Red Team Modeling Project 0

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At a basic level, the class project consists of 1) selecting a network of your choice 2) modeling the network's operations 3) modeling attacks and defenses, or design of the network.

You will get a better idea of the specific steps involved, as the course progresses. For example, half-way through the course, we will do a sequence of homework assignments that can be thought of as an example project. The purpose of this introductory assignment is to simply form the project teams and to select the networks you will model.

For this assignment:

- Select a team of 2 to 3 students. The optimal team size is 2. With 3 team members, there is a high likelihood that one team member will not get as much out of the project as they should. Also, if you really prefer to work alone, its ok to have a team of 1; but that's worse than a team of 3. By yourself, you will be unable to discuss your modeling decisions, and you will have too much work to do because the ultimate expectations will be the same.

  It is beneficial for all the team members to have the same applications interest, because you will model the same network together.

- Select a network to model. These are the qualities you should look for in your selection:

  1) The network operations should be personally motivating to each of your team members. Ultimately, this motivation is going to help you put in the time required to complete the project.
  2) There should be plenty of *publicly* available data on the network operation that you select. No classified material is allowed, you can only use data that anyone can access from a well connected public library and computer.
     To determine the important data for your network, ask yourself: What are the nodes? What are the edges? What is the network's purpose? What are the limiting factors for the operation? Is there easily accessible, plentiful data for each of these?
  3) The network's real-world size can be as large as you like. However, to be easily tractable, your model is going to abstract the network to a manageable size, perhaps 20 to 150 nodes. For a good network, such an abstraction would still be meaningful.
  4) Try pick a network unique to your team, and steer away from doing networks selected by other teams. This is to make sure that each team has a similarly unique modeling experience.

- **Deliverables.** Each team should send an email to `ned@nps.edu` with the title "Project 0" that includes 1) the names of the team members, 2) the network selected, 3) a description of the nodes and edges in the network, 4) and a list of specific data sources (e.g. web addresses and links, or specific documents as attachments). Do this early because I have to approve your network selection by this assignment's due date. We may have to do several rounds before your network is approved, because the data sources may be insufficient, or your selection is too similar to other teams' selection.