Installation Document

We use very large datasets for running this program since we can't submit all of them we are providing our code with the following datasets in the folder named modified:

As-skitter.txt
CA- AstroPh.txt
CA-CondMat.txt
CA-GrQc.txt
CA-HepPh.txt
CA-HepTh.txt
facebook_combined.txt

Remaining datasets can be found from the following links please copy them to the data/original folder:

Live-Journal (com-lj.ungraph.txt.gz)

Amazon (com-amazon.ungraph.txt.gz)

YouTube (com-youtube.ungraph.txt.gz)

California road network (roadNet-CA.txt.gz)

Pennsylvania road network (roadNet-PA.txt.gz)

Texas road network(roadNet-TX.txt.gz)

Note: For the downloaded test cases please open then through an editor preferably through vim and edit the first few lines in the following manner:

For example in Amazon dataset we have:

Undirected graph: ../../data/output/amazon.ungraph.txt
Amazon
Nodes: 334863 Edges: 925872
FromNodeId ToNodeId

Change it into

334863 925872

Now run the data/script.sh to get the modified dataset which is saved into modified folder.

Instructions To Compile and Run:

Running the makefile generates all the executable files for the serial , MPI and cuda versions.

Run the following commands to run each file:

Sequential Files:

nodeIterator.cpp   :   ./nodeIterator.cpp < path to inputfile

nodeIterator_core.cpp   :   ./nodeIteratorCore < path to inputfile

edgeIterator_forward.cpp   :   ./edgeIteratorV1 < path to inputfile

edgeIterator_compactforward.cpp   :   ./edgeIteratorV2 < path to inputfile

edgeIteratorForwardArrays.cpp   :   ./edgeIteratorV3 < path to inputfile

mpi_edgeIteratorForwardArray.cpp : mpiexec -np <p> ./mpiEdgeIteratorForwardArray <path to inputfile

CUDA Files:

./edgeIteratorCuda < path to inputfile

Note: The number of blocks and threads in CUDA is hardcoded.

For distributed memory code, you will find another dataSetFormatter.py, place the datasets inside folder 'original/' in this directory and repeat the above steps.

The vertices,edges and number of triangles in each dataset is mentioned in data/readme.txt