

Alp Tuğan / 18.03.2024

Creative Coding

Three Steps Transformation to Computational Thinking →



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BREAK

"First, solve the problem. Then, write the code."

Assignments

Computational Thinking Framework

The method for Problem-Solving

1. DECOMPOSITION
2. ABSTRACTION
3. PATTERN RECOGNITION
3. ALGORITHM DESIGN

Let's make it more clear

Start with your known register. Use verbal, visual, written representations.

1. Decomposition

Take notes or draw abstracted shapes using pen and paper. Do not code anything. Analyze the subject.

2. Flow

Identify the procedural flow to solve the problem. Switch between registers. Use diagrams and arrows or take notes again.

3. Translation

Open the code editor. Identify variables and functions from previous step. Write to your code. Refer to p5Js reference page. **Keep running your code whenever you add new lines to check if it is ok.**

4. Algorithm

Implement the flow design to your code. Conditional statements `(if/else)`, repetitions `for loops`, trigonometric functions `sin()`, and probability `random()`

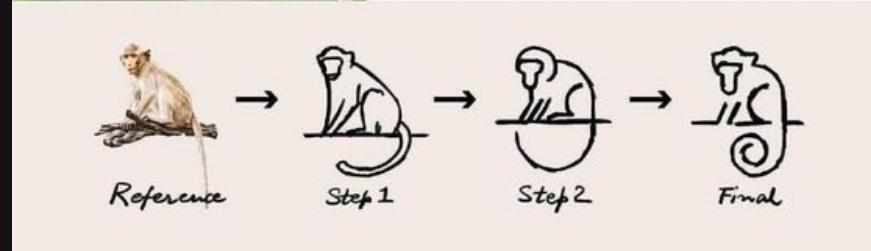
Subject / Problem

Note down everything you see on your interface design formally. Note down each element what you see. Every single color and shape matters.

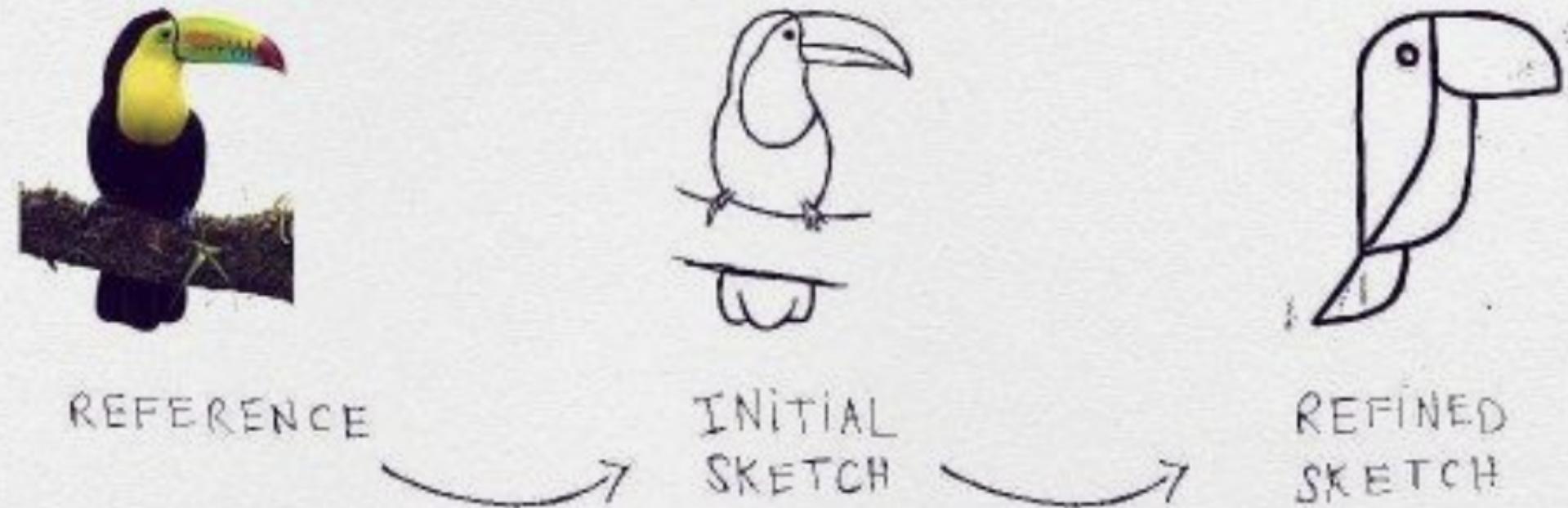




Imagine the abstracted forms



Feature Extraction*

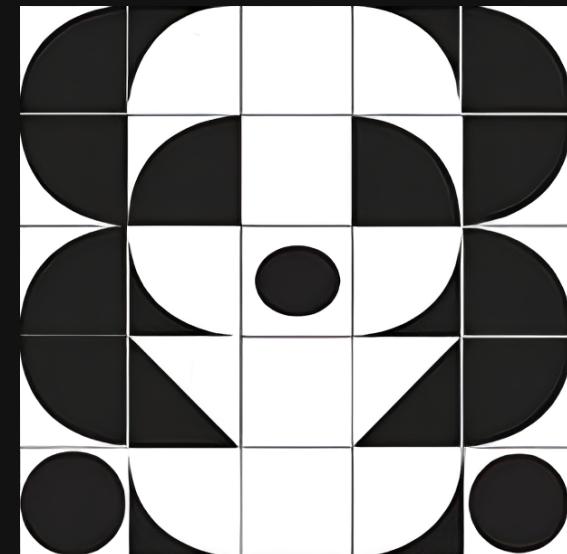


* The term Feature Extraction comes from Neurophysiology represents extracting information from imagery objects.

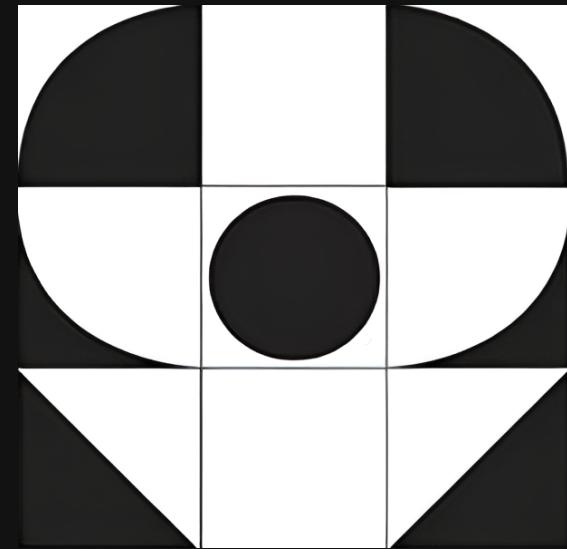
Express the Panda Using Simple Shapes



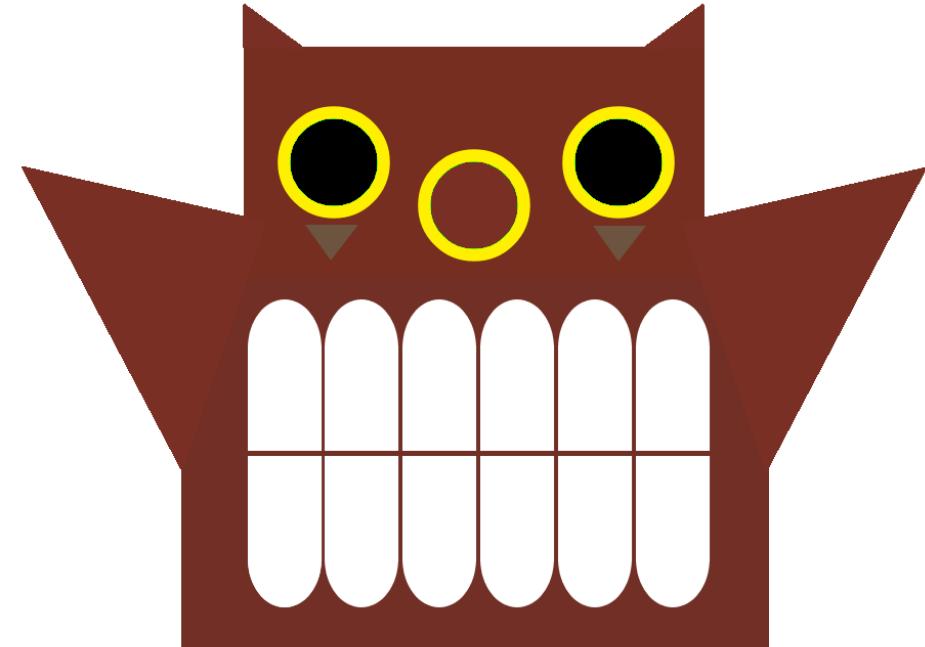
Original Image



Abstracted via Simple Shapes



Abstracted more via Simple Shapes

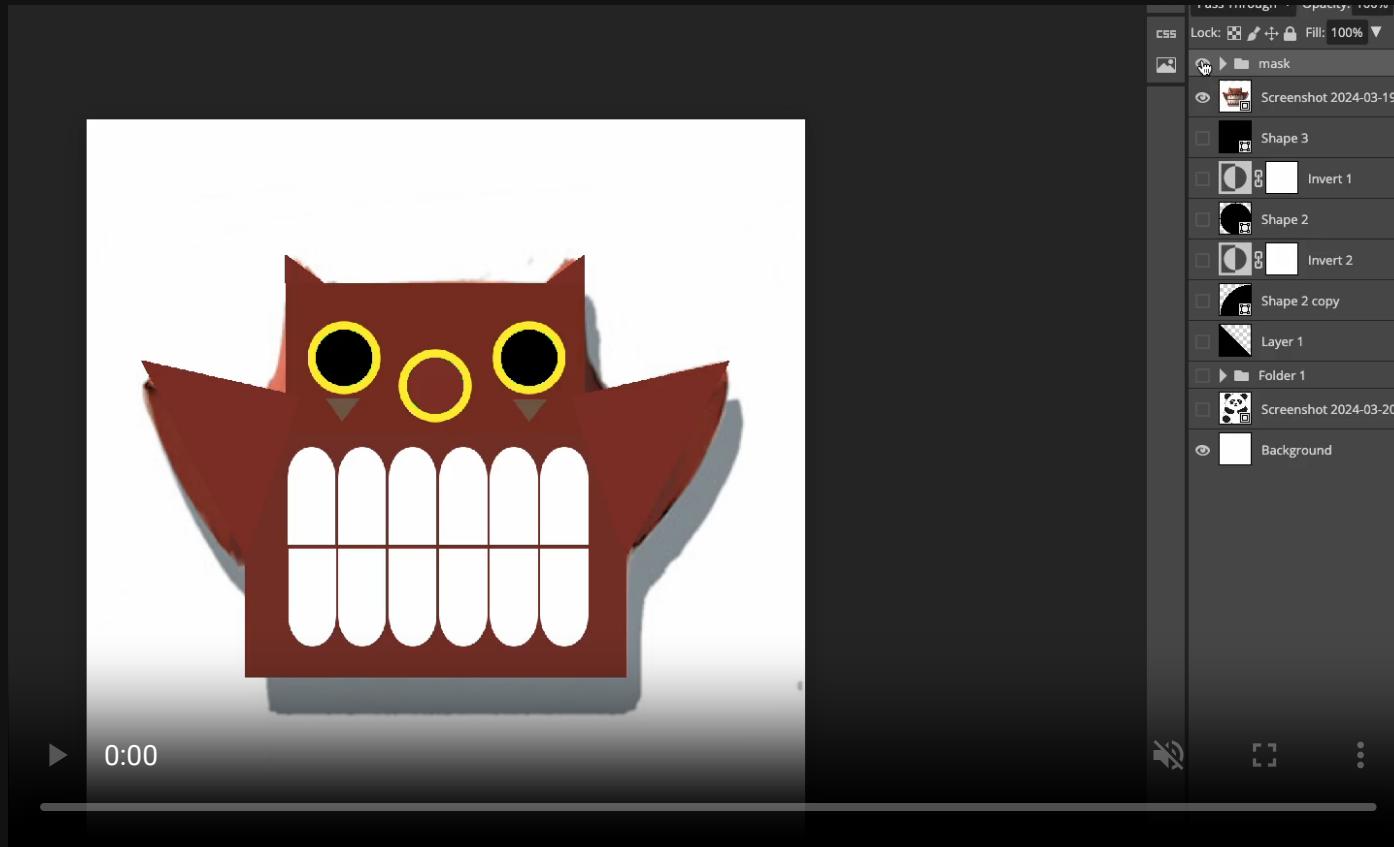


1. Decomposition (15 minutes)



- Determine your canvas size.
- Draw the abstracted version of the mask.
- Note down each shape that you see.
- Note down each shape properties
 - color: white, black, yellow, red
 - position: x and y positions.
 - stroke: Is there stroke around the shape?
 - size: width and height

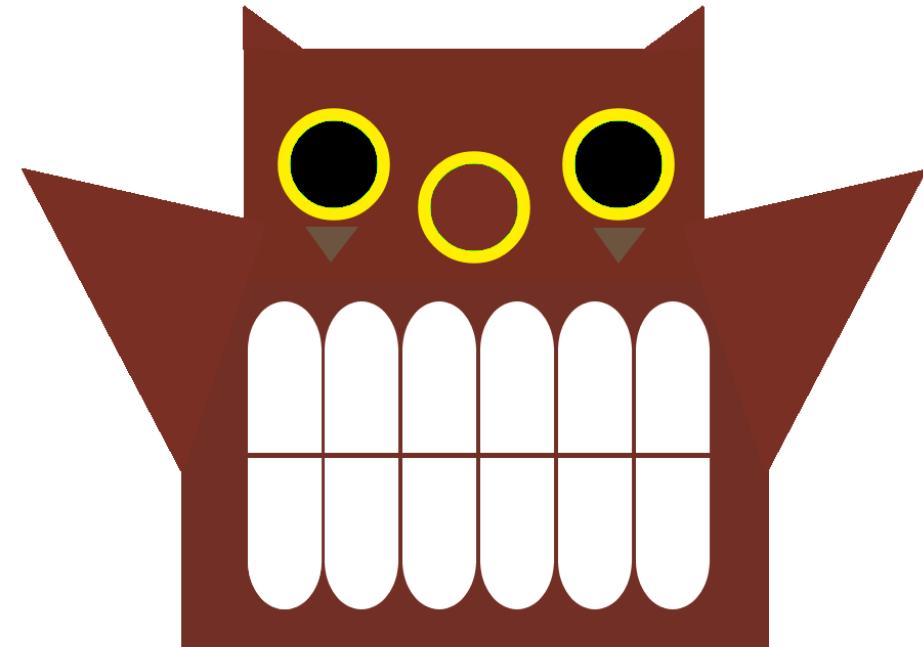
Abstracted Shape

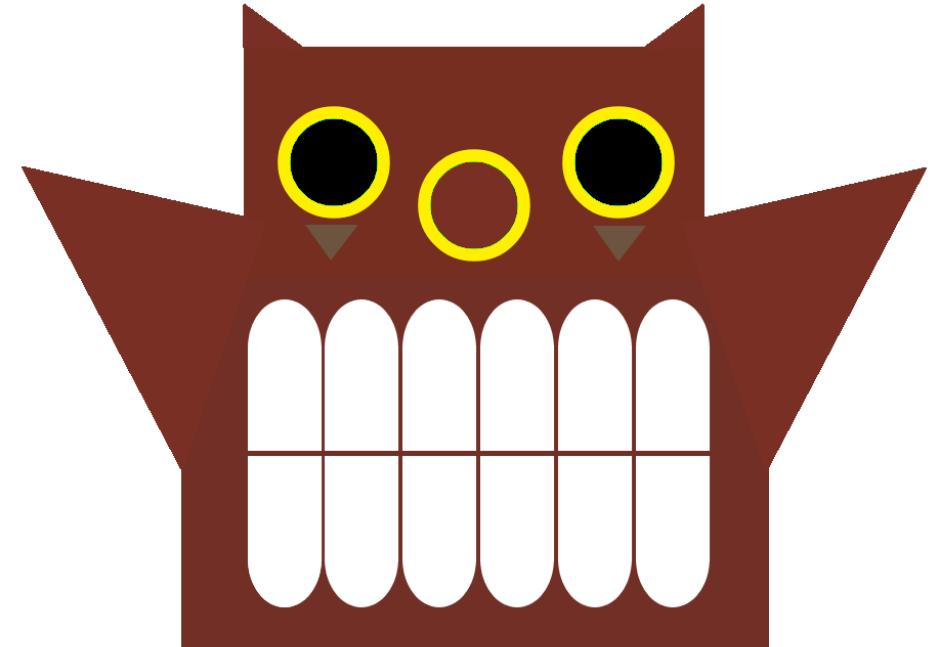


2. Flow (15 minutes)

In this step, we set the order of our notes. We determine what to draw first. Is there any hierarchy between the objects you identified in the previous step? What are the specific colors?

- Determine variables such as color values.
R,G,B codes
- Decide the drawing order of your shapes.
- Layer **1** → Rectangles for the mask base must be in lowest layer.
- Layer **2** → Triangles can sit onto rectangles.
- Layer **3** → Eyes, nose, makeup triangles, and teeth can sit on top most.
- Finally, determine the repetitions. What is repeated in this mask?





3. Translation (15 minutes)

Determine the equivalents of your notes in P5Js language. Create code blocks to reorder them according to the flow.

- Mask shape 1 on top → `rect(x,y,w,h)`
- Mask shape 2 at bottom → `rect(x,y,w,h)`
- Mask shape 1-2 color → `fill(r, g, b)`
- Mask shape 3 Horn Left → `triangle(x1, y1, x2, y2, x3, y3)`
- Mask shape 4 Horn Right → `triangle(x1, y1, x2, y2, x3, y3)`
- Continue to code...



4. Algorithm

↻ abc 12
34

- Open your editor.
- Declare all required variables such as color(R, G, B)
-



BREAK

10 mins.

 [Link to submission page](#)

p5.js Community Sketch

p5.js Community Sketch Open Call

We are accepting p5.js sketches from our community! Curated sketches will be featured on the new [p5.js](#) website launching this spring. Please ensure to include `describe()` in your submitted sketch code, so it is accessible for screen reader users.

Curated by [Zainab Aliyu](#), the inaugural collection is especially interested in sketches that explore access, experimental time-keeping, text as image, and algorithmic improvisation.

Submission Deadline: **March 31st**

 [Slideshow](#)



Curated by
[p5.js](#)

Submissions by 0

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"First, solve the problem. Then, write the code."

John Johnson

Assignments

❶ Implement all of the scenes that you design for your game in P5Js.

You can use the codes in my game and implement to yours. Fork my [game template](#) to adapt your game scenes. For those who have different game mechanics than my game, do your best. I want to see the implemented design in P5Js. Please ask to me or your friends in class whenever you need help or get stuck!!! I can provide you tutorials and reference code snippets.

 Upload the sketch to your openProcessing account.

 Submit the openprocessing link.

 Submit the sketch source code as zip file as well.