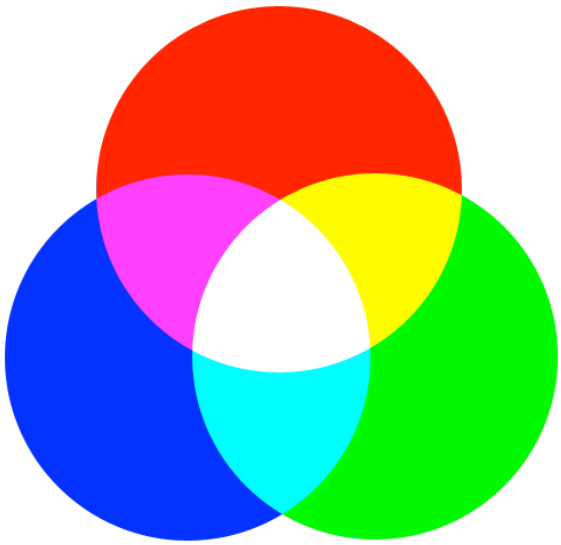
THM Content Design Document

Title: Image DSP
Course: Python
Due date:
Instructions Text: This demo explores what different pixel manipulations look like when applied to the same photo.
Learning outcomes: It is expected that student learns what affect a remove red, green or blue filter
looks like. Greyscale and negative photos are thrown in to add a little bit of difficulty.
Explore mode: Explore mode is a simple color transformer that student can control. See explore
mode for better detail.
Special Considerations: All of the color of these transforms can be done with a ColorMatrixFilter.
The negative and greyscale will have to be done pixel by pixel.
Professor sign-off: **Date:**

Explore mode

Progress Bar | Title text block

Explore) Click on the greyscale and invert checkboxes and change the three red, green and blue sliders. Observe how the image below changes.



Control Panel

Goto Quiz

R G B

Greyscale

Negative

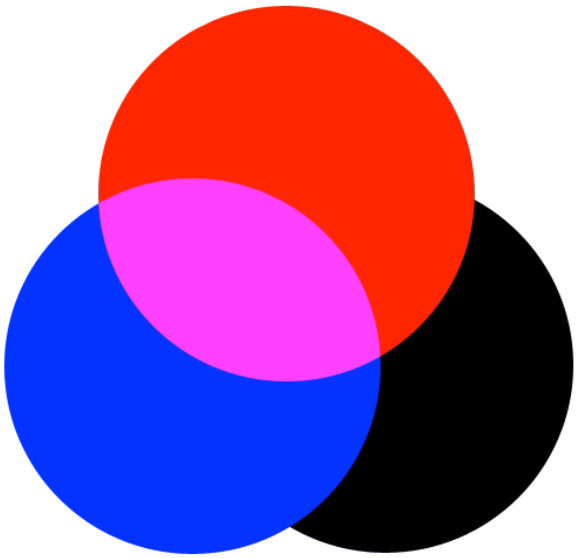
Description: As the users changes each slider the ColorMatrixFilter should be updated. The value range of each knob is 0 to 1 default starting at 1. If the greyscale checkbox is checked then convert the current image to greyscale. If the negative checkbox is checked then convert the current image to be a negative. To see a complete list of what the final images should look like see Appendix A.

Question # 1 out of 4

Progress Bar | Title text block

Q1) Select the type of pixel manipulation that has been applied to this image and press submit.

Drop Down V



Control Panel

Submit

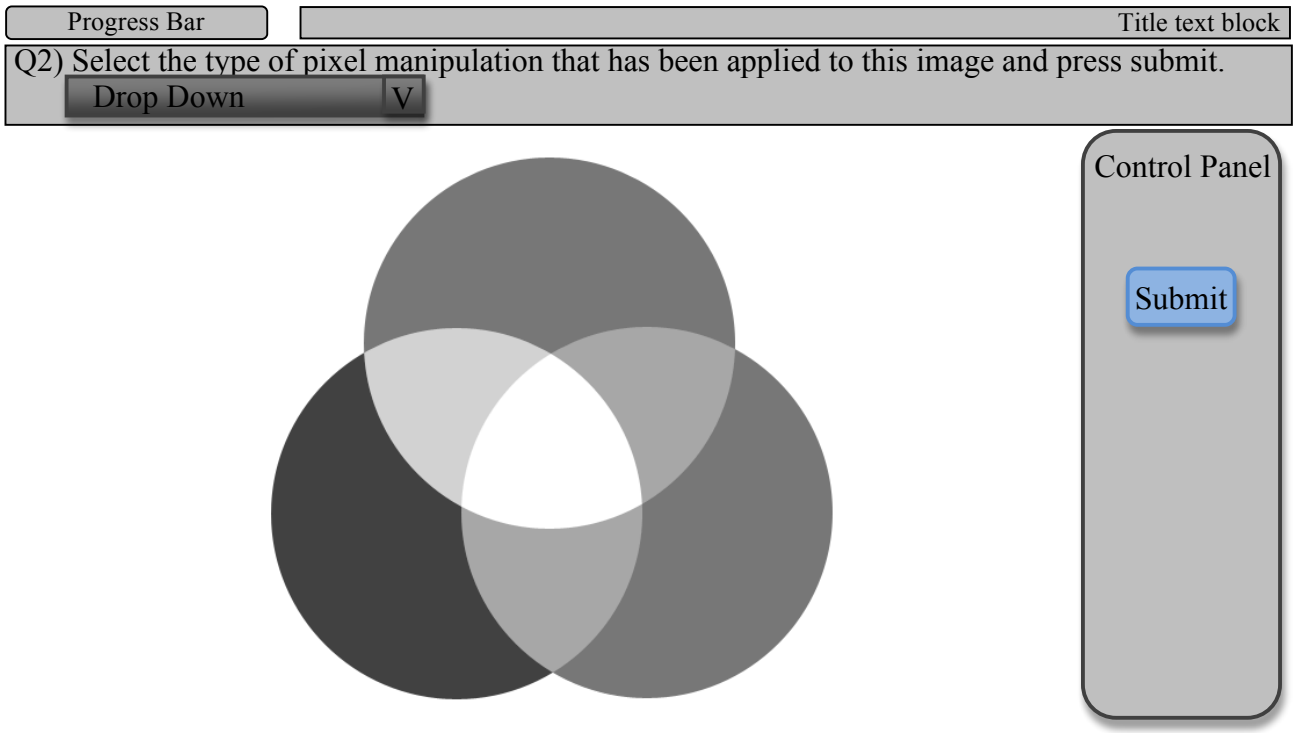
Description: The combobox in this question should have the following options: “None”, “Removed red”, “Removed blue”, “Removed green”, “ Greyscale”, “Negative”. The drop down should start on the option “None”.

Correct answer: The correct answer is “Removed green”

Incorrect answer Animation: None

“Show Answer” animation: Set the drop down to “Removed green”. Change the image to the original color wheel and alpha blend it to the above image in 2 seconds.

Question #2 out of 4



Description: The combobox in this question should have the following options: “None”, “Removed red”, “Removed blue”, “Removed green”, “ Greyscale”, “Negative”. The drop down should start on the option “None”.

Correct answer: The correct answer is “Greyscale”

Incorrect answer Animation: None

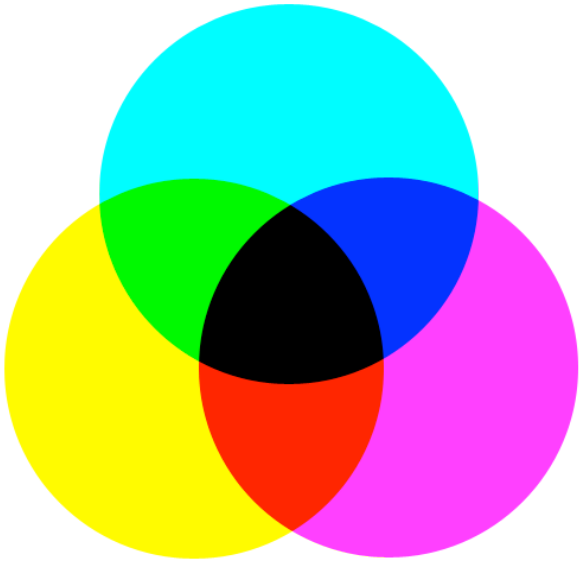
“Show Answer” animation: Set the drop down to “Greyscale”. Change the image to the original color wheel and alpha blend it to the above image in 2 seconds.

Question #3 **out of** 4

Progress Bar | Title text block

Q3) Select the type of pixel manipulation that has been applied to this image and press submit.

Drop Down V



Control Panel

Submit

Description: The combobox in this question should have the following options: “None”, “Removed red”, “Removed blue”, “Removed green”, “ Greyscale”, “Negative”. The drop down should start on the option “None”.

Correct answer: The correct answer is “Negative”

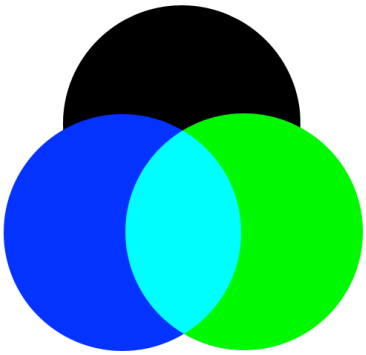
Incorrect answer Animation: None

“Show Answer” animation: Set the drop down to “Negative”. Change the image to the original color wheel and alpha blend it to the above image in 2 seconds.

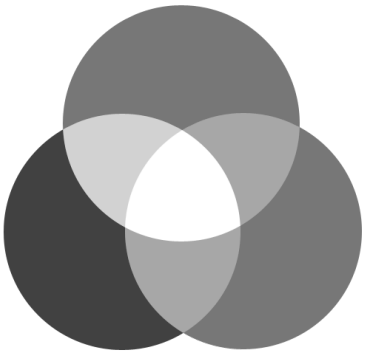
Question #4 out of 4

Progress Bar | Title text block

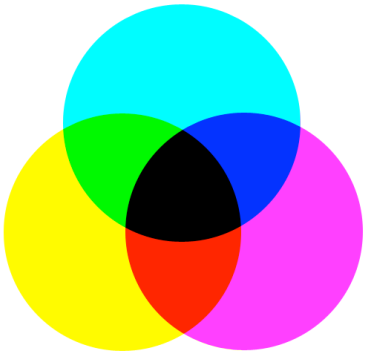
Q4) Click the transformation which is “lossless” and press submit.



Removed Red



Greyscale



Negative

Control Panel

Submit

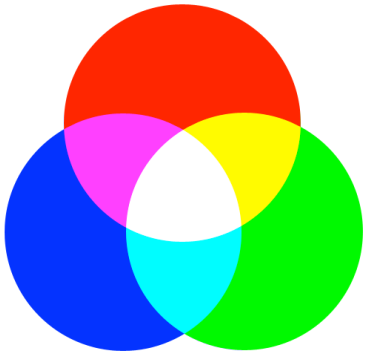
Description: All the images should start with no glow. Each image should be interactive and glow solid yellow when selected. If the user selects a new image then the previous selection is removed.

Correct answer: “Negative” is selected.

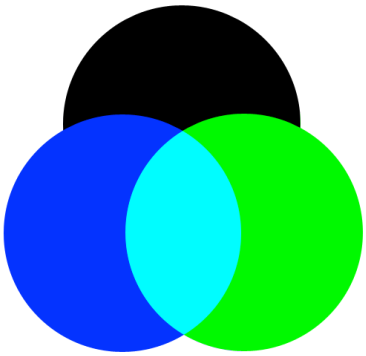
Incorrect answer Animation: None

“Show Answer” animation: Set the glow only on “Negative”. Toggle the image from “Orignal” to “Negative” three times to show that the “Negative” transformation is lossless. Each toggle should have a half second delay so the user can register what’s going on.

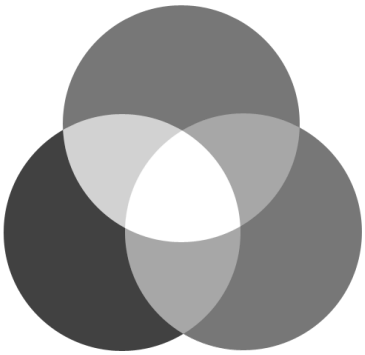
Appendix A



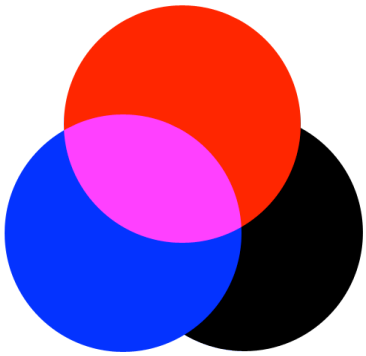
Original



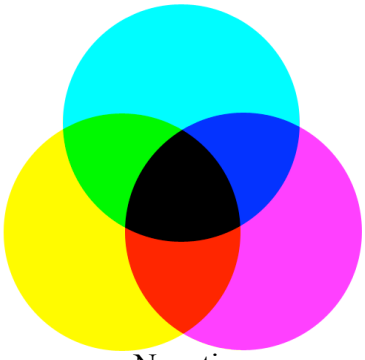
Removed Red



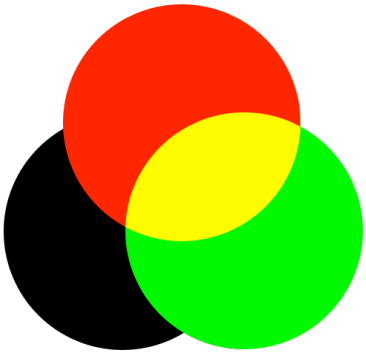
Greyscale



Removed Green



Negative



Removed Blue

Description: Here is a list of the various stages of the color wheel. In explore mode the user can adjust the RGB values to be an analog range. The color matrix filter should handle most of the in-between steps for all the images on the right.

Quality Checklist:

OS and Browser Compatibility:

OS System	Firefox	Chrome	Safari
Windows			
Mac OSX			
Linux (Ubuntu)			N/A

NOTE: All demos must display each question properly for each OS/Browser combination.

Server Compatibility:

Description:	Checklist
SWF can run as a standalone file off the server with no errors.	
While in offline mode the submit button uses server simulation	
While on the server the SWF can and transmit and receive data	

Demo Controls:

Description:	Checklist
User can traverse back and forward through questions without glitches	
User can reset at any time and question state will revert back to beginning state	
No cases of wrong answers marked as right	
No cases of right answers marked as wrong	
When the user presses the answer button the answer animation plays	
While an answer animation is playing the curtain is visible	
(Microstep) User can traverse back and forward through microsteps without glitches	
(Microstep) Reset sets the microstep back to 1 and reverts back to beginning state	
(Explore mode) The user can return to explore mode at any time	
(Explore mode) The user can return back to the last question from explore mode	

Miscellaneous Checks

Description:	Checklist
All interaction objects have the mouse cursor change to a hand while over object	
All fonts are Times New Roman, Helvetica or Futura	
Instructions text is appropriate **and written**.	
Demo title is appropriate **and written**.	