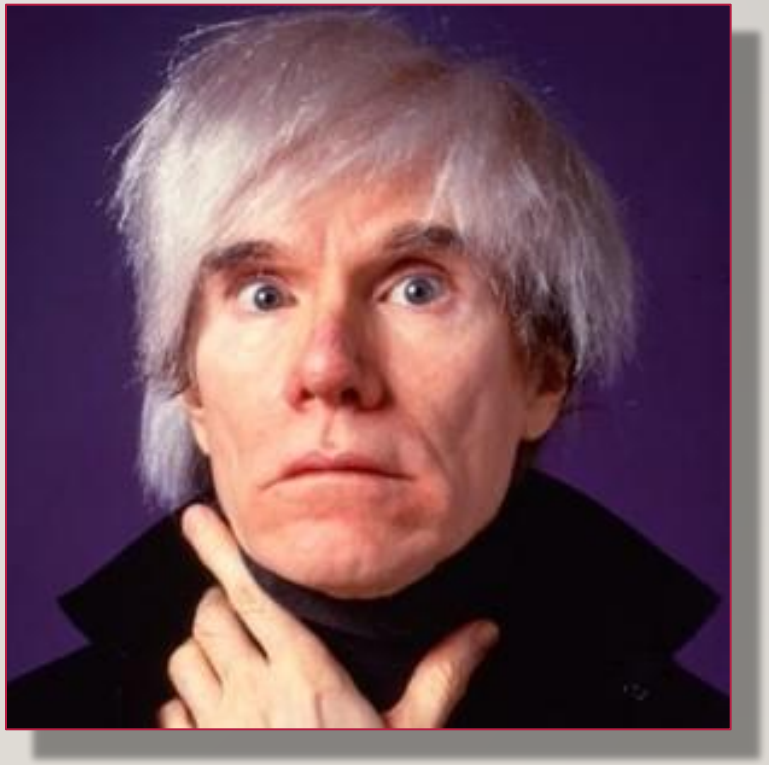
THE ANDY WARHOL MACHINE

A COSC 519 FINAL PROJECT

INTRODUCTION

- Team Members
  - Steven Kennedy
  - Camden Thatcher
  - Andy Warhol

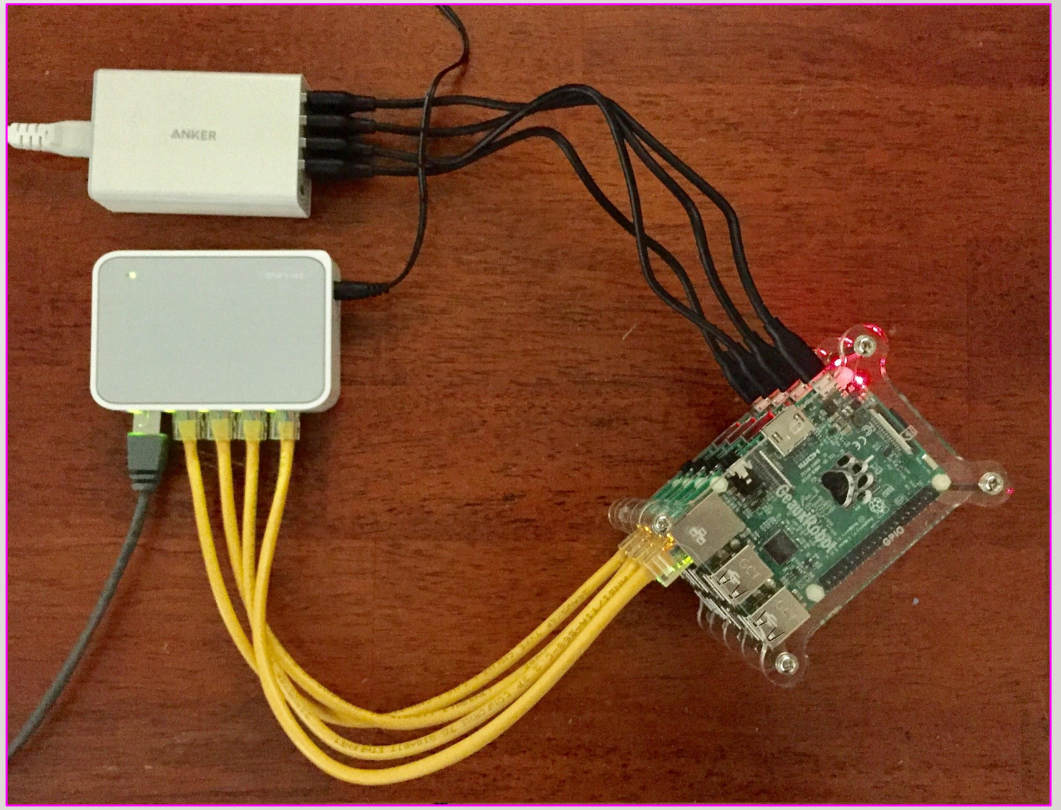


PROJECT GOALS

- Distributed Computing
  - Raspberry Pi Beowulf Cluster
  - Programming with MPI
  - Parallel Programming
- Image Processing
  - Can we reproduce an iconic art style?

TECHNICAL SPECIFICATIONS

- Laptop
- Network Switch
- Raspberry Pi 3 x 4
  - 1.2GHz 64-bit Quad Core ARM CPU
  - 1 Gb RAM
- Python v2.7
  - Message Passing Interface (MPI)
  - Python Image Library (PIL)



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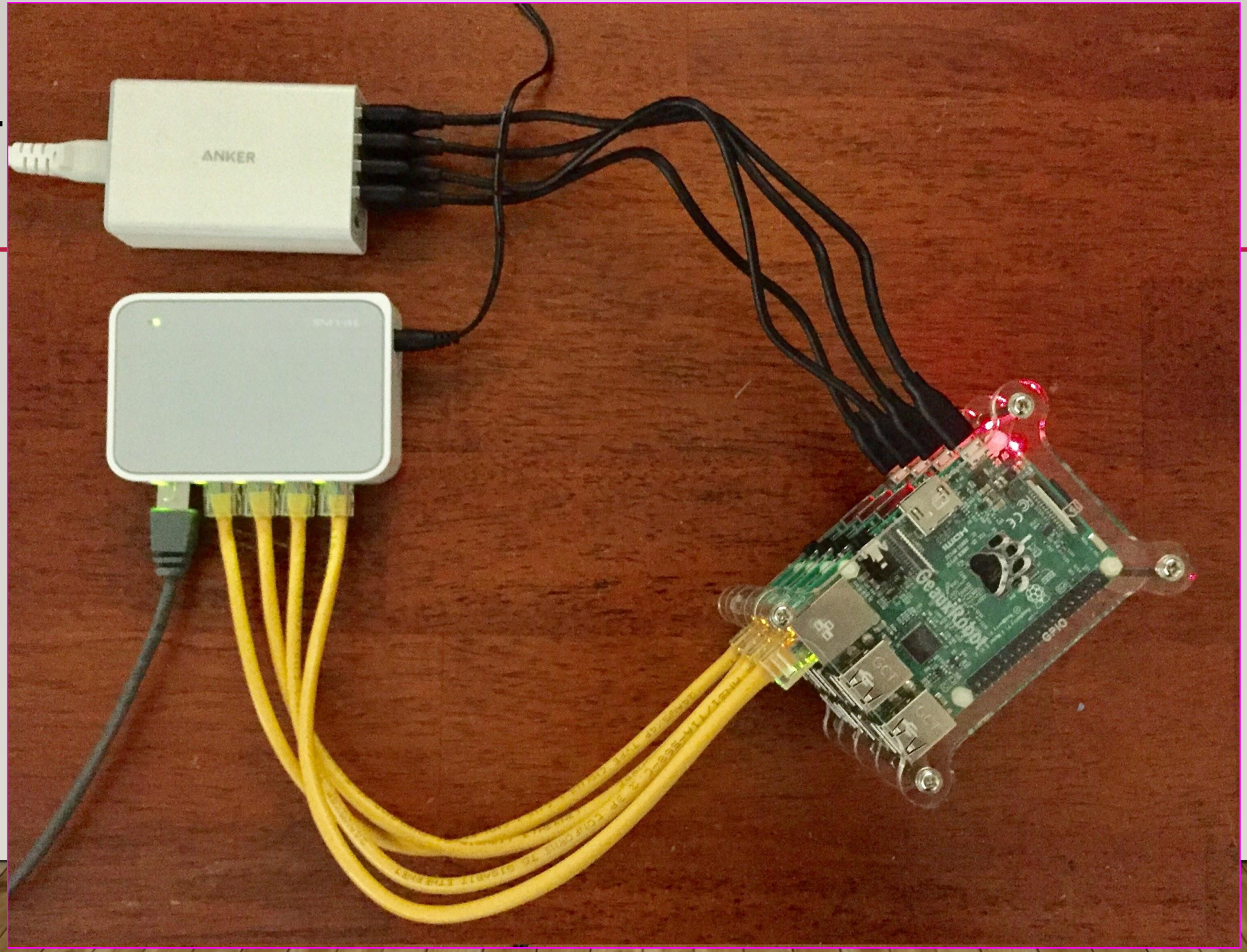

PARALLEL PROCESSING IN A PI CLUSTER

- Raspberry Pis communicate through the switch
  - MPI facilitates process scheduling
- The parent node receives an image to process, and it is distributed to each of the others
- After processing, it is sent back to the parent, which assembles each image into the resulting output

PARALLEL PROCESSING IN A PI CLUSTER

IMAGE PROCESSING

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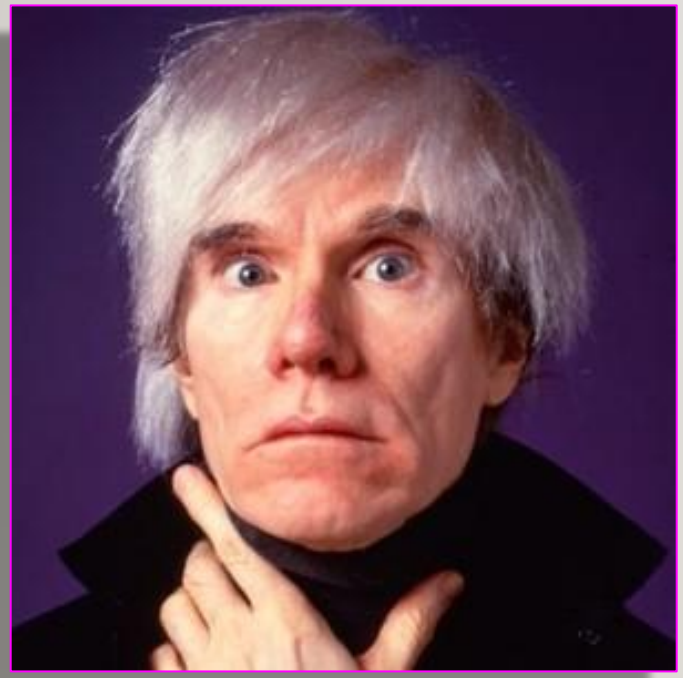

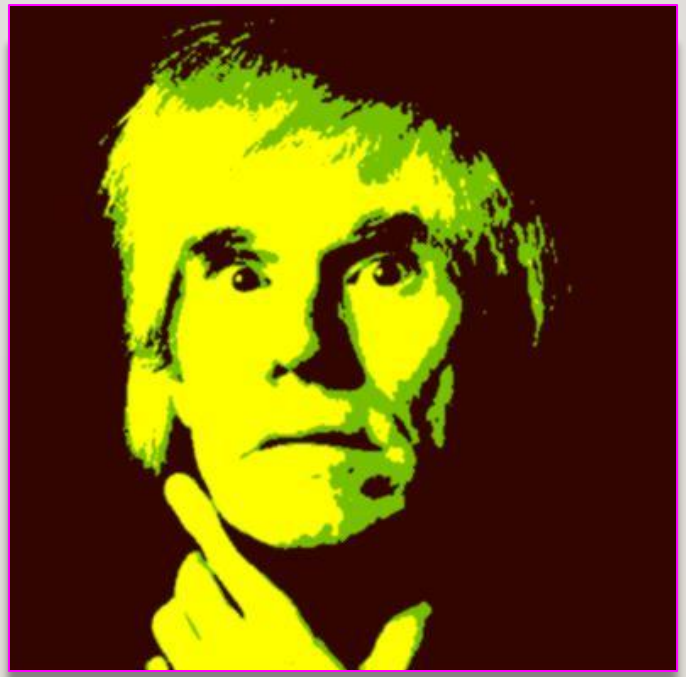

ART GALLERY

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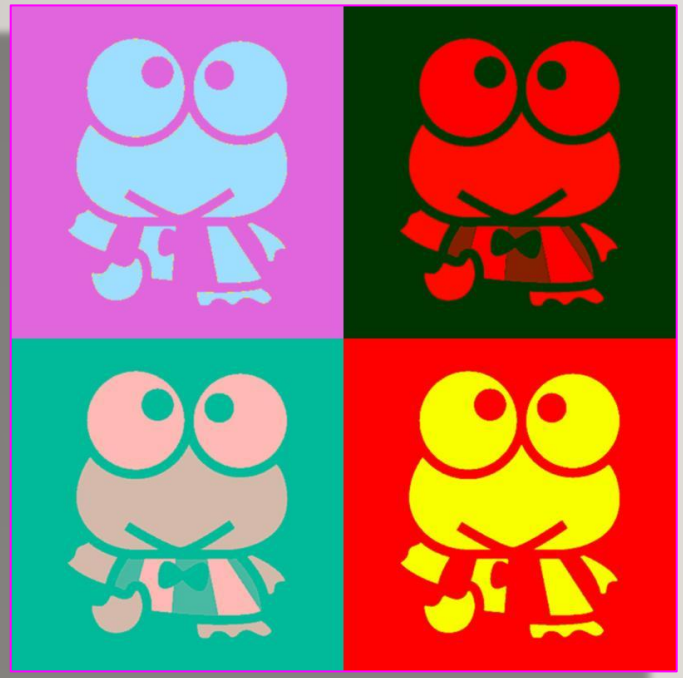

ART GALLERY

LIVE DEMO

- Questions?