

CS450: 4th credit project proposal

Haroun Habeeb

hhabeeb2@illinois.edu

I am using the **2nd edition** of scientific computing by Heath.

I am opting to do extra homework in Chapter 11: Partial differential equations.

Since we haven't done that chapter yet, I'm not too sure about the questions I have picked. I'd prefer doing:

Exercise: 11.1 , 11.7

11.1 should test a broad understanding of PDEs, 11.7 should give me some understanding of theoretical proofs in PDEs

Computer problems:

11.4: I'll implement a basic solver so that I can grapple with the topic more easily

11.12: I'll get to implement steepest descent and conjugate gradient descent for solving positive definite linear systems, both of which will be useful for me in other research work. (I'll also be running them on a representative sample of problems)

11.13: I'll get to implement gauss-seidel method and jacobi, while also potentially comparing them