SE 2228 - Analysis and Design of Algorithms
Homework #1 (v_1)

Yaşar University

October 29 2022 – November 7 2022

This is the second version (v_1) of homework 1. If you already did the first version of the homework (v_0) and if you upload it before October 28, 2022, 11:59 pm, then the first version will be graded. Otherwise, the second version will be graded.

Implement **Prim's algorithm** in C programming language. Implement **Prim's algorithm** in C programming language using the given template code (*graph.h*, *kruskal.h*, *prims.h*, *main.c*). Also, do time comparisons between Kruskal's algorithm and Prim's algorithm. Do not change the template code! Just add your code to relevant blocks.

Also, you must create a short report about this homework. Not matter where you developed the report such as Microsoft Word or LaTeX, you must upload only one PDF file for the report. This report must contain:

- A short description of Prims's algorithm
- Big Oh analysis of Prim's algorithm and Kruskal's algorithm
- Performance comparison results between Kruskal's algorithm and Prim's algorithm

Finally, you must upload only the *PDF* file and the *prims.h* file.

- Work on graph undirected. Also, the codes in the *graph.h* minimized for working on undirected graphs.
- You can ask questions related to the homework until **24 hours before the deadline**.
- You can upload the second version of the homework if you even uploaded the first version. Just delete the file of the first version.
- Do not copy and paste from the Net and other students. The codes and reports will be compared.
- Do not use any libraries other than those given in the template code.
- Use English!