

## Announcements

- Chapter 8 for today

## More Digitization

*Light, Sound, Magic:  
Representing Multimedia  
Digitally*

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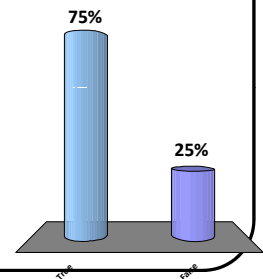
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Decimal number system has ten possible numbers in the first position.

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

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## Practice

- RGB
  - #FFFFFF = \_\_\_\_\_
  - #000000 = \_\_\_\_\_
  - #333333 = \_\_\_\_\_
  - #888888 = \_\_\_\_\_
  - #00FF00 = \_\_\_\_\_
  - #FF0000 = \_\_\_\_\_
  - #0000FF = \_\_\_\_\_

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## More practice

- #00FFFF = \_\_\_\_\_
- #FF00FF = \_\_\_\_\_
- #FFFF00 = \_\_\_\_\_
- (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

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## 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
1101 1000	binary representing decimal number	216

Figure 11.1. Adding 16 to an RGB value.

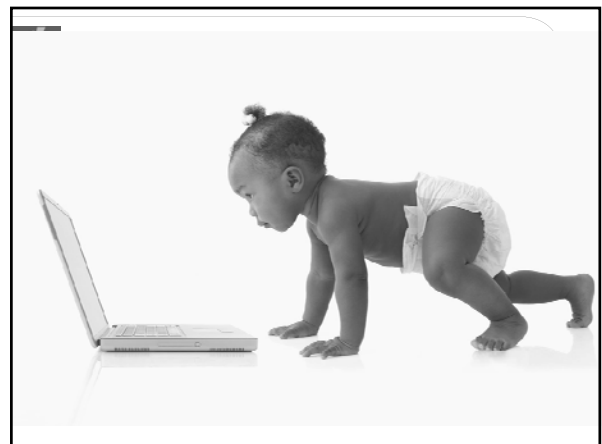
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## Video

- NetPoint Video on Digital Imaging
  - <http://uweoconnect.extrn.washington.edu/digitalimagingdsllit7/>

## Digital Colors

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





## How a Computer Works

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## Videos



- **Computer Tour**  
<http://www.youtube.com/watch?v=VWzX4MEYOBk&feature=use>
- **Build a computer: CPU, RAM, and Mobo**  
<http://www.youtube.com/watch?v=YFrB3rC9Avs&feature=related>