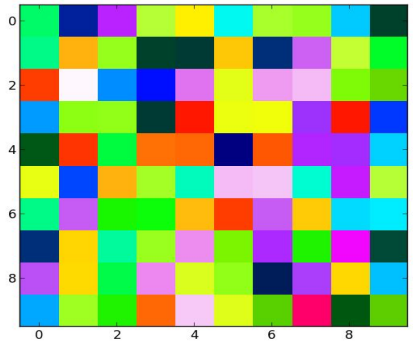
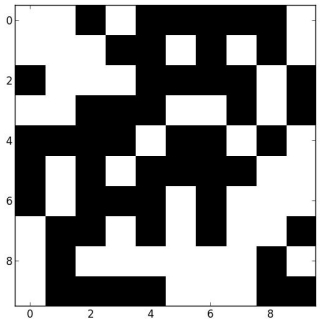
BMP Generation & Architecture-based Optimization

Kyle Berry, Will Weber

Problem:

Image generation creates depictions of reality based on a color matrix. Creating high resolution images is not a simple task, consisting of identical operations being conducted over large, simple data sets.





What Has Been Completed

- Simple bmp generation that uses a naive rendering scheme (BASELINE)
- Effectiveness scheme is based on the time spent creating the image
- Potential techniques for testing have been determined for the next step

On The Horizon:

- Using cache optimization techniques to reduce time spent generating the image
- Using GPU programming techniques to port the image generation task to CUDA to determine viability and potential speed increase
- Comparing architecture features of both environments to justify performance results

Issues

- Scope of the previous idea, too advanced
  - New topic allows us to use more of what we learned in class, less time spent figuring out how to leverage external libraries (OpenGL)
- Focus is not all on GPU