Photoshop Tutorial

Millbrae Camera Club

2008 July 24

Introduction

Tutorial

For this session…

- Speak up if:
  - you have a question
  - I’m going too fast or too slow
  - I’m not speaking loudly enough
  - you know a better way

Approaching Adobe Photoshop

- Many different kinds of users
  - graphic artists
  - digital & film photographers
  - web designers
  - etc…
- Many paths to same result
  - different images call for different methods

Demo: User Interface

- main view window
  - rulers & guides
- application menu bar
- palettes
  - tool palette & toolbar
  - navigator, histogram, levels
  - palette toolbars & menus

Questions

Basics of Color Management

Concept

Primary Colors

- Subtractive model
  - light reflecting objects, like paint
  - cyan, magenta, yellow, black – “CMYK”
- Additive model
  - light emitting objects, like a computer monitor
  - red, green, blue (RGB)

Representing Color

- In art class, **RED** + **BLUE** = **PURPLE** in paint
  - how much red, how much blue to get that shade of purple?
  - less red or less blue gives a different shade of purple
- So: all colors can be represented as amounts of the primary colors

Color Management Basics

- Four core concepts
  - color mode
  - color space
  - bit depth
  - color profile

Demo: RGB Color Model

- Color combinations
- Color chooser

Color Mode

- Defines numerical representation of color
- Describes interactions of primary colors
- additive model: **GREEN** + **BLUE** = **CYAN**
  - more color added → closer to white
- subtractive model: **CYAN** + **YELLOW** = **DARK GREEN**
  - more color added → closer to black

Color Space

- Describes extremes of each color
- Each color space is tied to one color mode
- Color spaces for RGB color mode
  - sRGB
  - Adobe RGB
  - ProPhoto RGB
  - etc…

Bit Depth

- Determines number of levels for each color component
- Examples include…
  - 8-bit
  - 16-bit
  - 32-bit
  - (sorry, no ∞-bit)

Color Profile

- Color profile defines the following for a particular device:
  - a color space
  - maximum bit depth
- A “device” is anything that inputs or outputs color
  - monitor, printer, projector, camera, scanner, etc…

Image File Formats

- Image files must specify a color space and bit depth
  - example: Adobe RGB/16
- Some file formats do not support 16-, 32-bit
- Some file formats only support sRGB/8
- Photoshop native format, PSD, supports everything

Review: Color Concepts

- Color Mode
  - defines numeric representation of all possible colors
- Color Space
  - describes limits of each color
- Bit Depth
  - defines number of different possible shades
- Color Profile
  - defines a color space & maximum bit depth for a particular input or output device

Choosing a Color Configuration

- What display medium are you targeting?
  - Web (computer monitor) – use sRGB/8
  - Print – use Adobe RGB/8
  - Don’t Know Yet – use Adobe RGB/16
- Save images as though you don’t know yet—you might change your mind later!

Questions

Configuring Photoshop

Tutorial

Demo: Application Preferences

- Edit → Preferences
- Use Performance preferences to get the most out of your hardware
  - memory usage
  - history & cache
  - scratch disks

Demo: Configuring Color Workflow

- Edit → Color Settings…
- Set RGB working space
  - should match your camera
- Set color management policies

Questions

Basic Image Manipulation

Tutorial

Image Resolution

- There is no such thing as “image resolution”
  - pixel resolution
  - spatial resolution

Pixel Resolution

- Pixel resolution describes the level of detail in an image
  - thought experiment: photograph of a newspaper—can you read the print?
  - measured in total pixel count or pixel dimensions
- Useful for…
  - comparing camera sensors
  - images on the web or in email

Spatial Resolution

- Spatial resolution describes number of pixels to area
  - measured in pixels or dots per unit area: dpi, ppi, lpm, etc.
- Useful for…
  - printed photographs

Demo: Image & Canvas Size

- Setting image size
  - Image → Image Size…
  - more pixels = bigger image = bigger file
  - use Constrain Proportions
  - Bicubic Smoother vs. Bicubic Sharper
- Setting canvas size
  - Image → Canvas Size…

Demo: Cropping

- By selection
  - does not set spatial resolution
  - Image → Crop
- By Crop tool
  - sets spatial resolution
  - provides visualization mask
  - rotation & perspective cropping

Questions

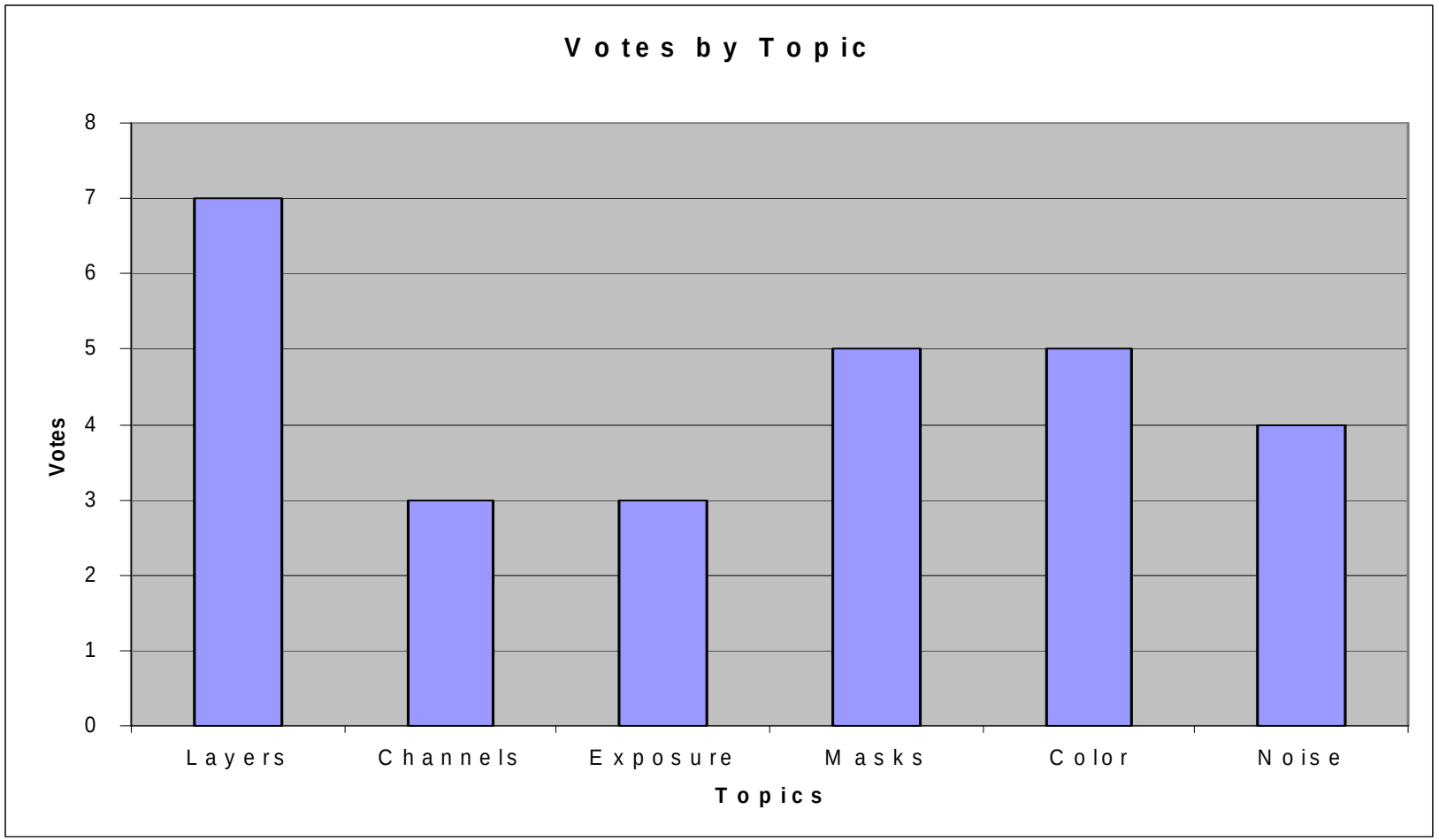
Understanding Histograms

Concept

Histogram 101

- Visualizes a distribution of objects
- Shows the number of objects by category
  - categories on x-axis
  - count on y-axis

Histogram: Votes by Topic



Histogram: Votes by Difficulty

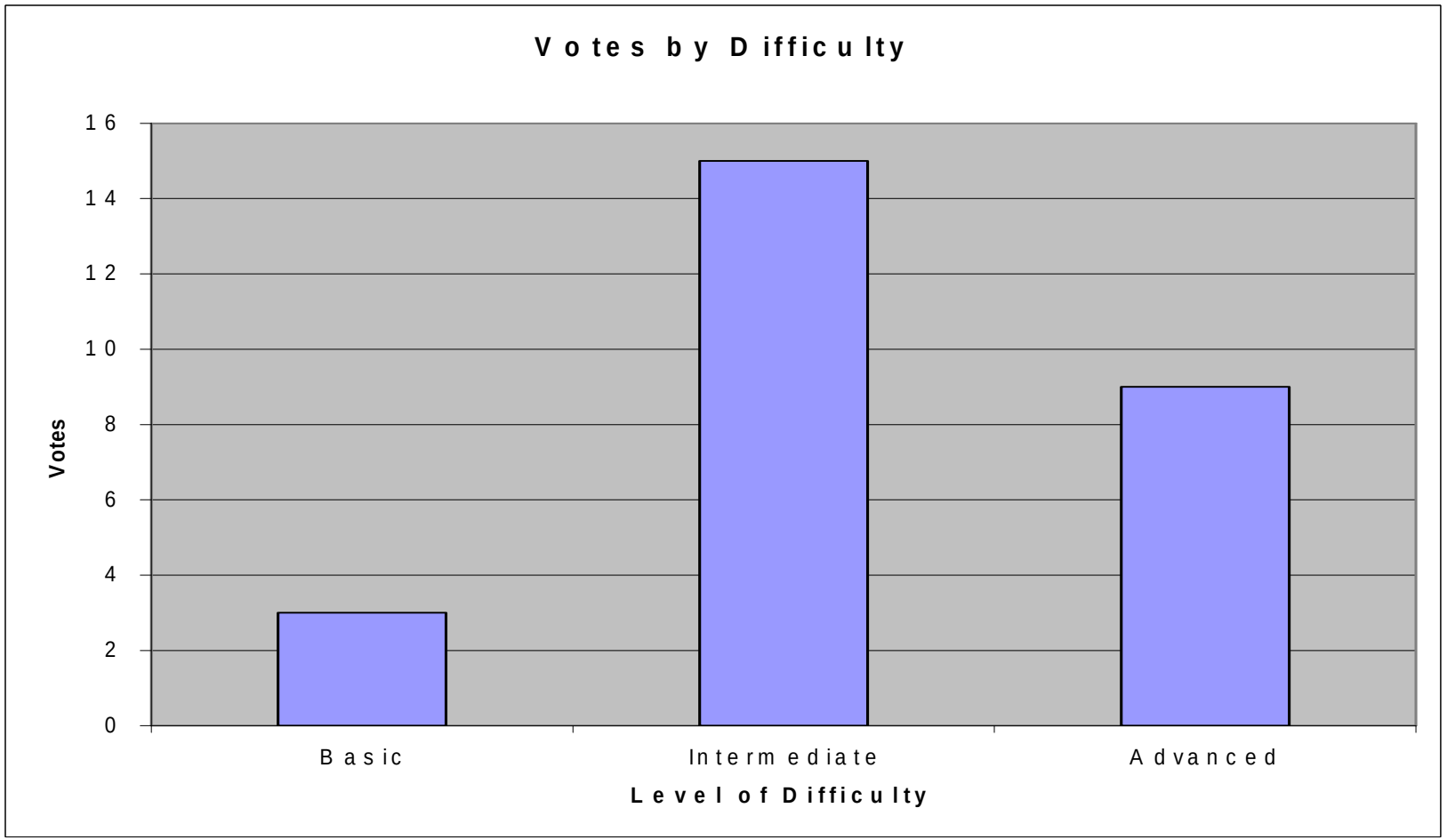
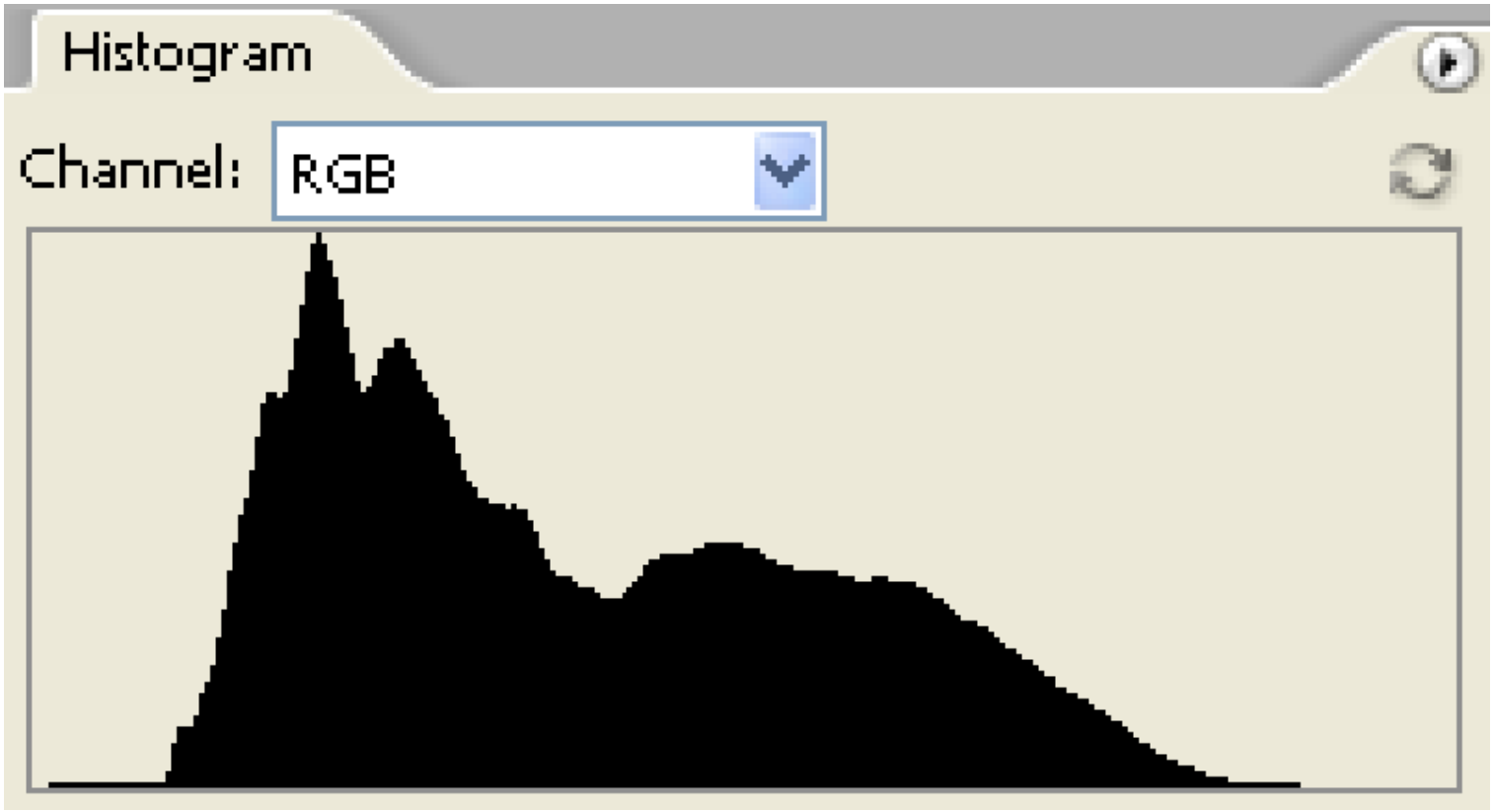


Image Histogram

- Shows number of pixels, categorized by brightness
  - luminosity (or “brightness”) levels along x-axis, sorted from darkest to lightest
  - pixel count along y-axis

Example Image Histogram



Exercise: Describe Histogram of…

- Describe the histogram for a photo of…
  - a black stallion at night
  - a polar bear in a snowstorm
  - a smooth gradient from black to white
  - a black-white gradient surrounded by a thick gray border

The “Ideal” Histogram

- There is no ideal histogram
  - different images have unique tonal distributions
- Most images benefit from a wide distribution of tonality
  - …because most scenes contain near-black and near-white tones, so the image should, too!

Questions

The End

Thank you!