CSI 445/660 – Part 5
(Introduction to CINET)

References and URLs for CINET

References:

1. S. Abdelhamid et al., "CINET 2.0: A Cyberinfrastructure for Network Science", *Proc. 10th IEEE International Conference on eScience* (eScience 2014), Sao Paulo, Brazil, Oct. 2014.

2. S. Abdelhamid et al., "CINET: A Cyberinfrastructure for Network Science", *Proc. 8th IEEE International Conference on eScience* (eScience 2012), Chicago, IL. Oct. 2012.

Useful URLs:

1. For additional information regarding CINET:

   http://cinet.vbi.vt.edu

2. To use CINET (through the Granite interface):

   http://cinet.vbi.vt.edu/granite/granite.html#login

A Brief Overview of CINET

- CINET: CyberInfrastructure for NETwork science.
- Developed by a group of research laboratories and universities.
- **Lead Organization:** Network Dynamics and Simulation Sciences Laboratory (NDSSL), a unit of Virginia Bioinformatics Institute (VBI) at Virginia Tech (VT).
- Supported by several funding agencies (including NSF).

Goals of the project:

- A broadly accessible cyberinfrastructure.
  - A web portal that hides the details of computation and data management, thereby minimizing the required learning effort.

Goals of the project (continued)

- A flexible framework.
  - Allows addition of new algorithms and tools.
- A common repository.
  - Managing data, models and results through a digital library that maintains metadata.
- Fostering research, teaching and collaboration.
  - Allow a broad user base, from multiple disciplines.
  - Provide access to material from courses on Network Science taught at different educational institutions.

Facilities Provided by CINET

- A collection of about 110 networks of various sizes and from various domains.
- Many graph generators.
- Several software tools (e.g. GaLib, NetworkX) for computing measures of networks. (About 80 measures are supported.)
- Two tools (EDISON and GDS Calculator) for studying network dynamics.
- A convenient user interface for accessing the available services.
- Visualization of networks.
- Addition of new networks.

CINET: System Components and Interactions