Implementing Green Screen Algorithm

Thinking Critically about Your Program

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What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    //What goes here?
}
print(bb);
```


- Green devil:
  - Red = 0, Green = 255, Blue = 100

What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
  pp.setRed(0);
  pp.setGreen(255);
  pp.setBlue(100);
}
print(bb);
```


- All pixels are green now…

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What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
  pp.setGreen(255);
  pp.setBlue(100);
}
print(bb);
```


- Foreground: correct, Background: yellow

- Need a conditional (`if`)

  - If it is blue, then set it to green…

What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getBlue() == 255){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```
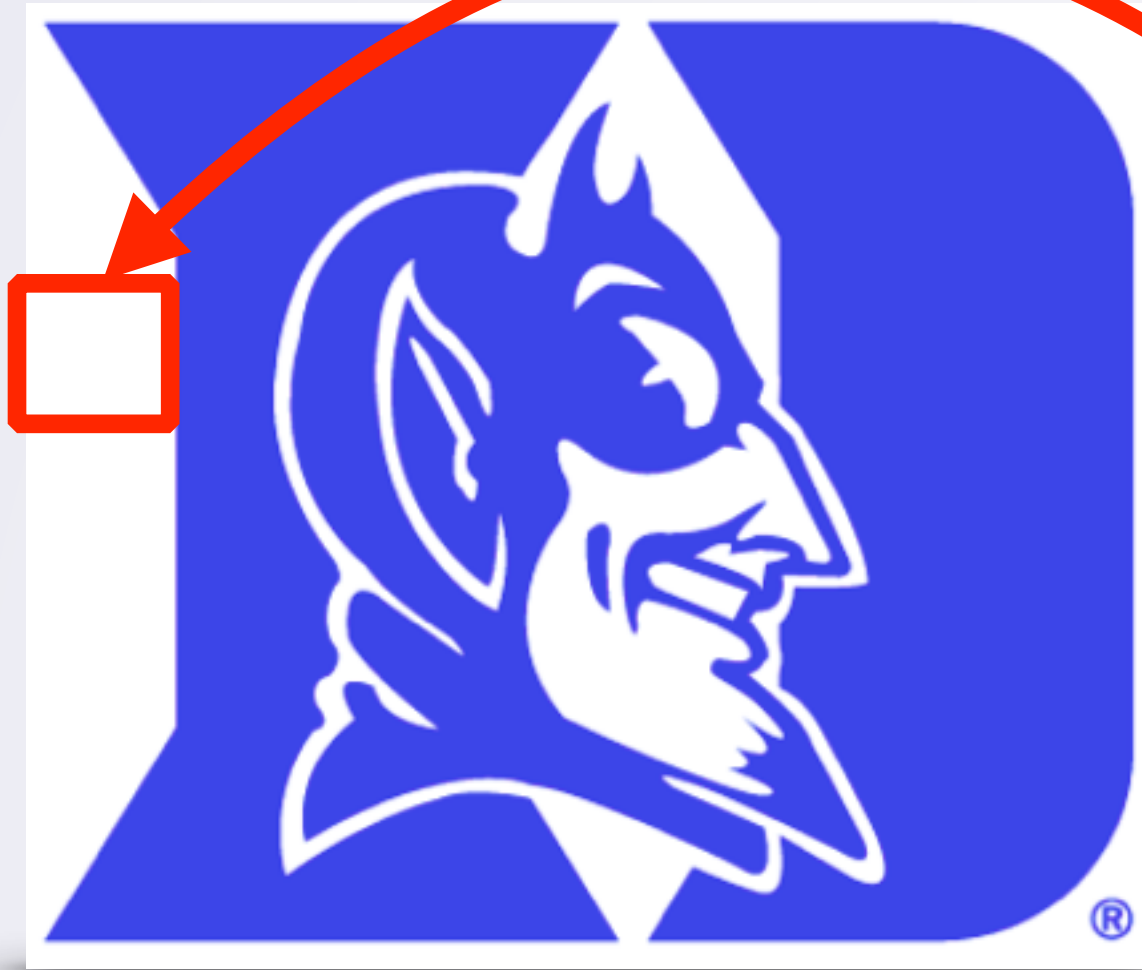
- What does this do?

What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getBlue() == 255){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```


- Not what we wanted…

Think it Through...
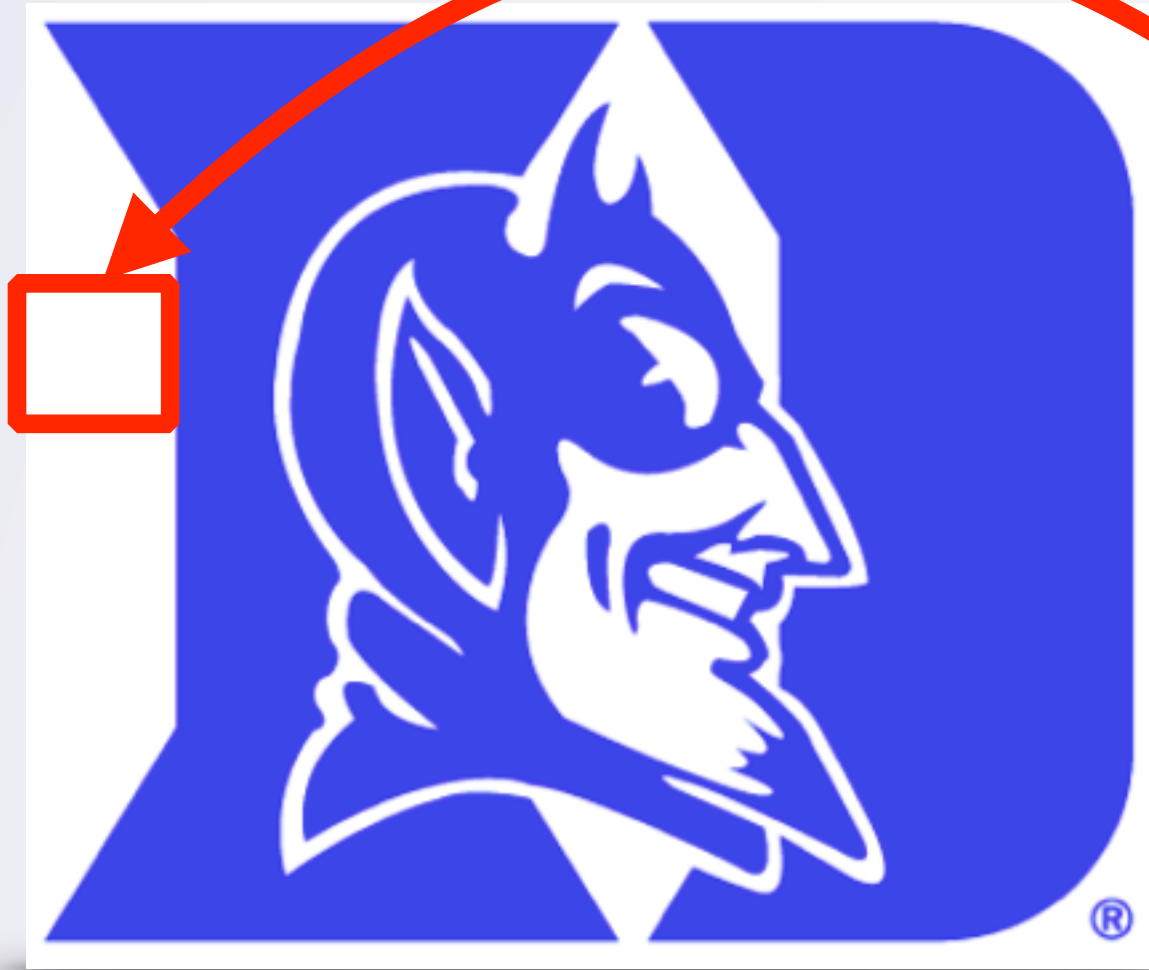
White:
R = 255
G = 255
B = 255
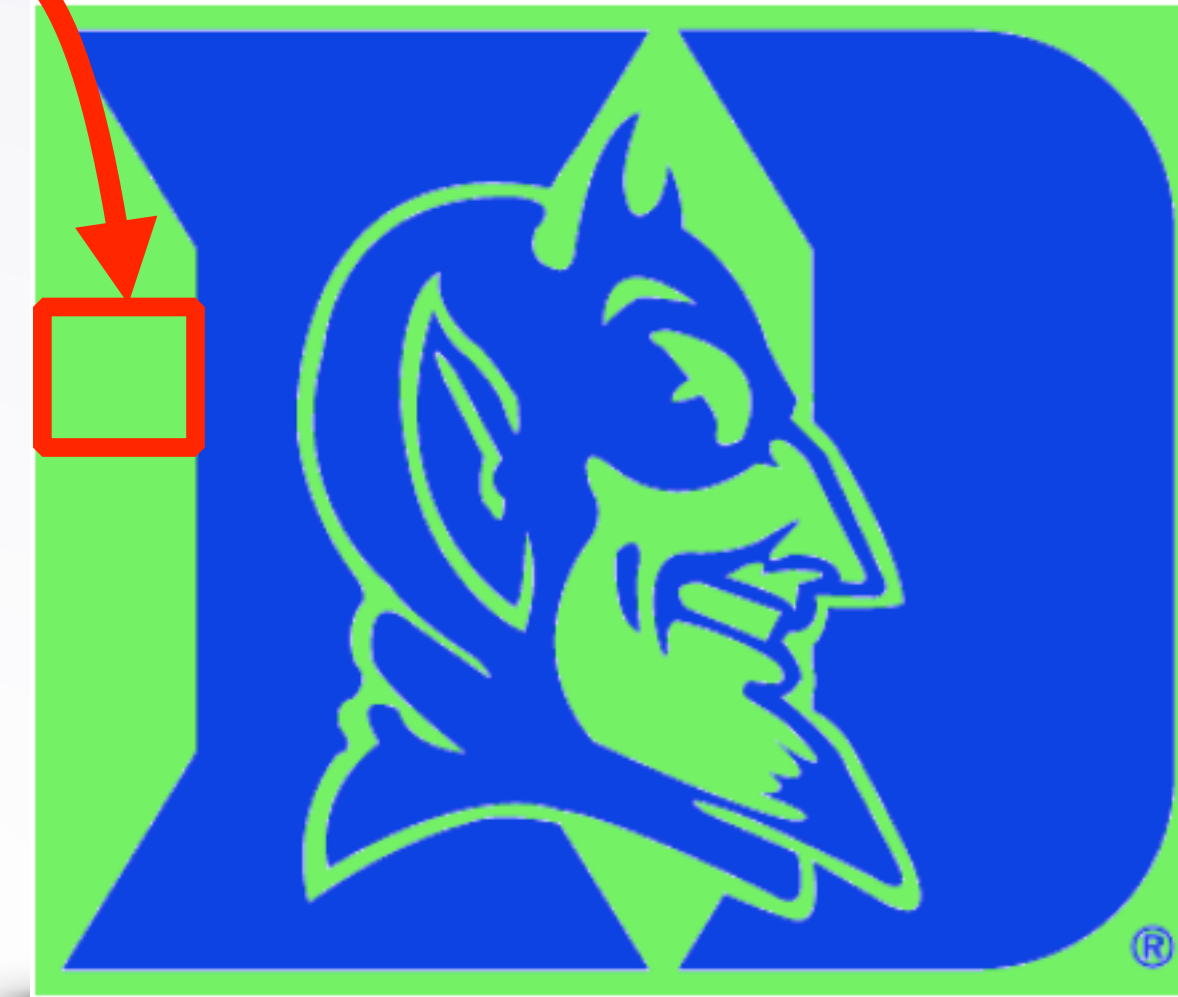
```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getBlue() == 255){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```

Think it Through...

White: Green:
R = 255 R = 0
G = 255 G = 255
B = 255 B = 100

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getBlue() == 255){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```

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Think it Through…

Blue:
R = 45
G = 39
B = 225


```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getBlue() == 255){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```

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Think it Through...

Blue: White:
R = 45   R = 255
G = 39   G = 255
B = 225   B = 255

- Need condition that distinguishes

  - red < 200, green < 150, blue != 255

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What About a Green Devil?

```
var bb = new SimpleImage("duke_blue_devil.png");
for (var pp of bb.values()) {
    if(pixel.getRed() < 200){
        pixel.setRed(0);
        pixel.setGreen(255);
        pixel.setBlue(100);
    }
}
print(bb);
```


- Perfect!

- Better: plan first

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