Introduction to Scientific Visualization and Data Sharing

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Duration: 3 - 4 hours
Pre-requisites: None
Level: Introductory

Requirements

1. Computer, mouse with scroll wheel (tablets are not sufficient for this tutorial).
2. VisIt software: Download then install version 2.12.3
   from https://wci.llnl.gov/simulation/computer-codes/visit/executables

   You do not need to choose a network configuration at this point.

3. Download sample data: visit_data_files.tar.gz. Unzip to your desktop. If you prefer a .zip file, go to https://github.com/cmwright12/JSUCampusChampions/tree/master/Workshop_Series/SciViz_Nov2017 and right-click the file to save it and then unzip to your desktop.
4. Download VisIt host profile for Comet: host_comet_2_12_x.zip.
   Unzip and copy this file as follows:
   Linux and Mac*: ~/.visit/hosts/
   *In your terminal from your directory with the file, type

   ```
   cp host_comet_2_12_x.xml ~/.visit/hosts/
   ```

   Windows: C:/users/username/Documents/visit/hosts/

5. Create an account on SeedMe.org. (Optional)
   How to use SeedMe from VisIt and fixes for VisIt version 2.12.1, 2.12.2, 2.12.3

Visualization is largely understood and used as an excellent communication tool by researchers. This narrow view often keeps scientists from fully using and developing their visualization skillset. This tutorial will provide a "from the ground up" understanding of visualization and its utility in error diagnostic and exploration of data for scientific insight. When used effectively visualization can provide a

complementary and effective toolset for data analysis, which is one of the most challenging problems in computational domains. In this tutorial we plan to bridge these gaps by providing end users with fundamental visualization concepts, execution tools, customization and usage examples. Finally, short hands on tutorials on Data Sharing using SeedMe.org will be provided.

The tutorial comprises of four closely related sessions as follows:

1. Visualization fundamentals: Lecture - Assay of standard techniques and their utility (45 min)
2. Hands on Visualization with VisIt software on your computer/laptop (80 mins).
3. Remote visualization with VisIt software on Comet/Gordon cluster at SDSC. We will provide training accounts. (30 mins)
4. VisIt has built-in functionality to sharing visualizations and other content rapidly to SeedMe.org. A swift introduction to using SeedMe.org will be provided (20 mins)

Tutorial slides: http://users.sdsc.edu/~amit/scivis-tutorial/scivis-tutorial.pdf

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Getting further help with VisIt

Excellent manuals and guides are available at https://wci.llnl.gov/simulation/computer-codes/visit/manuals
You can search or send specific questions to the VisIt's user mailing list. The mailing list is very active and supportive.