ME 471/AE 420/CSE 451: Programming Assignment 0
Spring 2017

Due: Friday, January 27, 2017 at 11:59pm (subversion)

This is not a required HW, and therefore you will not receive a score for its completion. Instead, you should use this HW as an opportunity to learn how to download your future assignments from the SVN repository (https://subversion.ews.illinois.edu/svn/sp17-me471/) and submit your code for grading. You can find more information regarding SVN from the CS 225 website (Thanks Prof. Cinda Heeren!)

The first step is to create your "Working directory". For example, from a linux terminal, run: mkdir ME471-Programming-Assignments

Go to your working directory (cd ME471-Programming-Assignments) and run:
svn checkout https://subversion.ews.illinois.edu/svn/sp17-me471/your_netid/00-Example

You should now have a folder named "00-Example", which contains two folders: "Matlab-Code" and "C-Code". Choose your favorite programming language and go to its directory.

For this assignment, you will receive a complete code that reads an input file, performs some calculations, and writes solutions to output files. As you will soon learn, the given input file (input.dat), the function that reads the input file (ReadInput) and the function that writes the output files (PrintOutput) are the same ones that you will use to complete the Programming Assignment #1. You don't need to modify these three files!

Make modifications to the file "ExampleFunctions". You must re-define the following variables:

- All components of UF are equal to 5.
- The diagonal components of KPP are equal to 23.
- $KFF_{21} = KFF_{12} = 4$
- $KFF_{33} = 9$
- $KPF_{ij} = ELEM\_NODE_{2j}$ for all i

Upload the changes to the repository using:
svn commit -m "COMMIT_MESSAGE"

It is good practice to commit regularly and frequently. For example, commit when you are done writing a function. This allows both simpler commit messages and greater confidence in the repository.

We will start running the grading script twice daily (2:00pm and 11:59pm) on Tuesday, Jan 24. Scores and feedback should be available to you a few hours after each run (1-5 hours depending on the assignment). In case you don't get a satisfactory score, you can change your code, make another commit, and your code will be re-graded. The grading script will run twice daily until Friday, always at the same time. You final score will be the one from the last run. Remember that the score for "Programming Assignment 0" will not count towards your final grade.

General Instructions for Programming Assignments

Before you commit your work, make sure all the files are following the guidelines below:

1. The input file must be named "input.dat"
2. Matlab users:
   (a) Do not change the name of the main file (MainFile.m). The grading script will execute this file.
   (b) Do not modify the following lines in the main file:
   // ==========
   // DO NOT MODIFY THE LINE BELOW!! //Autograding script will search for this variable definition
   filename = 'input.dat';
   // ==========
   (c) Do not delete the contents of the C-Code folder (mainly the Makefile file)
   (d) Use semicolon to suppress output from MATLAB command. You may want to see the numerical values of some variables while debugging, but make sure to suppress all intermediate output results before you commit your code. If outputs are not suppressed, the execution of the code will become very slow when solving larger FEA problems. Codes that take more than 10 minutes to run will be aborted.
3. For C++ users:
   (a) Do not modify the variable EXENAME inside the Makefile. The grading script will execute the file defined by EXENAME.
   (b) Do not modify the following lines in the main file:
   // ==========
   // DO NOT MODIFY THE LINE BELOW!! //Autograding script will search for this variable definition
   string filename = "input.dat";
   // ==========
4. Use the "PrintOutput" function that we give to you. This will ensure your assignment will be graded properly.