PROLOGUE

FOR ALL ASSIGNMENTS

- **Attach a *prologue* for all assignments.**
- **Use sample *prologue* sheet in the course material, customize it for every assignment.**
- ***Prologue* makes it easy to separate assignments for grading purpose.**

EXERCISE 20

PROBLEM

- Consider the given weighted graph to enter the input distance from node to node.
- Read the weightage input by prompting the user with from node, to node and distance into a weight matrix.
- Write a function to find the minimum spanning tree connecting all nodes in the graph to root.
- You can use the Prim's algorithm discussed in the chapters.
- Consider node 0 as the root to find the minimum spanning tree.
- In the output, compute the minimum distance of each node in the graph to root. Also show the closest node from each node except the root.

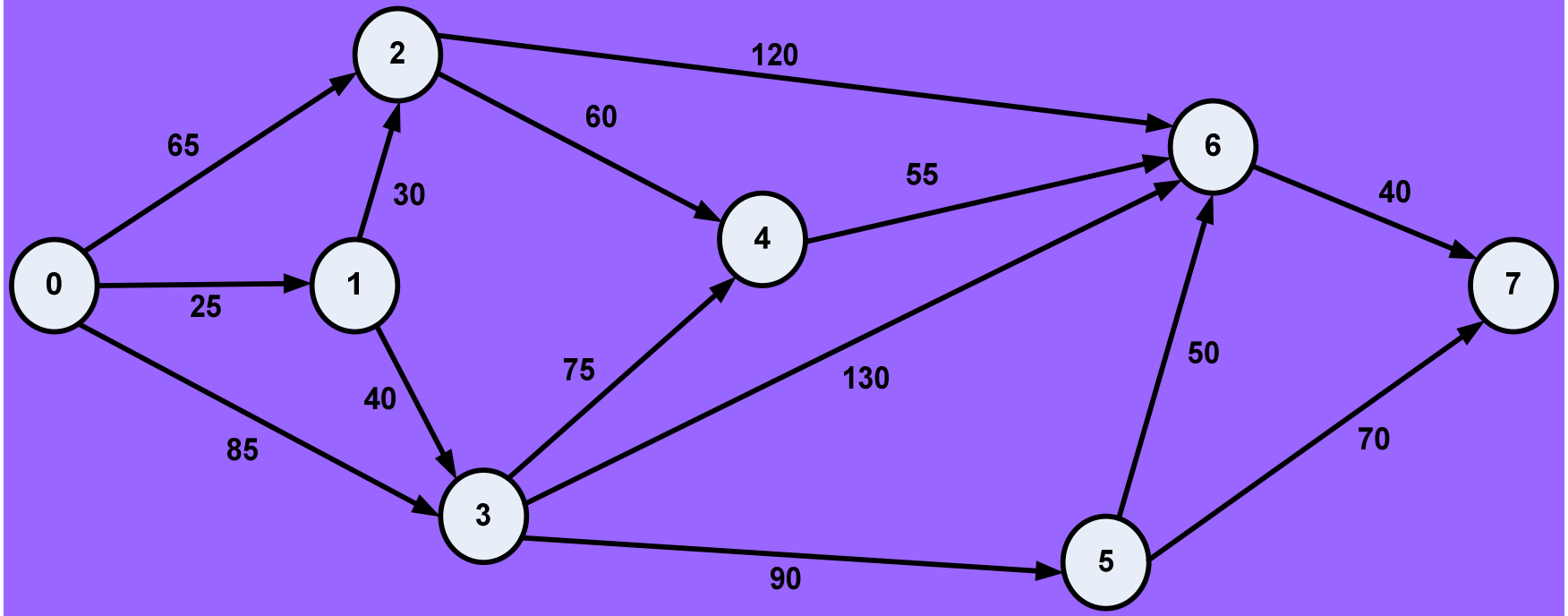
DELIVERABLES

Write the prolog and fill up all information for this exercise as given in the sample. Submit the source code, input and the output files. The program is expected to be well commented. Place your program as soft copy on assigned shared drive for students of this course.

DUE DATES

Assignments are due on the following week after completing the chapter discussion.

Graph



Weightage

0 → 1 : 25	0 → 2 : 65	0 → 3 : 85	1 → 2 : 30
1 → 3 : 40	2 → 4 : 60	2 → 6 : 120	3 → 4 : 75
3 → 5 : 90	3 → 6 : 130	4 → 6 : 55	5 → 6 : 50
5 → 7 : 70		6 → 7 : 40	