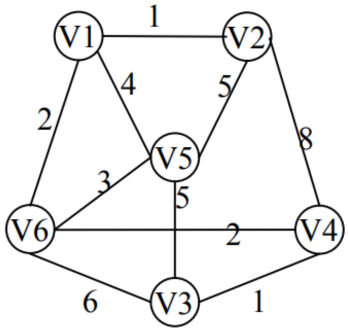
Project #1: (programming) – when we finish the dynamic programming discussion, please turn in your program (for project-1) within two weeks (i.e., by 10/14). Please indicate who are in the same group. A group just needs to turn in one. However, this one may be a little simpler, so welcome to exercise it by yourself even for a joint work.

1. Dynamic Programming:

Please use C++/C or python to write a dynamic programming program for travelling salesman problem (TSP) for HW-4.



For input format, we need to enter a graph. Let’s use the following simple description:

```
# comment (if line starts with “#”, then it is a comment)
# edgeIndex  edgeWeight  nameOfVertexU  nameOfVertexV

e1  1  v1 v2
e2  4  v1 v5
e3  5  v2 v4
e4  2  v1 v6
e5  3  v6 v5
e6  2  v6 v4
e7  6  v6 v3
e8  1  v3  v4
e9  5  v5  v3
e10 8  v4 v2
```

Welcome to run your program using the graph shown in ref. book page 58-64 (This dynamic programming approach for TSP will now be illustrated for the example graph of Figure 5.3 where the choice v_s = A has been made) Please see page-64 of the book (pdf page-76).) And welcome to create your input file.

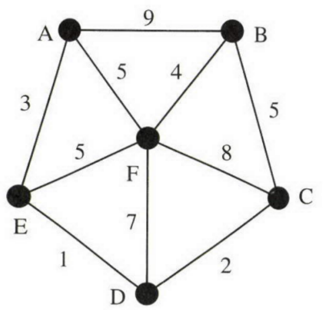


Figure 5.3 An example traveling salesman problem instance.

About program submission, please turn in

1) source codes, makefile,
   a. for python, we will run your codes. If some utility libraries are needed, please indicate them in your readme file.
2) executable binaries (for C++/C) with naming, such as “studentID_proj1.”
3) a text readme file, describing how to build C/C++ and how to run your programs.
   a. For python, please also include a readme to show how to your codes.
4) input data (please see the input format defined above) and output data,
   a. There are two graphs to be run.

5) a brief report about your data structures.

Thanks.