CMPE 478: Parallel Processing
Fall 2022, Homework 2
(due Jan. 2)
(you can do this project in groups of at most 2 students)

Part A
Implement Google's page ranking algorithm (given in homework 1) using MPI. Since you will develop a parallel program on a distributed memory machine, you need to partition the web graph so that (i) the partitions will be load balanced and (ii) communication among partitions minimized. In order to do this, use the METIS partitioner available at: https://github.com/KarypisLab. Note that you can use the sequential METIS partitioner. But your implementation of the Google's page ranking algorithm should be parallel.

Part B
Implement Google's page ranking algorithm (given in homework 1) using Thrust for NVIDIA GPUs.

Grading
Your homework will be graded according to the following criteria:

Documentation as a pdf file – a written document that includes : • details of algorithm/ implemention, • details of the machine/CPU/GPU you used , • timings table • discussion of results,.	12%
Comments in your code	8%
Implementation / tests / results	80%

You will be asked to perform demonstrations of you projects. A doodle survey for scheduling the demonstrations will be sent by the instructor.
.