Graph Theory Fall 2022

Assignment 5

1. Give details – two paragraphs will suffice – about your choice for the end-of-semester project.

   If you are doing a graph theorist's sketchpad, provide details about the language and/or environment you're doing your coding in. Also, how are you implementing vertices, edges, adjacency, and other structural data?
   For instance, I used the Processing environment for the sketchpad I use in class and I implemented vertices and edges as an array structure. I would then expand on this information in the writeup.

   If you are doing a narrative paper, provide information about your potential topic of choice. If you have not yet narrowed down to a specific topic, discuss broader themes that you're considering ("Algorithms that use tree-like structures"; "Graph coloring problems"; etc.) Provide details about how you'll structure the narrative (an outline, for instance) and provide some details about suitable references (going beyond Wikipedia) about your topic.

   If you're being adventuresome and considering the linear algebra project, give a brief description of how you'll implement vertices, edges, adjacency, centering on matrix, and vector data. Also, how do you anticipate dealing with eigenvalues and eigenvectors?

2. In the current era, media beyond written sources have been effective in communicating complex mathematical ideas to a broad audience. Shining examples of this include YouTube videos such as the 3Blue1Brown videos produced by Grant Sanderson. Find and provide a short synopsis of <u>two</u> YouTube videos each effectively explaining a problem that involves graph theory. A "short synopsis" includes the URL along with at least two paragraphs of explanation and/or narrative.