Assignment 11

Due Date: June 4th, 2019
(No late submissions will be accepted)

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General Instructions

Each assignment has a written part and a programming part. For a written part, please write your answers in a pdf file, and for a programming part, follow the instructions below:

- Write your code in submission.cpp
- TA will test your code with Visual Studio on Windows OS, so please write your code in the same environment.
- Obviously, you must NOT use a library like the Standard Template Library (STL)
- Submit only C ++ files, not the entire project
- You should modify the code in submission.cpp between

  ```
  /* BEGIN_YOUR_CODE */
  ```

  and

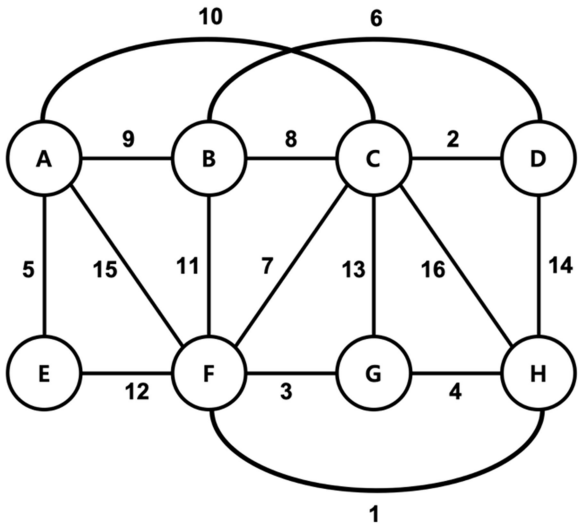
  ```
  /* END_YOUR_CODE */
  ```

You can add other helper functions outside this block if you want.

Written Problems

Do the following problems in the textbook and note that you need to show your work (i.e., not just the answer) for exercises.

In this assignment, you will use the specific graph figure below for problem 2, 4, and 5.



Problem 1 [2 points]

Do the exercise *R-13.7* in the textbook.

Problem 2 [2 points]

Do the exercise *R-13.13* in the textbook. In this problem, the start vertex is A.

Problem 3 [2 points]

Do the exercise *R-13.17* in the textbook.

Problem 4 [2 points]

Do the exercise *R-13.18* in the textbook.

Problem 5 [2 points]

Do the exercise *R-13.19* in the textbook.

Programming Problems

Problem 1. Dijkstra's Algorithm

Problem 1a [3 points]

Implement a Dijkstra's algorithm using priority queue.