**Abstract**

Half page description of an application that you plan on

implementing. (This is an "elevator" pitch with purpose and features of

the project.)

**Problem Statement**

Solve the 2D diffusion equation given the following domain and boundary conditions using the Crank Nicolson and Implicit Discretization methods.

*Rectangular Domain*

*Boundary Conditions*

*Given*

**Discretization**

Crank Nicolson

(4)

Explicit

(5)

Description of the numerical method (pseudo code included)

• Technical specifications of the computer used

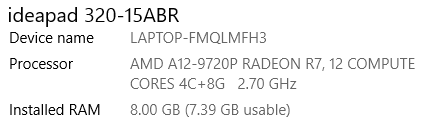


Figure 1: Computer Specifications

• Results (include graphs and comments)

– Specifications of parameters used in simulations

– Evaluate the effect of number of points used for discretization

– Perform grid convergence study

– Evaluate the effect of diffusive CFL\*

– Comparison of results with expected theoretical behavior

– Verify the order of spatial accuracy of discretization

• Commit your report to your git repository

Submit the git repository via blackboard

– project

– project/doc/ {for Final Report} – 50%

– project/src/ {for all working code} – 50%

– project/bin/ {for executable(s)}

– project/tests/ {for test cases (if any)}