



# Announcements

---

- Chapter 8 for today



# More Digitization

*Light, Sound, Magic:  
Representing Multimedia  
Digitally*

© Lawrence Snyder, 2008



Decimal number system has ten possible numbers in the first position.

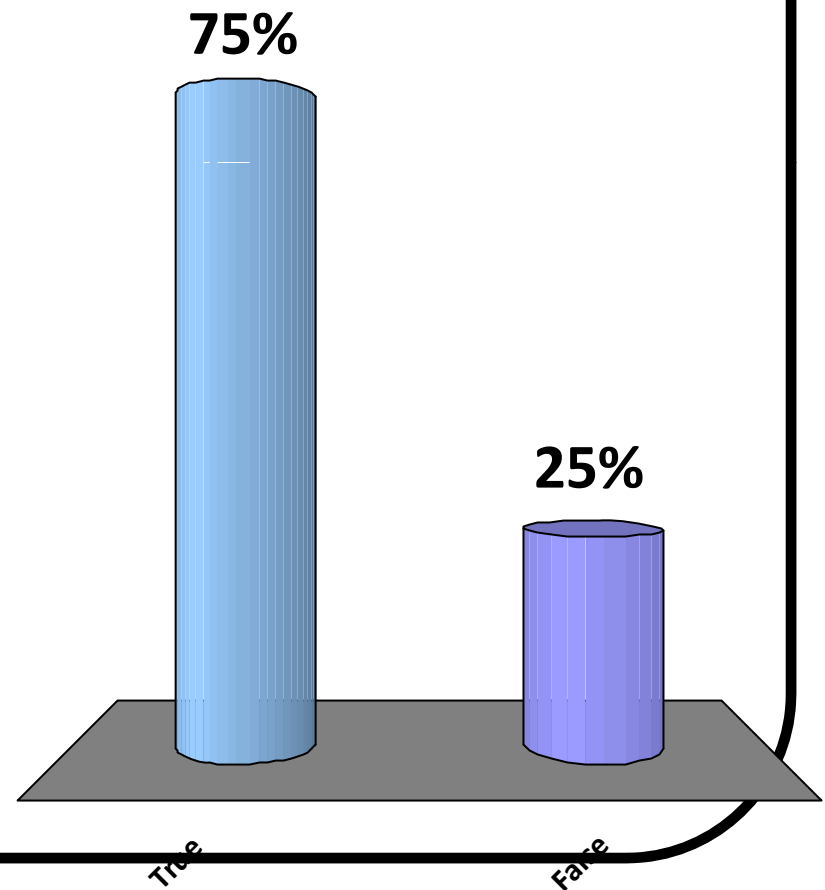
---

1. True
2. False



# Binary has two possible numbers in the first position

1. True
2. False





# Black and White Colors

- A byte is allocated to each **RGB** intensity
  - The smallest intensity is 0000 0000
  - The largest is 1111 1111 in binary
    - = 255 in decimal
    - = FF in hexadecimal
- Black (#000000) is no color
- White (#FFFFFF) has full intensity for each RGB color



# Practice

- RGB

- #FFFFFF = \_\_\_\_\_

- #000000 = \_\_\_\_\_

- #333333 = \_\_\_\_\_

- #888888 = \_\_\_\_\_

- #00FF00 = \_\_\_\_\_

- #FF0000 = \_\_\_\_\_

- #0000FF = \_\_\_\_\_



# More practice

- #00FFFF = \_\_\_\_\_
- #FF00FF = \_\_\_\_\_
- #FFFFFF00 = \_\_\_\_\_
- (255, 0, 0) = \_\_\_\_\_
- (0, 255, 0) = \_\_\_\_\_
- (255,255,0) = \_\_\_\_\_
- (255,255,255) = \_\_\_\_\_
- #AA8866 = \_\_\_\_\_
- #00CCFF = \_\_\_\_\_



## Lighten Up: Changing Color by Addition

- What color does this represent:  
1100 1000 1100 1000 1100 1000
- Each byte contains the decimal value 200.  
The color is RGB(200,200,200).
  - In HTML, write in hexadecimal #C8C8C8
  - Equal amounts of red, green, and blue, closer to white than black (medium gray)
  - All colors with equal RGB values are black, white, or gray





# To Increase Intensity: Add in Binary

- To make a lighter color of gray, change the common values to be closer to white (larger numbers)
  - For example, add 0001 0000 (decimal 16) to each color:

1101 1000 1101 1000 1101 1000  
RGB(216,216,216)

1100 1000	binary representing decimal number	200
+ 1 0000	binary representing decimal number	16
<hr/> 1101 1000	binary representing decimal number	<hr/> 216

*Figure 11.1. Adding 16 to an RGB value.*



# Video

- NetPoint Video on Digital Imaging
  - <http://uweoconnect.extrn.washington.edu/digitalimagingdslfit7/>



# Digital Colors

---

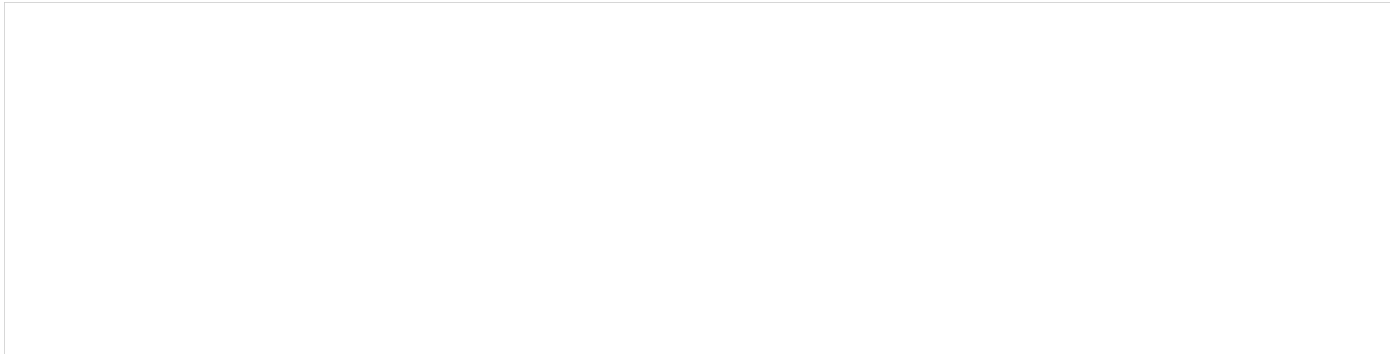
- Color Synthesis site

- <http://www.telecable.es/personales/alberto9/color/index.htm>



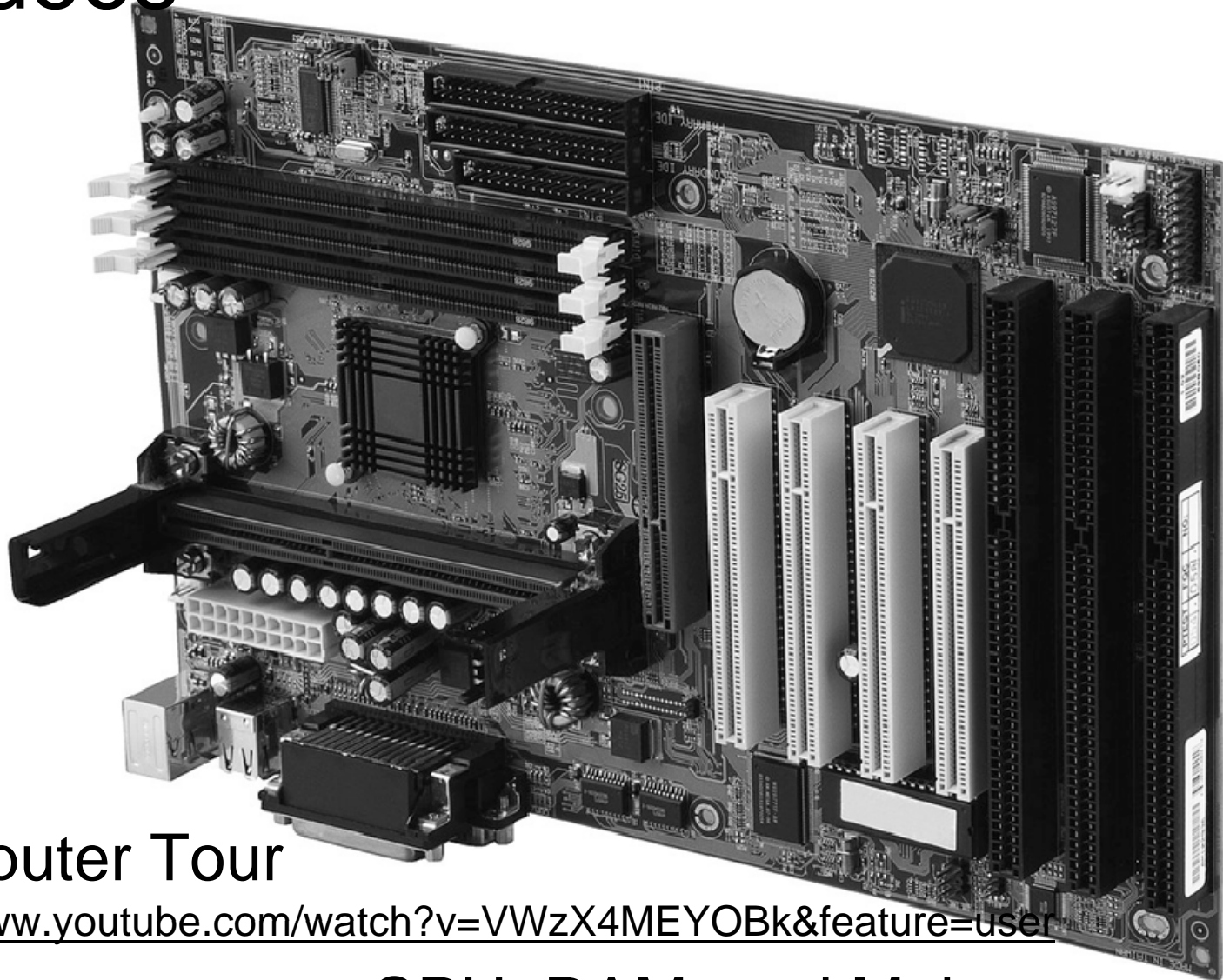


# How a Computer Works





# Videos



- **Computer Tour**

<http://www.youtube.com/watch?v=VWzX4MEYOBk&feature=user>

- **Build a computer: CPU, RAM, and Mobo**

<http://www.youtube.com/watch?v=YFrB3rC9Avs&feature=related>