

Activity Guide - Personal Favicon Project



Objectives

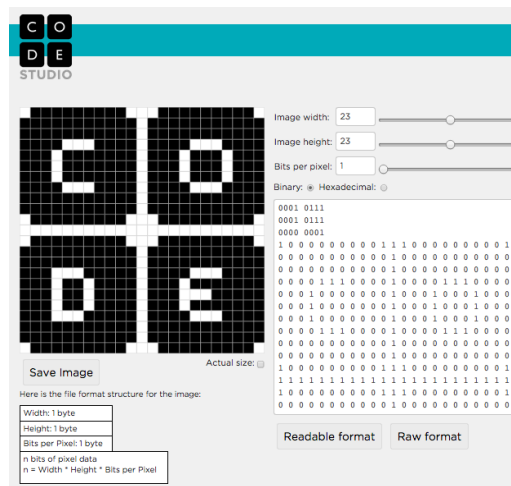
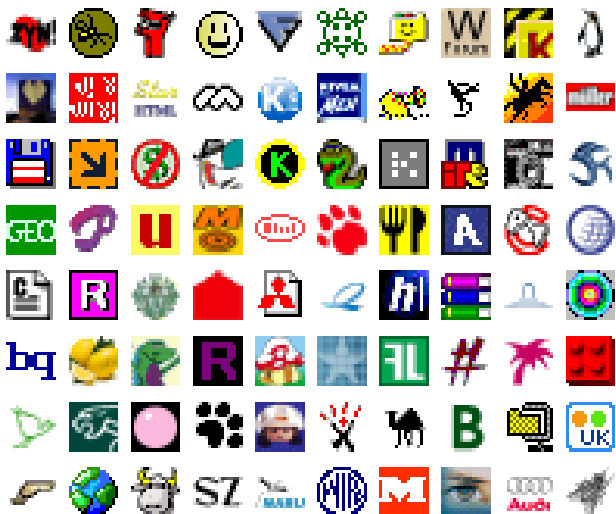
- Encode a 16 x 16 or 32 x 32 pixel image with at least 12 bits per pixel.
- Create and encode a color image of your own design.
- Describe image metadata and be able to use & manipulate binary numbers when describing colors.

Overview

A favicon is a small image that is typically shown in a web browser's address bar next to the title of the page, in the tab of a web browser, or as an icon on a handheld device. A favicon for Code.org is shown to the right.



Favicons are designed by artists and programmed into web pages by web designers. Below are some examples of favicons—you might recognize some!



Directions

1. Create a personal favicon and encode it using the Pixelation Widget [unit 1, lesson 8, module 7](#) on code.org.
2. The image you make should represent your personality in some distinctive way.
3. Your image must be encoded with at least 12 bits per pixel and be at least 16 x 16 pixels.
4. [optional] when you've finished, you can use this [chrome extension](#) to apply your personal favicon to a website of your choice (e.g. code.org).

Things to think about

- A simple design is probably the best solution.
- This will be a very tiny image when you are done. Tiny details and slight variations in color probably won't be noticeable. Use the "actual size" option to see what it really looks like.
- Plan ahead by sketching your design (preferably on a sheet of graph paper if you can) before starting to encode the bits.

Answer the questions below as part of your favicon project submission.

<Favicon & reflection question>

1. Paste a screen snip of your completed favicon in the space below.

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2. Copy-and-paste **all** your favicon bit data **in readable format** in the space below.
(There's no need to use a small font. It's fine if the data goes on for a couple pages.)

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3. Explain the image in your favicon. Why did you choose this particular image? How is it a reflection of you?

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<Content questions>

4. Which part of your favicon bit data would be considered metadata? What does each piece of metadata represent in your image?

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5. How many **total bytes** does your image contain? Explain/show the work that leads to this answer.

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6. Pick one color that appears in your favicon that does NOT have all 1s or all 0s in **any** of its three RGB channels.

Color name:		Binary representation of color:			
		Amount of red/green/blue in color (in binary):			
			Note: None of the 3 cells above should have all 1's or all 0's		

You decide that some of the pixels that are this color need to be a slightly brighter shade of the same color. Other pixels need to be a slightly darker shade of the same color. Give the binary representations of these two new colors.

Binary representation of brighter shade of same color:			
Amount of red/green/blue in brighter shade (in binary):			
Binary representation of darker shade of same color:			
Amount of red/green/blue in darker shade (in binary):			

The rubric below will be used when scoring your submission for the favicon project.

Criteria	1 pt	2 pt	3 pt	Points earned
Image Points				
Favicon is a valid size	Some other size	16x16 pixels	32x32 pixels	
Favicon is encoded in RGB color using at least 12-bits-per-pixel	12 bits per pixel	15 bits per pixel	18 bits per pixel	
Favicon is a discernible image, and not merely a pattern	Just a pattern or unclear image	Somewhat clear image	Clear image	
Favicon uses a variety of discernable colors (black & white may be used, but do not count towards your color total)	< 5 colors used	5 to 8 colors used	> 8 colors used	
<i>Image point total (out of 8 points max):</i>				
Question points				
Response to reflection questions clearly explains the image and its significance. (Questions 1-3)	No	Somewhat	Yes	
Question 4	Significant misconceptions	Minor misconception	No misconception	
Question 5	Significant misconceptions	Minor misconception	No misconception	
Question 6	Significant misconceptions	Minor misconception	No misconception	
<i>Question point total (out of 12):</i>				
<i>Project point total (out of 20):</i>				