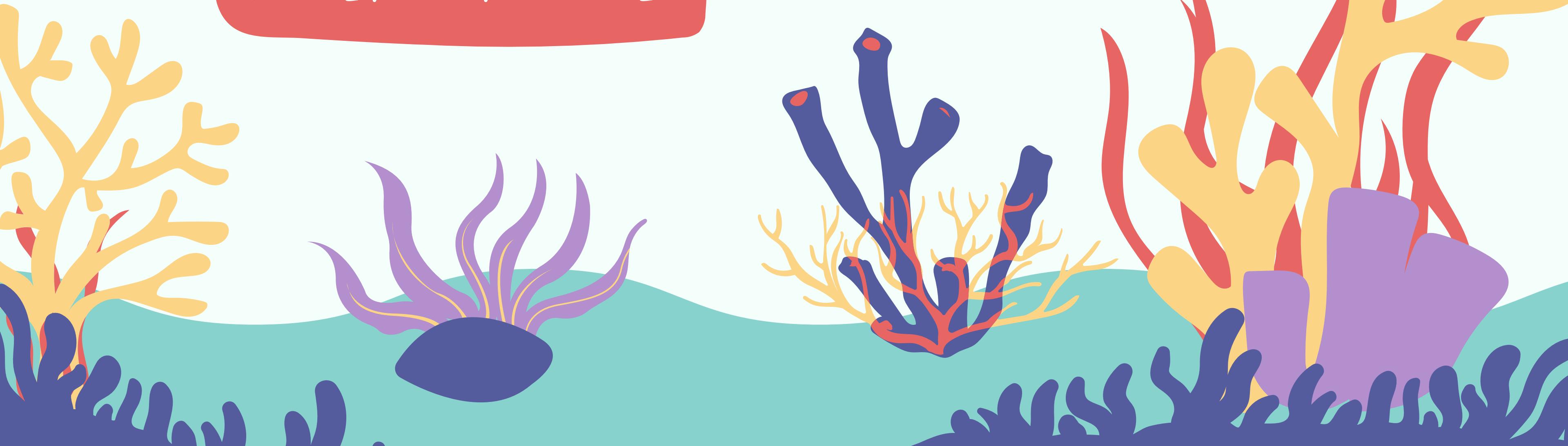


Fish Aquarium

NATE, ILA, CHLOE

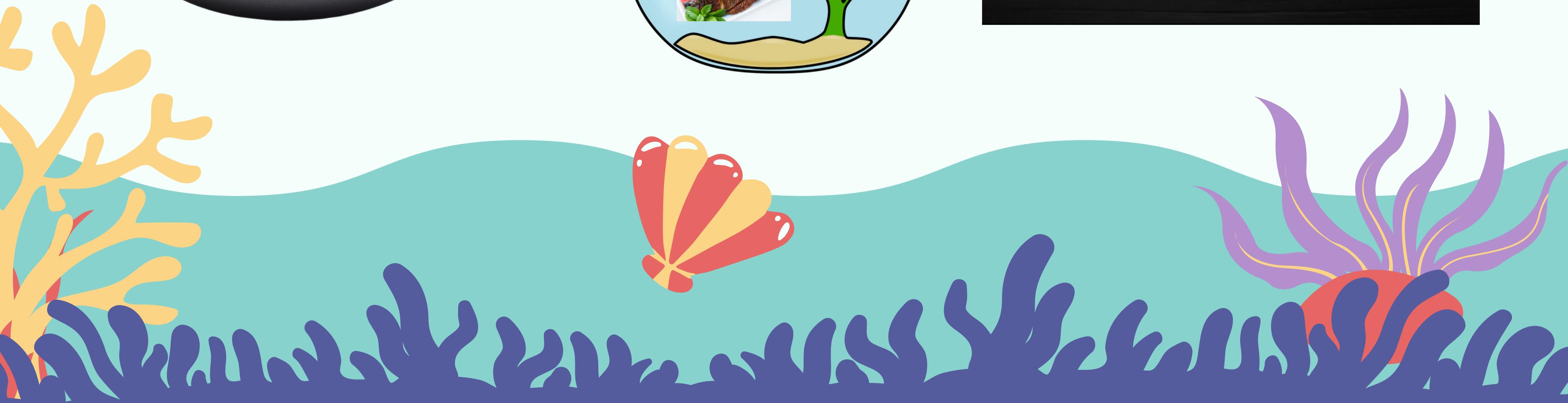
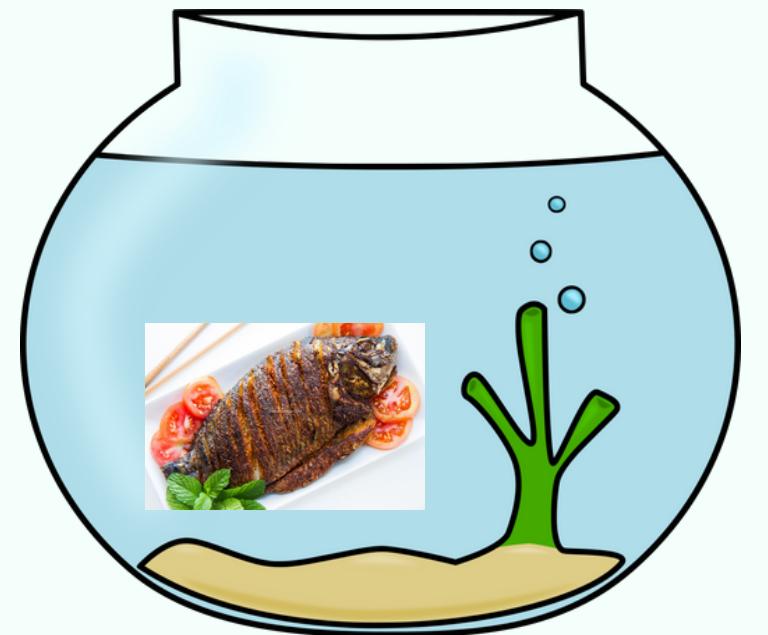


REQUIREMENTS

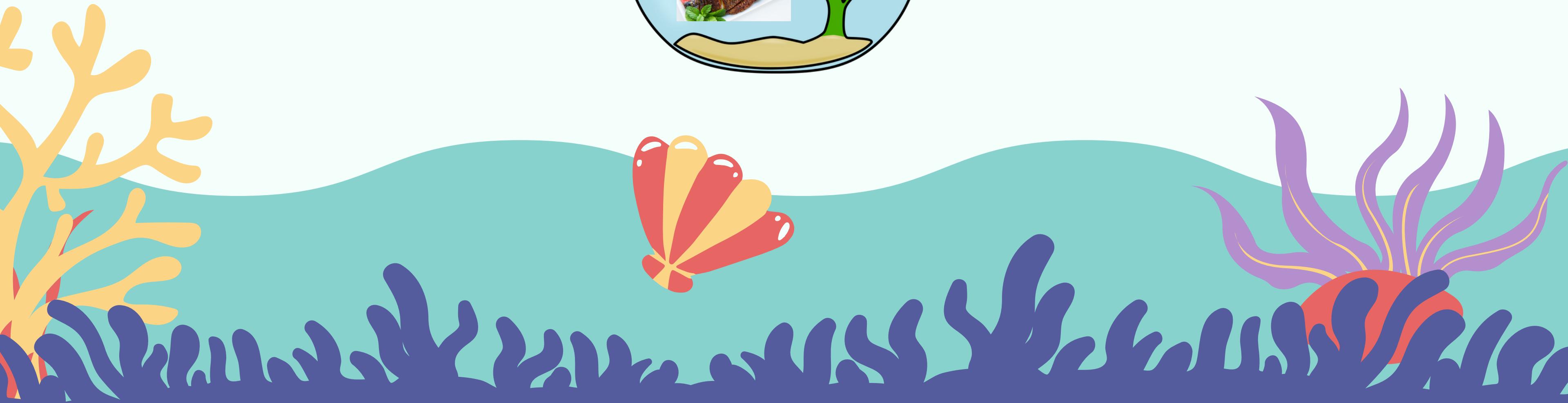
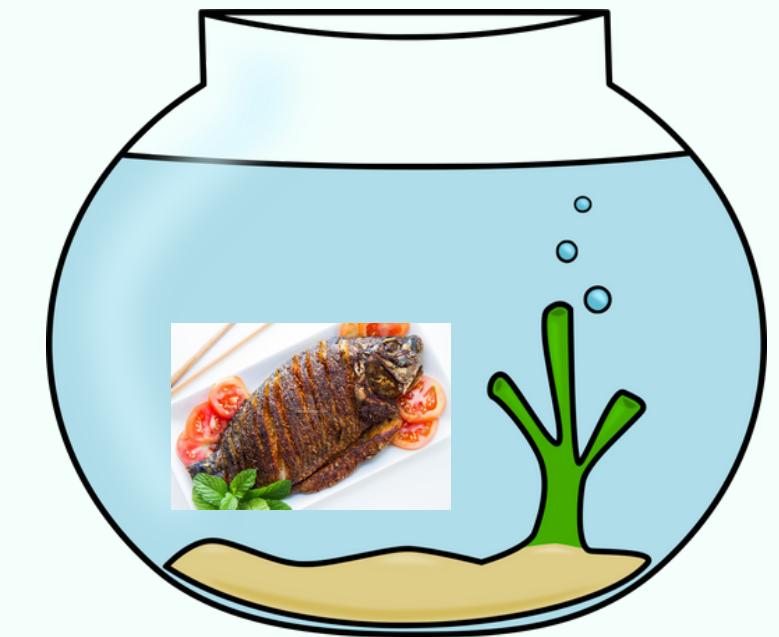
- 1.**
 - Create a variety of shapes to produce a unique, artistic artifact.
 - Use color and size variations to enhance your artwork.
- 2.**
 - Use movement to enhance your artifact.
 - Use iteration (looping) and conditional execution (if statements) to control the drawing.
- 3.**
 - Choose descriptive variable names.
 - Comment code segments or blocks of statements.



BRAIN STORM:

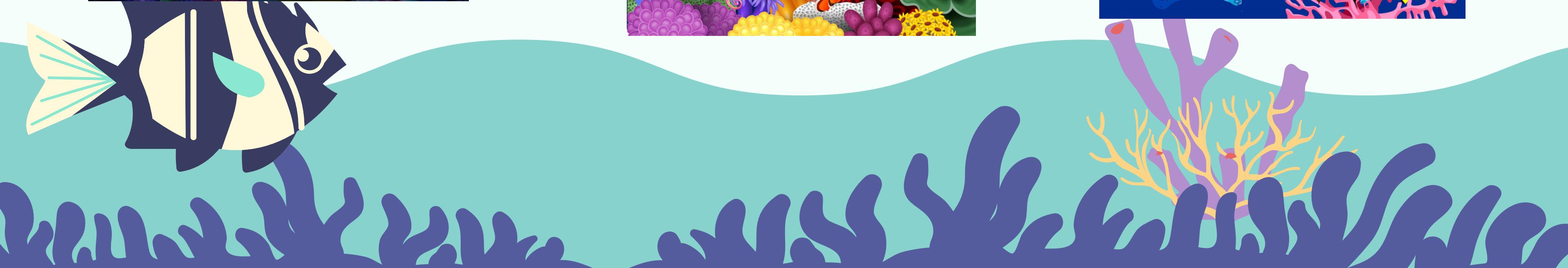


BRAIN STORM:



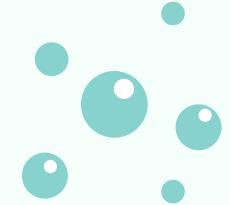
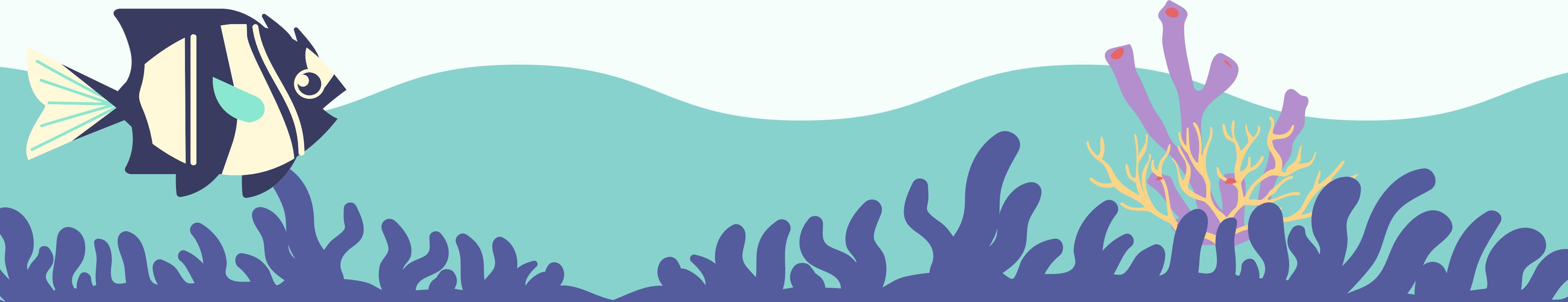
THE PROCESS

- Started finding inspiration for the aquarium on the internet.



THE PROCESS

Started to develop the code for
the fish.



1.

- Create a variety of shapes to produce a unique, artistic artifact.
- Use color and size variations to enhance your artwork.

```
Ad# Draw the fish with eyes and a smile
def draw_fish(x, y, size, color):
    canvas.create_oval(x, y, x + size, y +
size, fill=color) # Body
    canvas.create_polygon(x - size / 2 + 32, y
+ size / 2, x-36, y + size/ 5 - 1, x-36, y +
size * 4 / 5 + 1, fill="black") # Tail Outline
    canvas.create_polygon(x - size / 2 + 30, y
+ size / 2, x-35, y + size/ 5, x-35, y + size
* 4 / 5, fill=color) # Tail Fill
    canvas.create_oval(x + size / 4, y + size
/ 4, x + size / 4 + 5, y + size / 4 + 5,
fill="black") # Left eye
    canvas.create_oval(x + size / 4 * 3, y +
size / 4, x + size / 4 * 3 + 5, y + size / 4 +
5, fill="black") # Right eye
    canvas.create_arc(x + size / 4, y + size /
2, x + size / 4 * 3, y + size / 4 * 3,
start=180, extent=180, style=tk.ARC) # Smiled
a little bit of body text
```



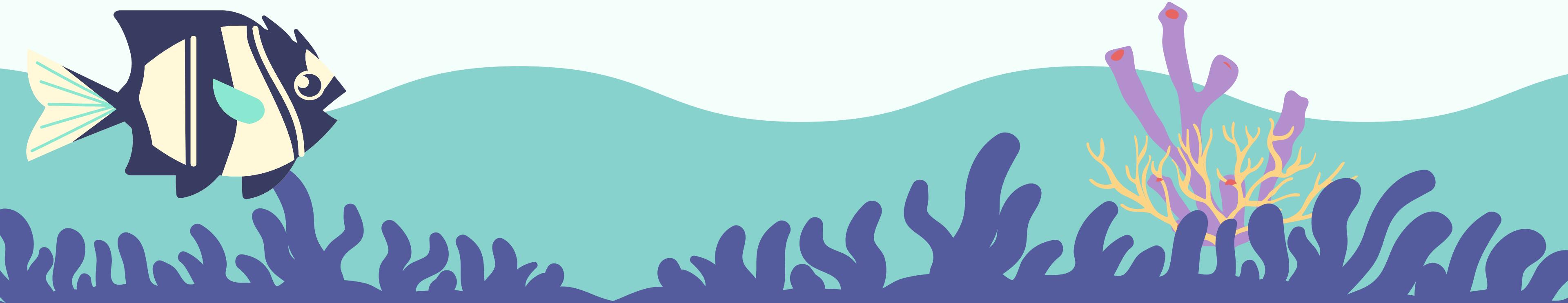
REQUIREMENTS

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THE PROCESS

Developed moving bubbles that rose up the screen.



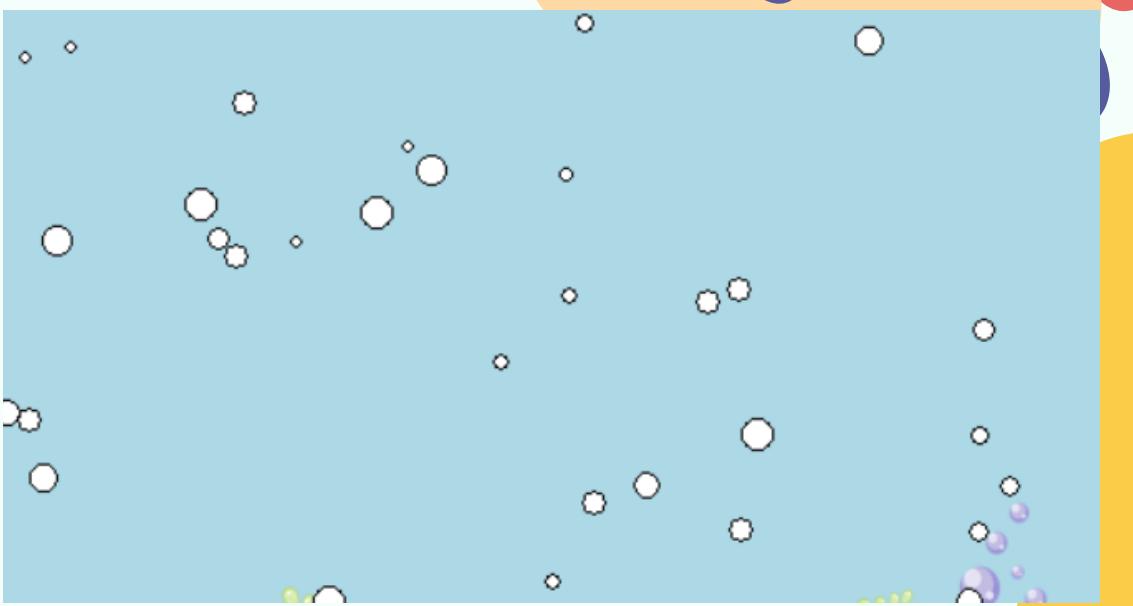
2.

- Use movement to enhance your artifact.
- Use iteration (looping) and conditional execution (if statements) to control the drawing.

```
# Generate random bubbles
if random.randint(0, 100) < 5:
    bubble_size = random.randint(5, 15)
    bubble_x = random.randint(0, 800)
    bubble_y = 600
    bubbles.append((bubble_x, bubble_y, bubble_size))

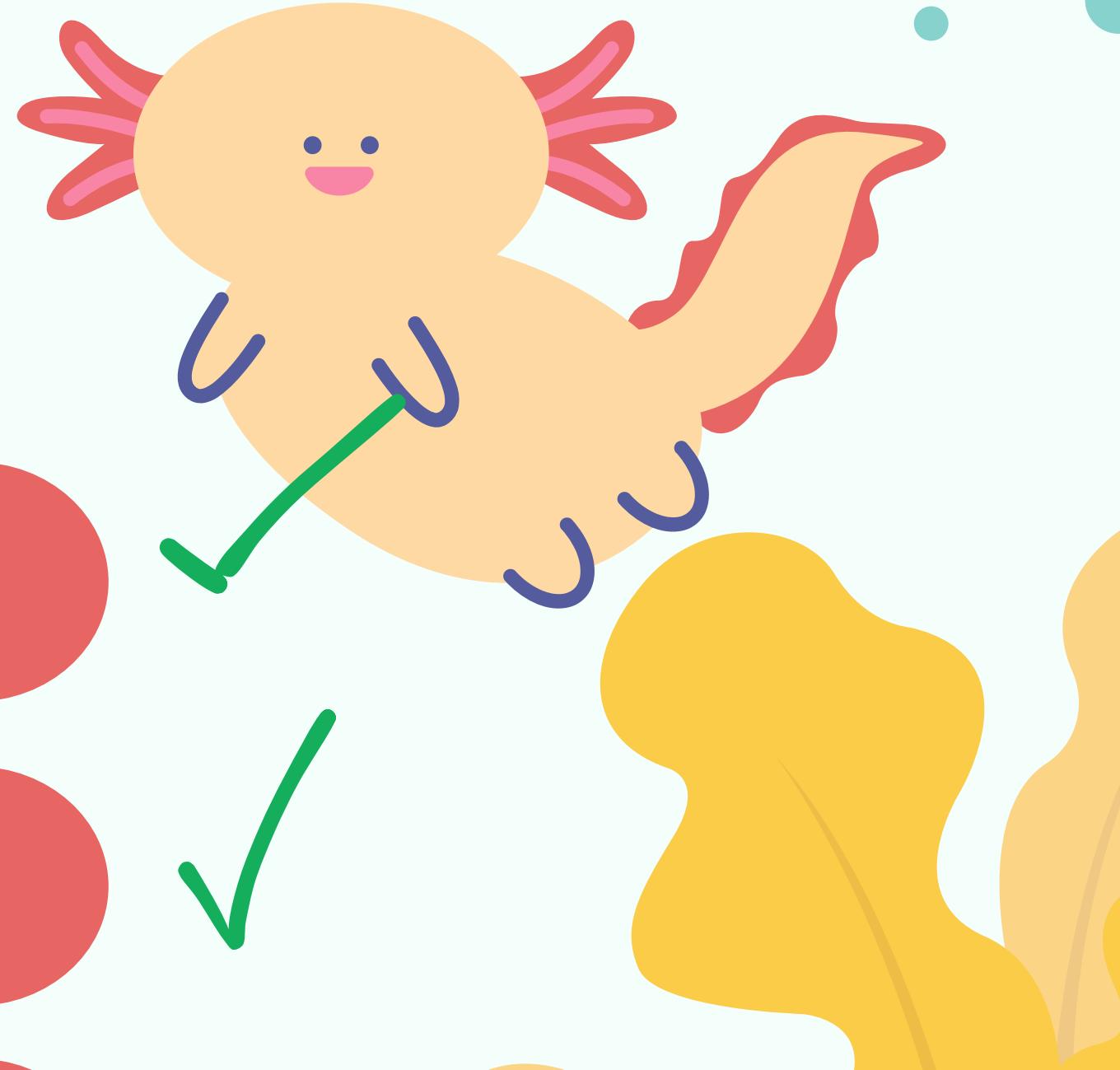
# Move bubbles upward
for i in range(len(bubbles)):
    x, y, size = bubbles[i]
    y -= random.randint(0, 100) / 200 # Adjust the speed
of bubbles here
    bubbles[i] = (x, y, size)

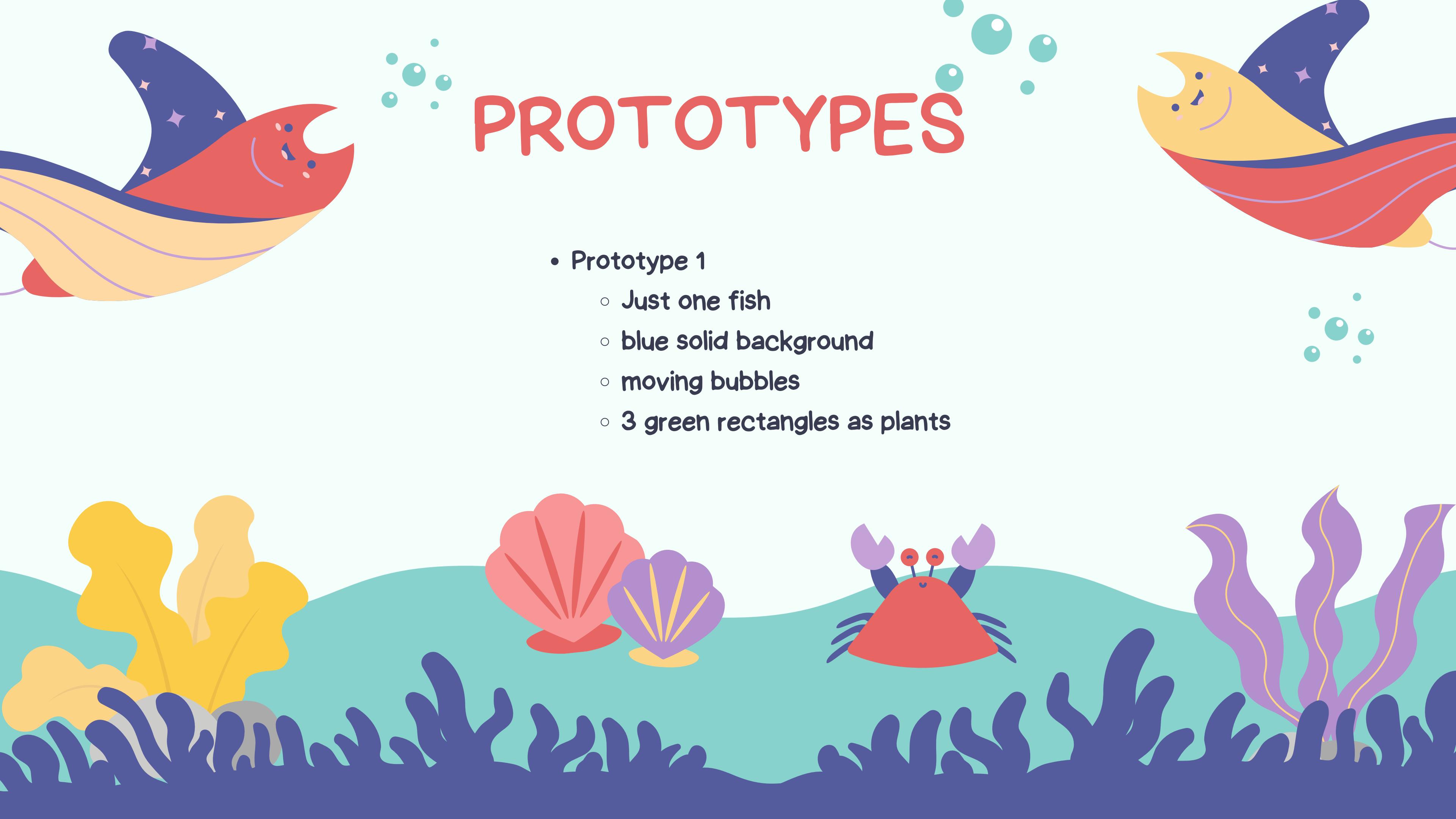
# Draw bubbles
for bubble_x, bubble_y, bubble_size in bubbles:
    canvas.create_oval(bubble_x, bubble_y, bubble_x +
bubble_size, bubble_y + bubble_size, fill="white")
```



REQUIREMENTS

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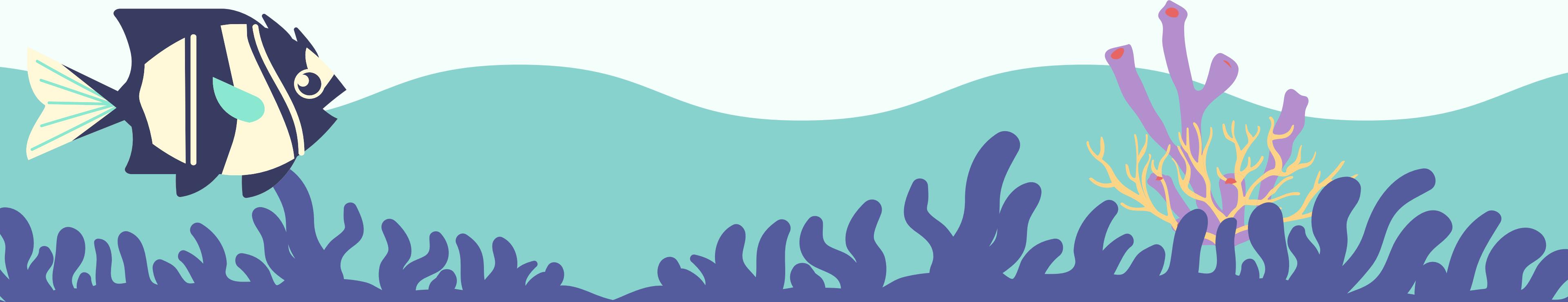


PROTOTYPES

- Prototype 1
 - Just one fish
 - blue solid background
 - moving bubbles
 - 3 green rectangles as plants

THE PROCESS

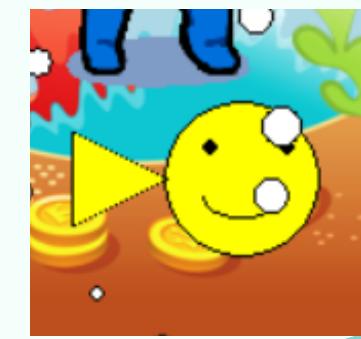
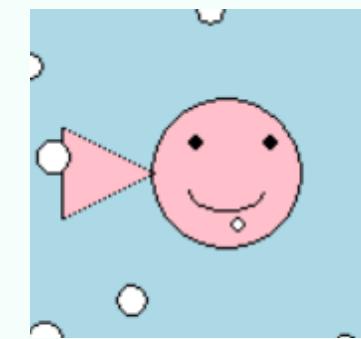
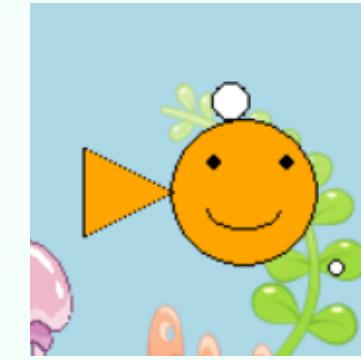
Decided to add 3 fish in total and created code for random speeds of moving fish.



3.

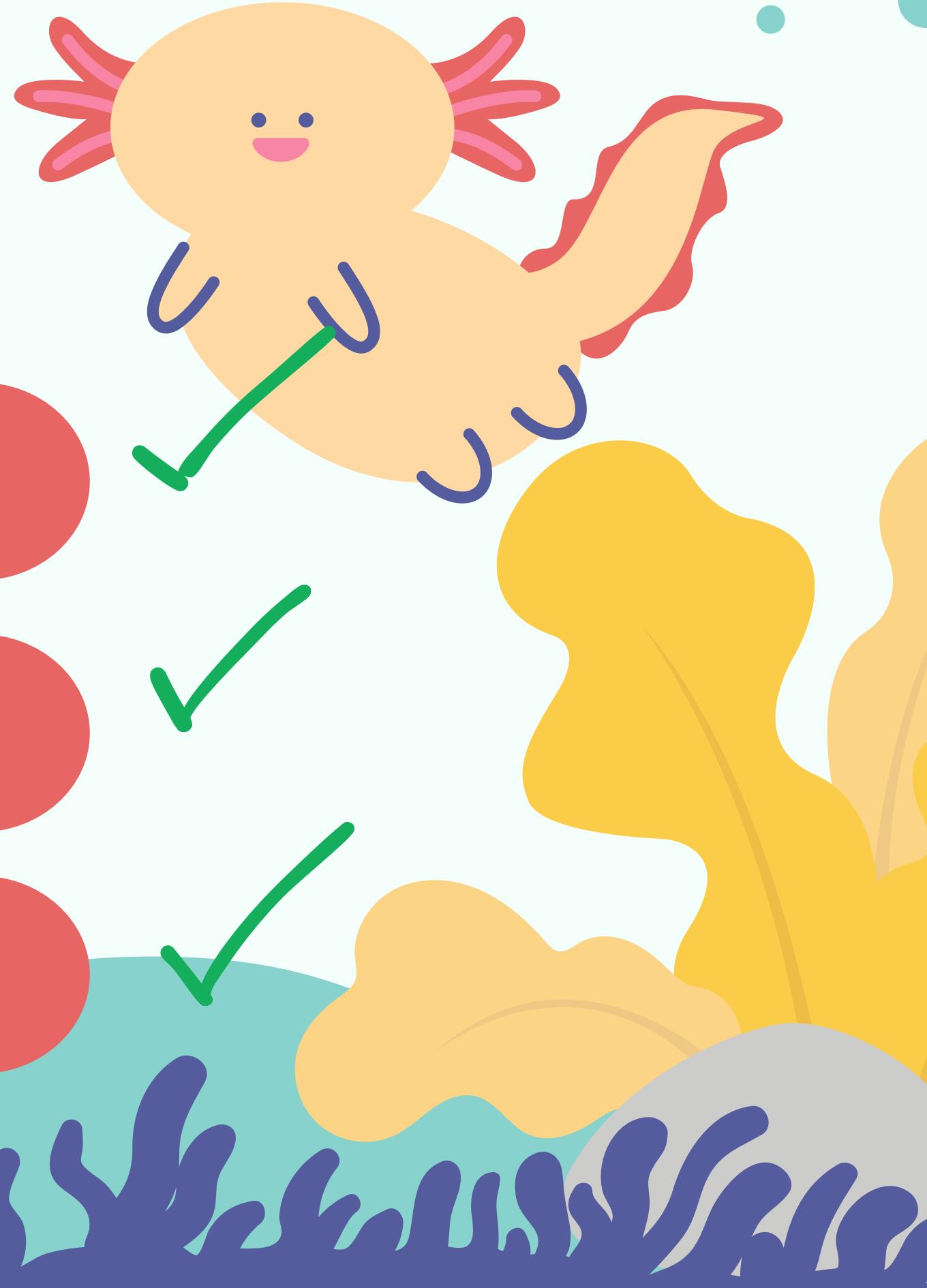
- Choose descriptive variable names.
- Comment code segments or blocks of statements.

```
# Fish properties
fishList = [
    {
        "x": 60,
        "y": 300,
        "size": 60,
        "speed": random.randint(25, 75)/100,
        "color": "orange"
    },
    {
        "x": 60,
        "y": 100,
        "size": 60,
        "speed": random.randint(25, 75)/100,
        "color": "pink"
    },
    {
        "x": 60,
        "y": 500,
        "size": 60,
        "speed": random.randint(25, 75)/100,
        "color": "yellow"
    }
]
```



REQUIREMENTS

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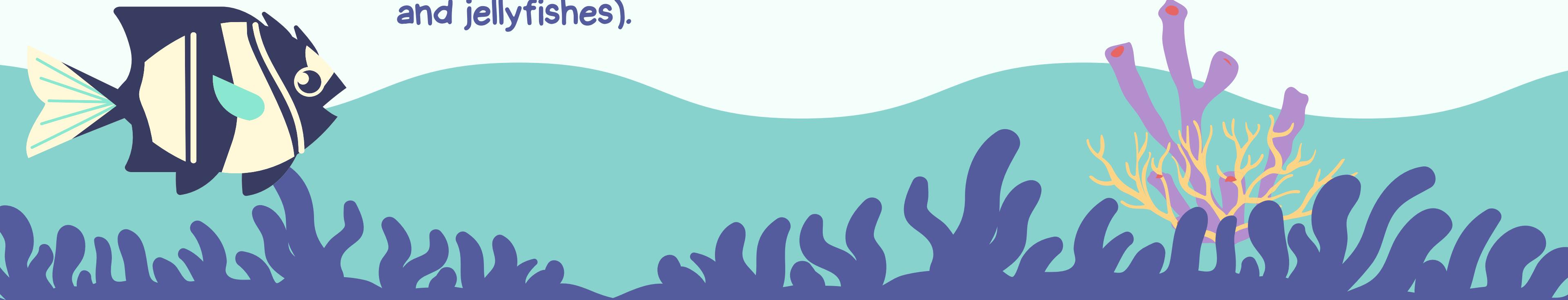
PROTOTYPES

- Prototype 2

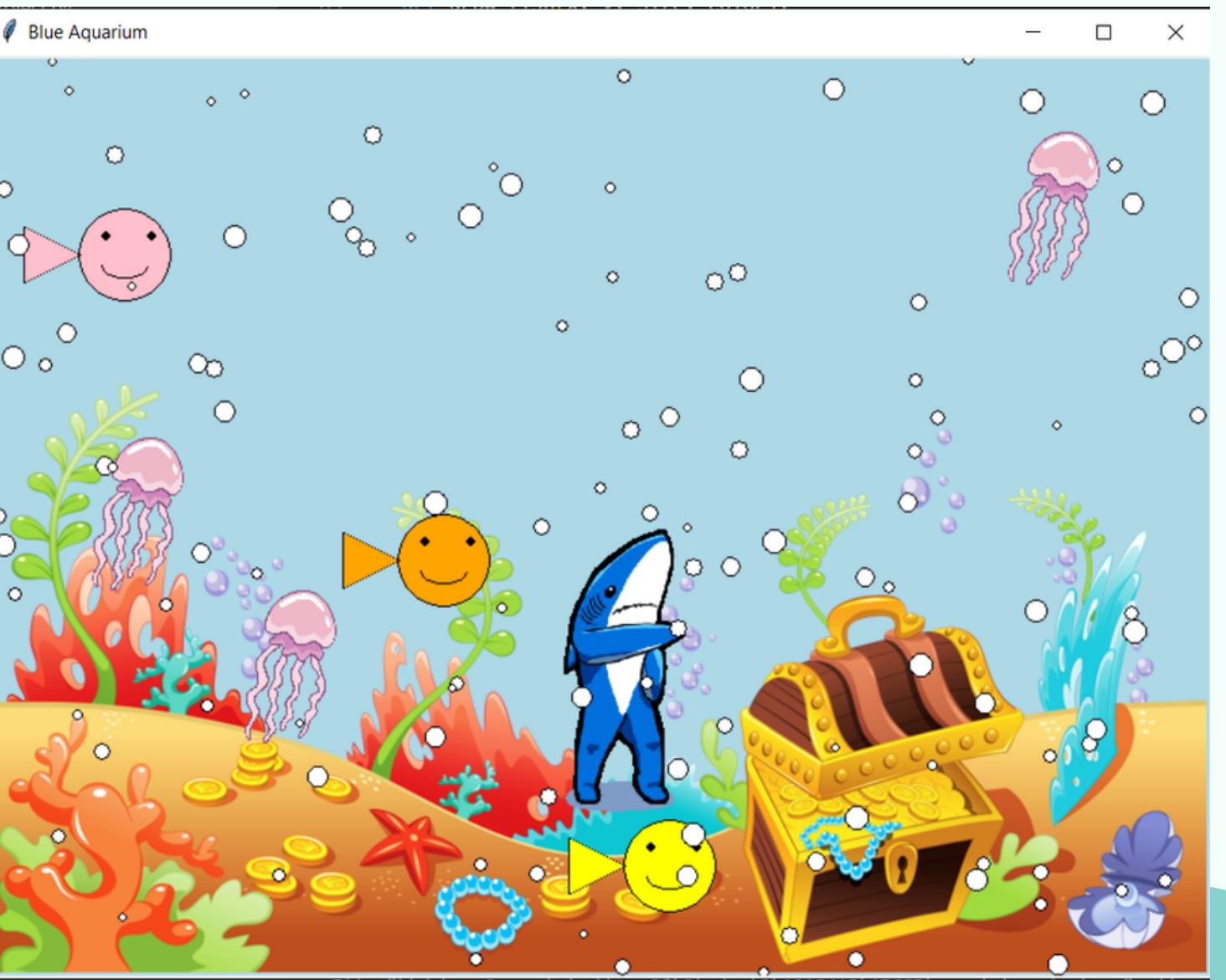
- Multiple, differently colored fish with different speeds
- Added an image for the background
- Removed green rectangles and replaced with the image
- Moving bubbles in random sizes

THE PROCESS

- Found and added background image and color for aquarium.
- Added other various sea animals like the (shark and jellyfishes).



FINAL PRODUCT



THANK YOU!