

CMPXXX

Big Assignment

(Kmeans Clustering)

Team x

|  |  |  |  |
| --- | --- | --- | --- |
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# Sklearn Implementation

## Version (1):

In this Version

# CPU C Implementation

## Version (1):

In this Version

A screen shot of a computer program

Description automatically generated

## Design:

## Profiling:

## Insights:

# GPU C Implementation

## Version (1) [Very Simple Inefficient Approach]:

In this Version we have mainly focused on implementation of the parallel version of the algorithm without logical or runtime error (taking not into consideration any possible optimization) Following Golden Rule accumulative baby steps move mountains 😍

A screen shot of a computer code

Description automatically generated

## Design:

xxx

## Improvements Ideas:

xx

## Profiling:

xx

## Insights:

Although this version is very inefficient with redundant memory copies and global memory access still it is 18x faster than CPU 😉. This is great evidence that this problem is very efficient parallelizable problem more optimizations will let us reach incredible improvements in speed 🚀.

# Progress Table

The Results of this Table are based on same input image ./tests/image\_3.png with K=5 :D to just sense our improvements.

|  |  |
| --- | --- |
| **Version** | **Time** |
| **CPU C Version** | 0.388 |
| **GPU Version (1)** | 0.02100 |
|  |  |
|  |  |