Learning Lab - Images

January 13, 2022

[1]:
```
from PIL import Image
import os
import PIL
```

[2]:
```
PATH = './Images/natural_images/flower/'
images = []
for image in os.listdir(PATH):
    img = Image.open(os.path.join(PATH, image))
    images.append(img)
len(images)
```

[2]:
```
836
```

[3]:
```
display(images[0])
display(images[1])
```

Cropping

[4]:
```
width, height = images[0].size
print("width: "+str(width))
print("Height: "+ str(height))
```

```
width: 481
Height: 446
```

[5]:
```
    # The crop method from the Image module takes four coordinates as input.
    # The right can also be represented as (left+width)
    # and lower can be represented as (upper+height).
(left, upper, right, lower) = (0, 50, width-170, height-40)
cropped_image = images[0].crop((left, upper, right, lower))
display(cropped_image)
```

[6]:
```
(left, upper, right, lower) = (-100, -100, width+100, height+100)
cropped_image = images[0].crop((left, upper, right, lower))
display(cropped_image)
```

Resizing

[7]:
```
width, height = images[0].size
print("width: "+str(width))
print("Height: "+ str(height))
```

```
width: 481
Height: 446
```

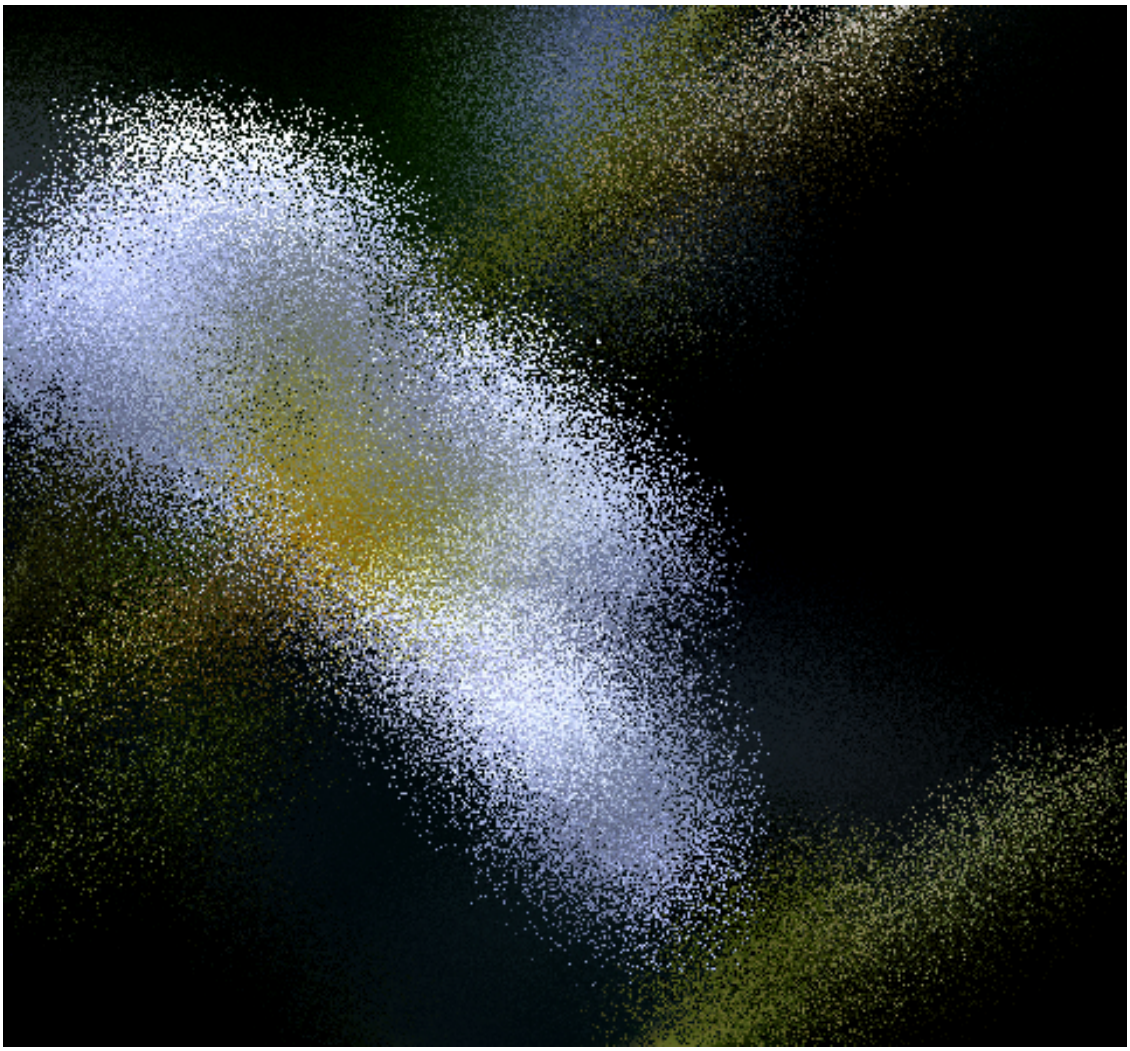
[8]:
```
resized_image1 = images[1].resize((width, height))
display(images[1])
display(resized_image1)
```

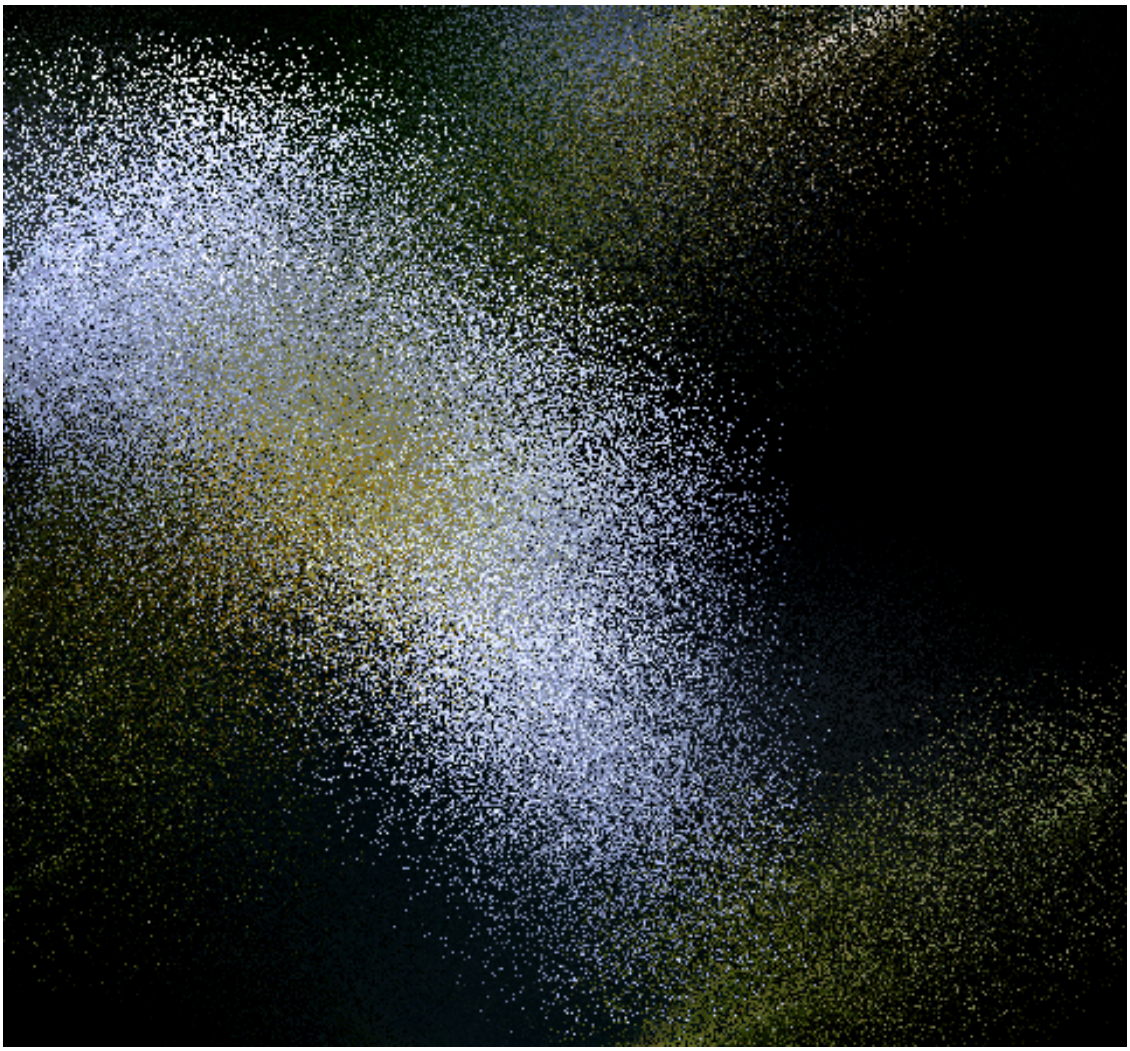
Converting

[9]:
```
display(images[0].convert(mode="L"))
```

Increase difficulty by randomly spread pixels in an image

[10]:
```
display(images[0].effect_spread(10))
display(images[0].effect_spread(20))
display(images[0].effect_spread(50))
display(images[0].effect_spread(100))
```





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