 12, 13, 6\}_{\min} = 6$  S+K+G+D+C+E+A
- ⑦  $\{20, 15, 8, 12, 13\}_{\min} = 8$  S+K+G+D+C+E+A+F
- ⑧  $\{20, 13\}_{\min} = 13$  S+K+G+D+C+E+A+F+B
- ⑨  $\{20\}_{\min} = 20$  S+K+G+D+C+E+A+F+B+I
- ⑩  $\{7\}_{\min} = 7$  S+K+G+D+C+E+A+F+B+I+H

## KMP

请给出字符串 "ABCDAABCDABCG" 对应的next表。

A	B	C	D	A	A	B	C	D	A	B	C	G
-1	0	0	0	0	1	1	2	3	4	5	2	3