CS 542 Final Project

Department of Computer Science
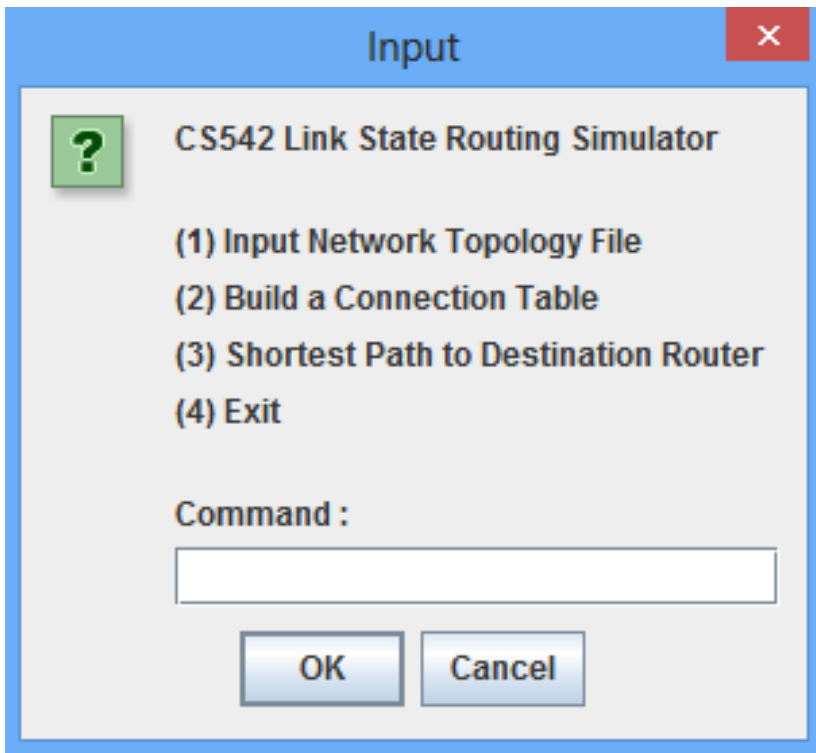Wooseok Kim

Link-state routing protocol

- One of the two main classes of routing protocols used in packet switching networks for computer communications

- Performed by every switching node in the network

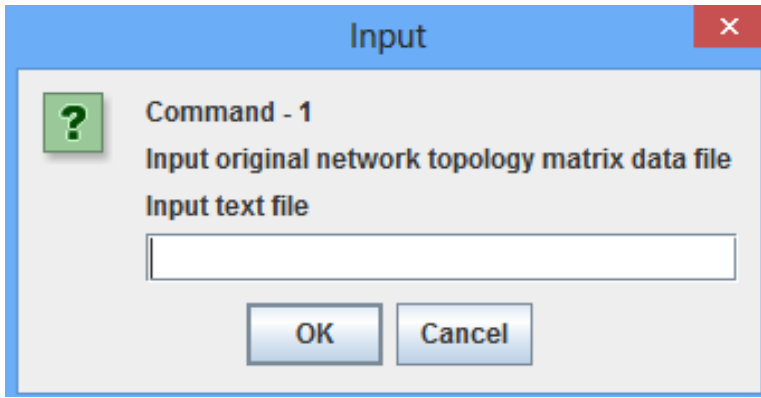- Every node constructs a map of the connectivity to the network

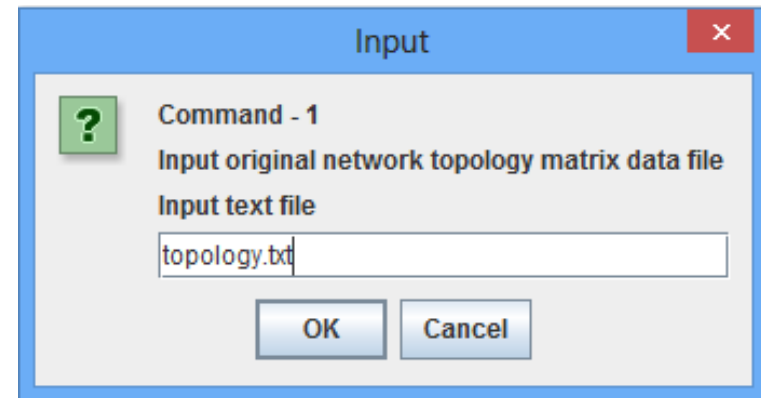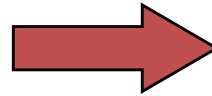# How to run project

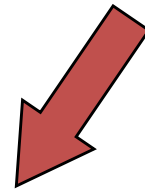# How to run project

After compiling a program,
the user can write number from 1 to 4
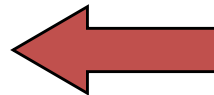
How to run project
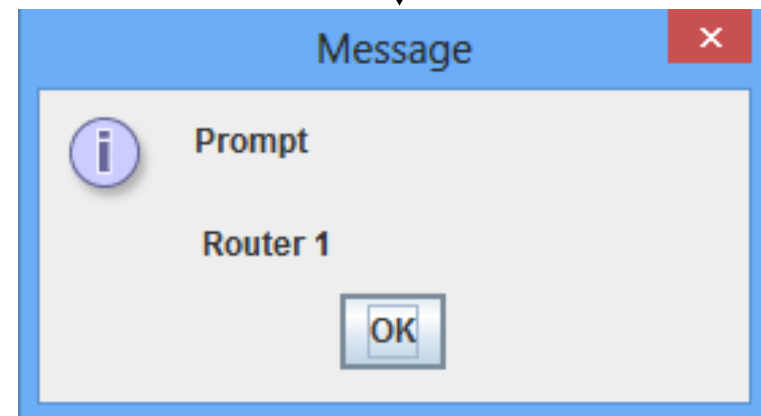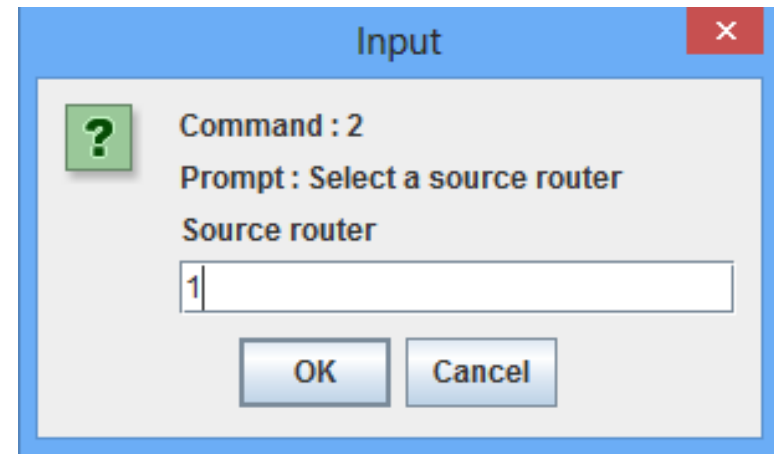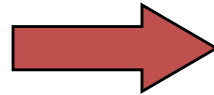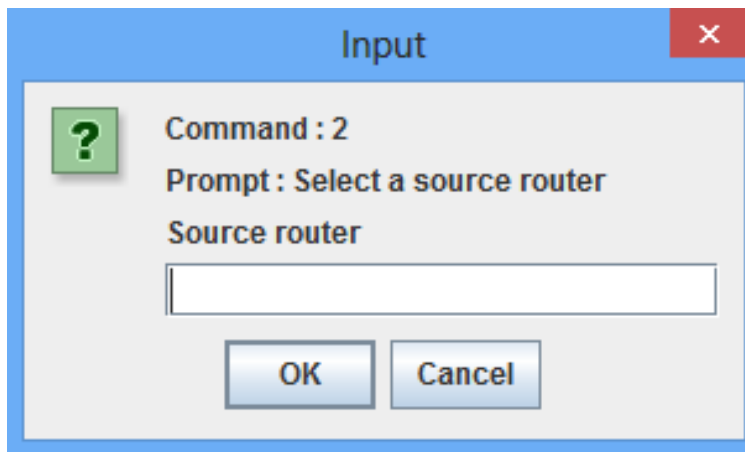

If the user choose number 1

Write text file name

```
Review original topology matrix:
0 2 5 1 -1
2 0 8 7 9
5 8 0 -1 4
1 7 -1 0 2
-1 9 4 2 0
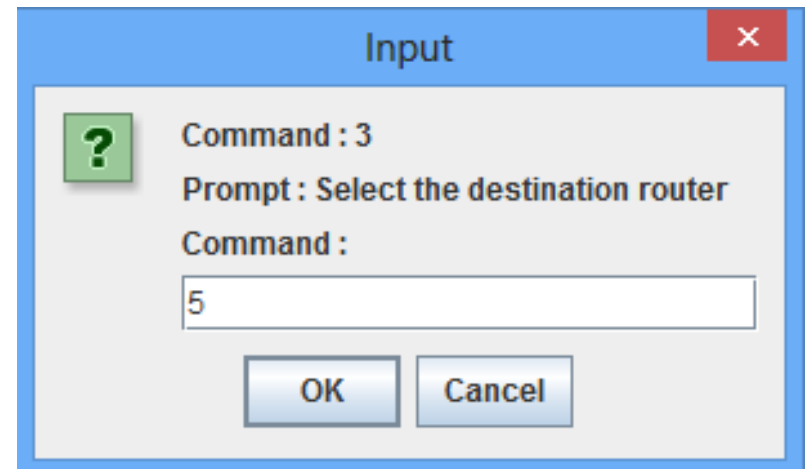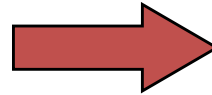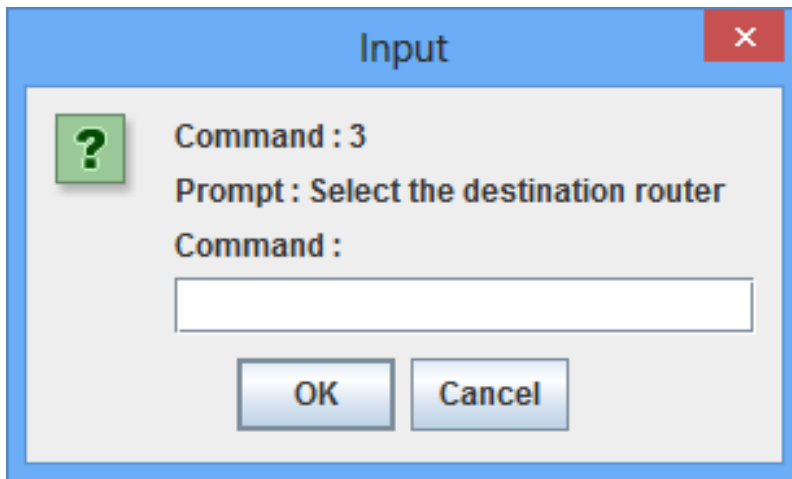```

The user can find original matrix

# How to run project

Input

? Command : 2
Prompt : Select a source router
Source router

[                    ]

OK    Cancel

If the user choose number 2

Input

? Command : 2
Prompt : Select a source router
Source router

[1                   ]

OK    Cancel

Message

ⓘ Prompt

Router 1

OK

```
Destination   Interface
==
   1   -
   2   2
   3   3
   4   4
   5   4
```
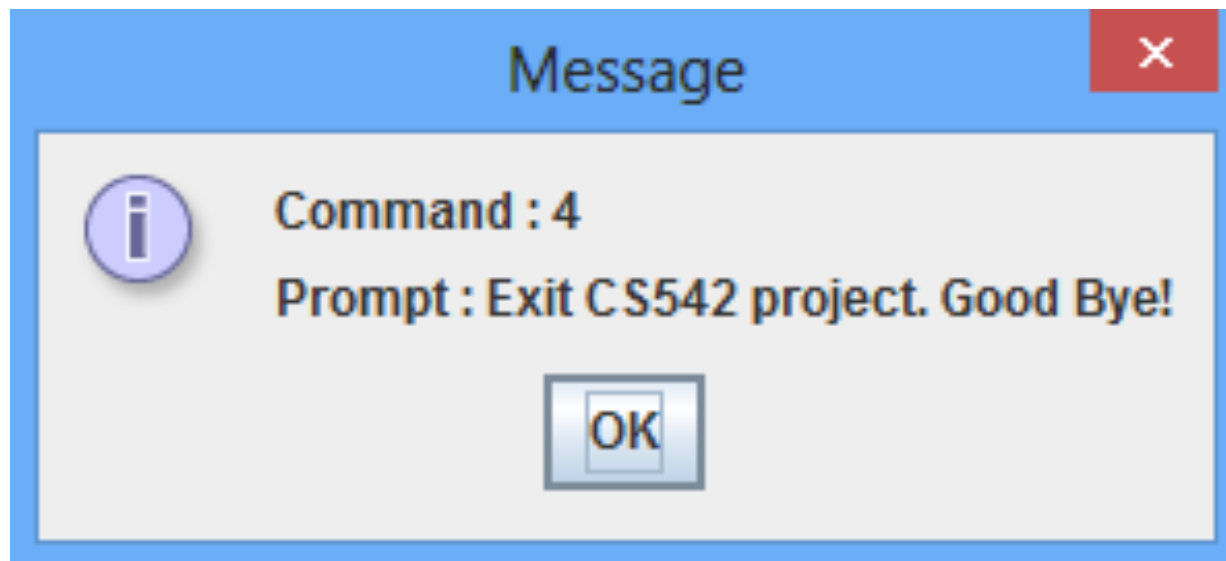
# How to run project



If the user choose number 3

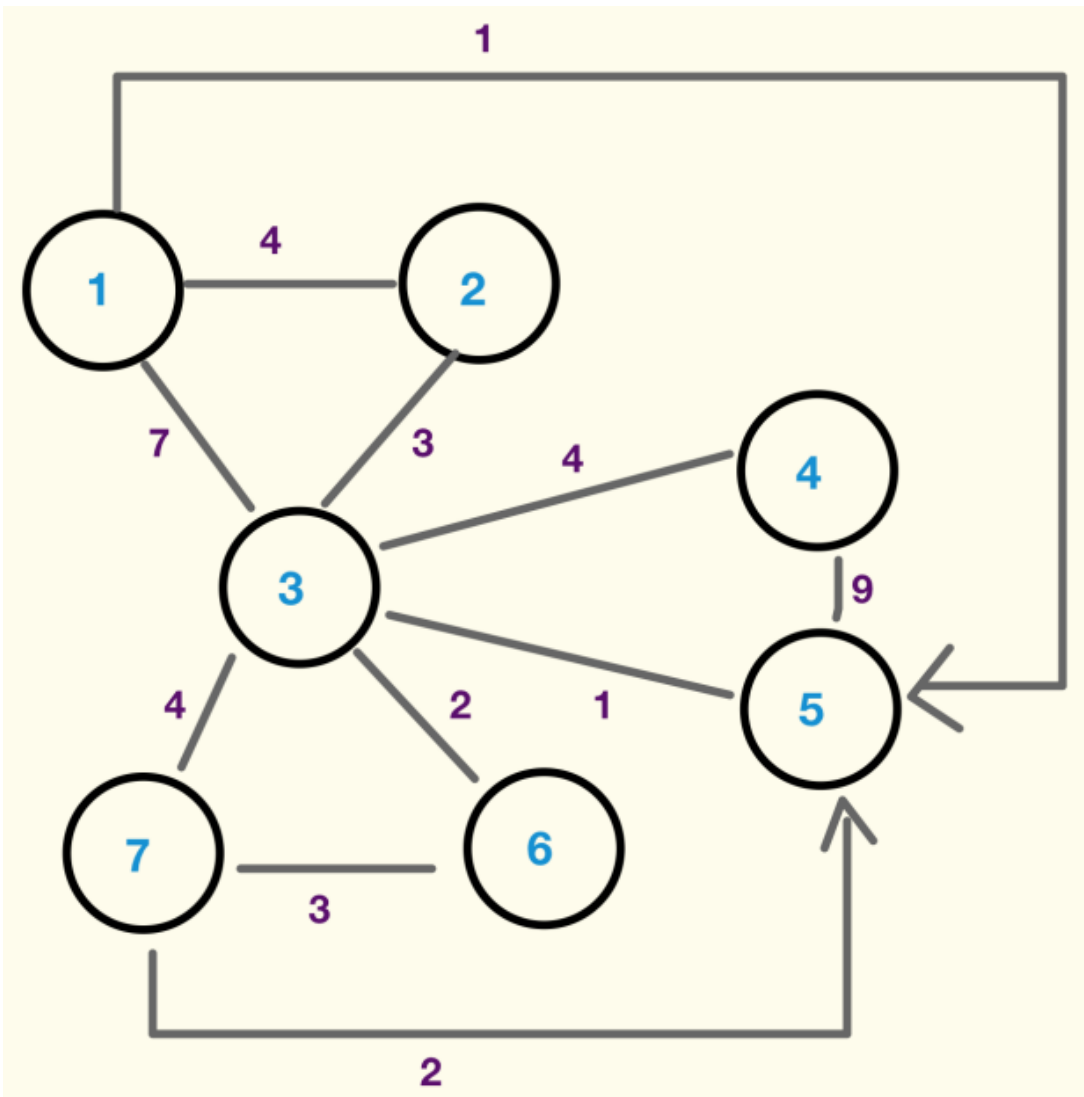Prompt : The shortest path from router 1 to router 5 is 1  4  5,  the total cost is 3

# How to run project
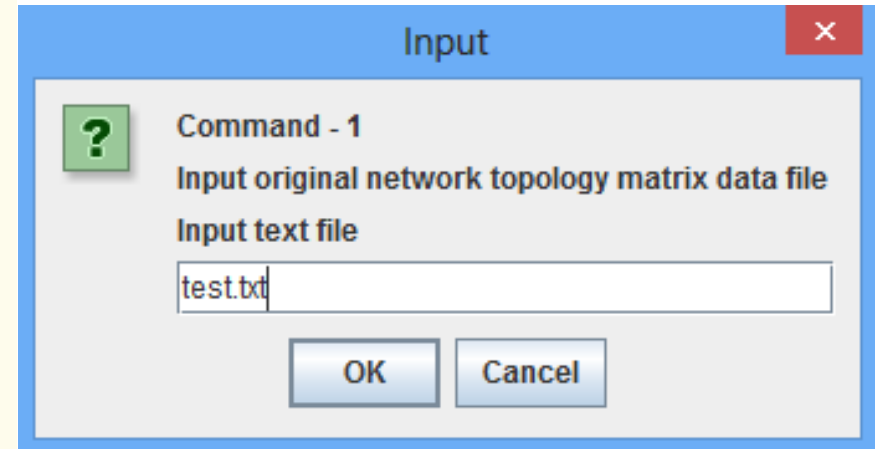


If the user choose number 4
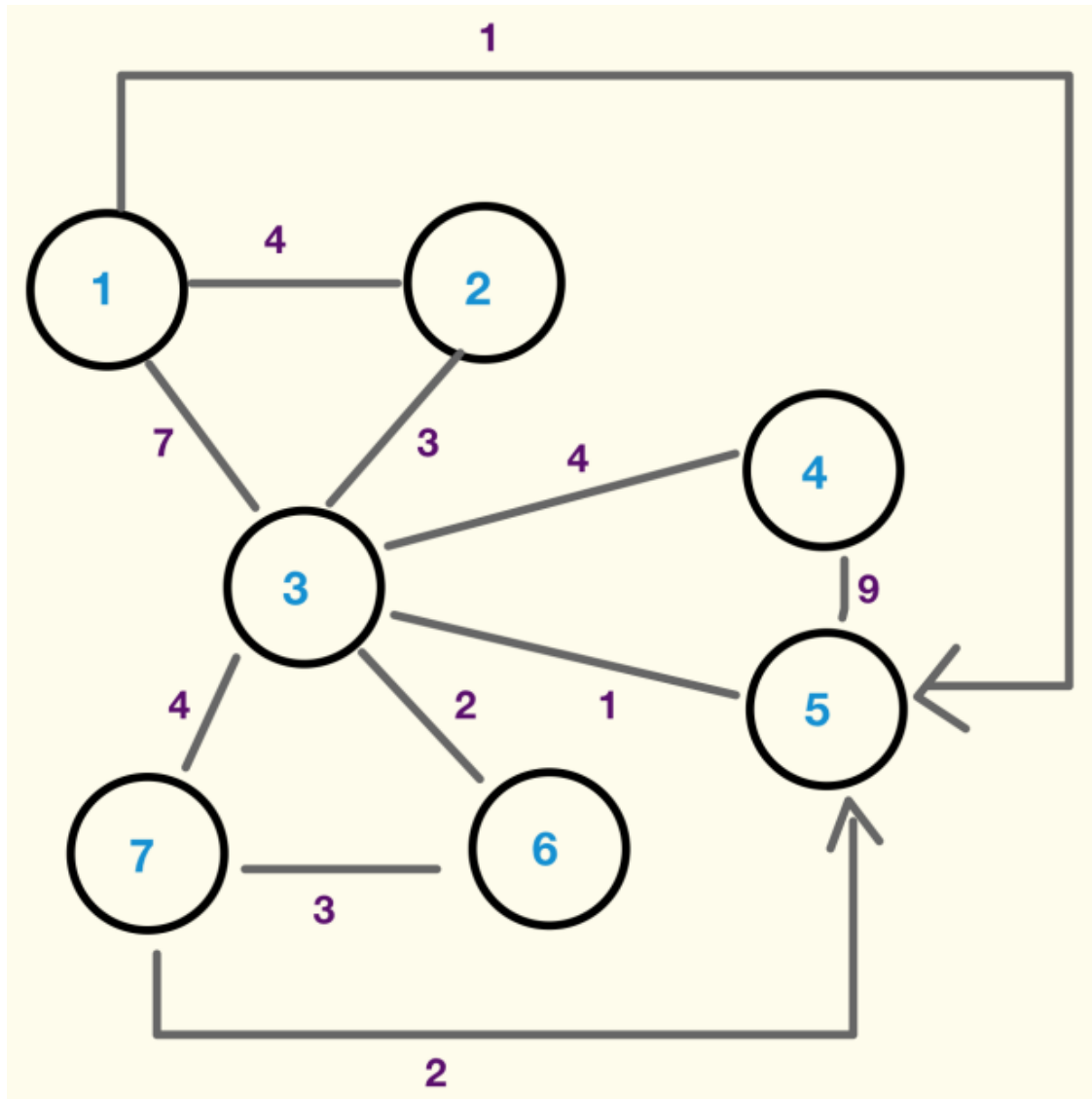
# Output Test

# Output Test

# Output Test



Input

Command - 1
Input original network topology matrix data file
Input text file
test.txt

OK    Cancel

Review original topology matrix:
0 4 7 -1 1 -1 -1
4 0 3 -1 -1 -1 -1
7 3 0 4 1 2 4
-1 -1 4 0 9 -1 -1
-1 -1 1 9 0 -1 -1
-1 -1 2 -1 -1 0 3
-1 -1 4 -1 2 3 0

# Output Test
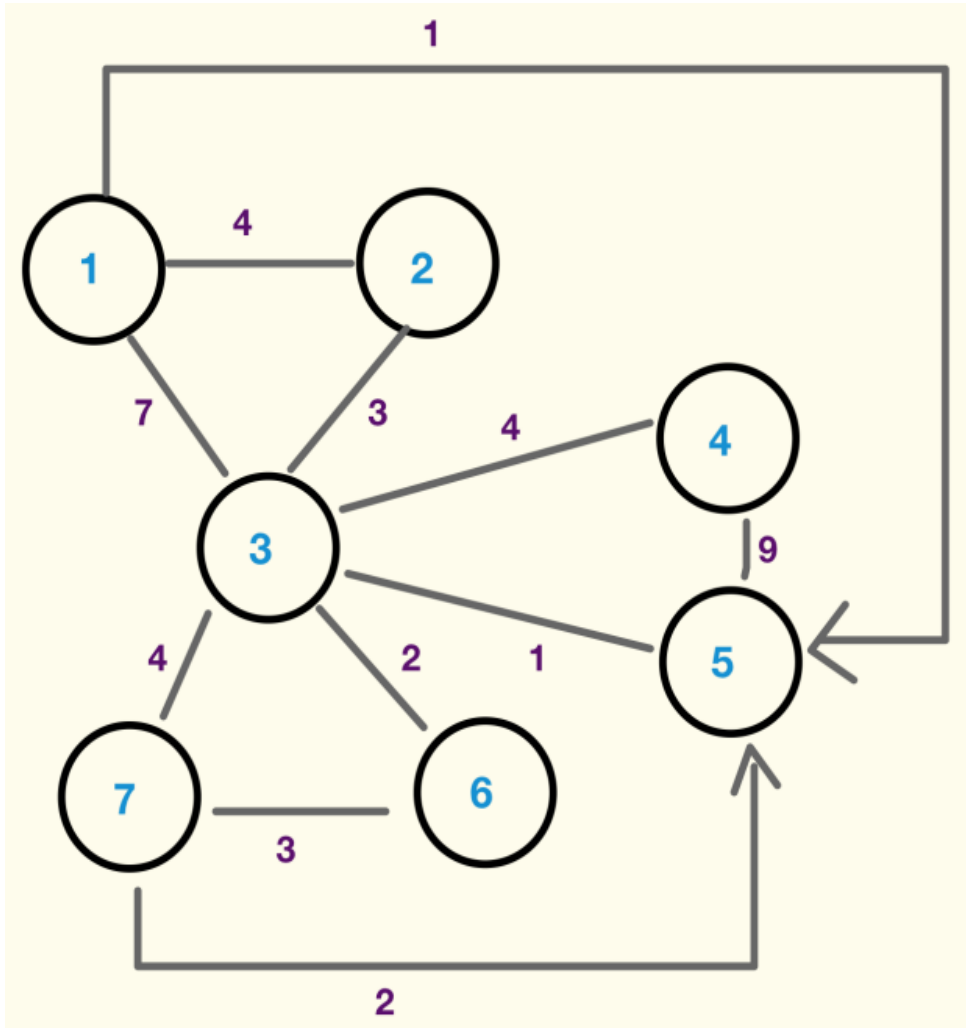
# Output Test



Prompt : The shortest path from router 7 to router 4 is 7  5  3  4,  the total cost is 7

# Reference

- Foundations of Algorithms using C++ Pseudocode, 3rd edition
- Richard Neapolitan and Kumarss
- Jones and Bartlett Publishers © 2004

- Wikipedia : Link-state routing protocol