

# CS6023 GPU Course Project Readme

CS18B051

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## 1 Course Project

- The project is about sudoku solver. Takes input.txt as input sudoku and prints output sudoku on the terminal.

## 2 Files we have

- input.txt , it has 9x9 sudoku as an input matrix with empty entries filled as 0.
- gpu.cu , the cuda file which should be run in googlecolab by adding percent percent cu at the start, with input.txt available in the same folder as gpu.cu . or using gpu on the device.
- cpu.cpp , it is a c++ code of cpu execution of the algorithm. Run using `g++ -o cpu cpu.cpp` followed by `./cpu`
- cpu.cu , it is a cpu execution of algorithm , why we have it as .cu is to compare times of execution of gpu version and cpu version. as times depend on the device we are using i wrote .cu files for both cpu and gpu execution.

## 3 How to run

- cpu.cpp , can be run as a normal c++ file. `g++ -o cpu cpu.cpp` . followed by `./cpu` . make sure input.txt is in same folder as cpu.cpp.

- `cpu.cu` and `gpu.cu` can be run as normal `.cu` files , in google colab we run it by adding `%%cu` at the start of files and run the cell.or if you have gpu in the laptop run using `nvcc gpu.cu` followed by `a.out`.similarly for `cpu.cu`