Quiz: Friday, March 11th (in class)

Remarks

The second midterm will take place in class on **Wednesday, March 16th**. The midterm and the class on Friday, March 18th will be handled by substitutes. The instructor will not hold office hours on Wednesday, March 16th following the exam, but the TA's will continue to be available in the Open Lab as per the posted schedule.

Reading

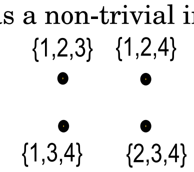
For Monday, March 7th, Section 11.2.
For Wednesday, March 9th, Section 11.3.
For Friday, March 11th, Section 11.4.

Assignment questions

Section 10.3: 5.
Section 10.4: 1.
Section 11.1: 4, 7, 10, 12.
Section 11.2: 3, 6.

Instructor question: Let $G_n = (V(G_n), E(G_n))$ be the graph defined as follows: $V(G_n) = \{\{a, b, c\} : a \neq b, b \neq c, a \neq c,$ and $a, b, c \in \{1, 2, \ldots, n\}\}$, and $E(G_n) = \{\{s, t\} : s, t \in V(G_n), s \cap t = \emptyset\}$.

In other words, vertices are subsets of size 3 of $\{1, 2, \ldots, n\}$ and there is an edge between two vertices if their intersection is empty. Thus, G_3 is the graph with the single vertex labelled $\{1, 2, 3\}$, and G_4 is the following graph with no edges (because every subset has a non-trivial intersection):



These kinds of graphs are fundamental in software testing.

1. Draw G_6.
2. Find the number of vertices of G_8.
3. Determine the set of vertices adjacent to $\{1, 2, 3\}$ in G_8.
4. Find the number of edges of G_8.
5. How many triangles are in G_8? G_9? (A triangle is a triple of vertices v_1, v_2, v_3 such that $\{v_1, v_2\}$, $\{v_2, v_3\}$, $\{v_1, v_3\}$ are all edges in G.)

Some other questions worth trying

Section 11.1: 2, 3, 5.
Section 11.2: 1, 5, 12.