README.md

CO332 - Heterogenous Parallel Computing

Assignment 3


```
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```


Q1

Histogram - Integers

`input.raw` and `output.raw` are created using `dataset_generator.cpp`

Running the program

```
g++ dataset_generator.cpp
./a.out
nvcc solution.cu
./a.out ouput.raw input.raw
```

Q2

Histogram - ASCII characters

`input.txt` and `expected_out.raw` are created using `dataset_generator.cpp`

Running the program

```
g++ dataset_generator.cpp
./a.out
nvcc solution.cu
./a.out expected_output.raw input.txt output.raw
```

The output generated can be stored in a separate file as shown above (`output.raw`);

Q3

Thrust Histogram Sort

`input.raw` and `output.raw` are created using `dataset_generator.cpp` .

Running the Program

```
g++ dataset_generator.cpp
./a.out
nvcc solution.cu
./a.out ouput.raw input.raw
```

Q4

Convoltuion

`input_0.ppm` contains the input image/matrix and `input_1.raw` is the mask. `output.ppm` is the expected output.

Running the Program

```
g++ dataset_generator.cpp
./.a.out
nvcc solution.cu
./a.out output.ppm input_0.ppm input_1.raw
```

Q5

7 point stencil

3D matrices of varying sizes were created by using `dataset_generator.cpp` .

Running the Program

```
g++ dataset_gen.cpp
./a.out
nvcc solution.cu
./a.out input.ppm expected_output.ppm
```