Database Theory and Applications for Biomedical Research and Practice (BMIN 502/EPID 635)
Spring 2019
Assignment 10: Graph modeling

For this assignment, you are going to create a graph model of the ABIC system. This is a bit different from the relational, entity-relationship model you've created previously. Graph and relational models appear to be quite similar, but there are important differences. And there are a few preparatory steps you need to take before you complete the model.

1. Download and install Neo4j from here: https://neo4j.com/download/ You want the Neo4j Desktop version (not the Community version), which includes everything you need for this portion of the course.

2. Download the two (free!) Neo4j books.
   a. https://neo4j.com/graph-databases-book/?ref=home
   b. https://neo4j.com/books/learning-neo4j/
   You will be asked to register, but if you've already downloaded the software (for which you also have to register), your information should be already populated, assuming that you allowed cookies for the Neo4j site. There is more information in each than we will have time to cover in detail. However, these books are really good for providing more detail, and as references for the rest of the course and moving forward.

3. In order to do the deliverable part of this assignment, you will need to learn about the specifics of graph modeling. Before you start, be sure to read in this order:
   1. https://neo4j.com/developer/graph-database/#property-graph
   2. https://neo4j.com/developer/cypher/ and these two sub-pages on this page:
   3. https://neo4j.com/developer/cypher-query-language/
   4. https://neo4j.com/developer/guide-sql-to-cypher/
      Please note that we will be diving more deeply into Cypher in class. This material on these pages is just to orient you to the basic syntax so you can follow the guide to modeling below.
   5. https://neo4j.com/developer/guide-data-modeling/ and all of the sub-pages on this page:
      a. Introduction
      b. Describing a domain
      c. Answering questions

4. Now, you're ready to create your ABIC property graph model. We will do this in detail in class on the 10th, but try creating the model based on what you've learned. Please submit your draft model to Assignment 10 on Canvas by 9am, Tuesday, April 16, with the filename: **yourlastname_BMIN502_2019_10**. This can be in Powerpoint or Word, but best to make a pdf of that. Personally, I think will be a lot easier to do this in Powerpoint, because you will need the versatility in drawing objects. Your grade will reflect how much you've progressed with your graph by then, but if you submit even a rudimentary model (with at least all of the nodes and links), you'll get 2.5/5 just for starting!! Of course, if you include some Cypher code or other details such as a few questions you might instantiate on the graph, that will jack up your score considerably.