2

```
1+1
```

```
#loading and viewing an image
```

```
url =
"https://user-images.githubusercontent.com/6933510/107239146-dcc3fd00-6a28-11eb-8c7b-41aaf
```

```
url = "https://user-images.githubusercontent.com/6933510/107239146-dcc3fd00-6a28-11eb-
8c7b-41aaf6618935.png"
```

```
philip_filename = "C:\\Users\\Lenovo\\AppData\\Local\\Temp\\jl_qdybevGT2L"
```

```
philip_filename = download(url)
```

philip =

```
1 philip = load(philip_filename)
```

```
begin
    using Colors, ColorVectorSpace, ImageShow, FileIO, ImageIO
    using PlutoUI
    using PlutoTeachingTools
    using HypertextLiteral: @htl, @htl_str
end
```

philip_size = (864, 700)

```
philip_size = size(philip)
```

philip_width = 700

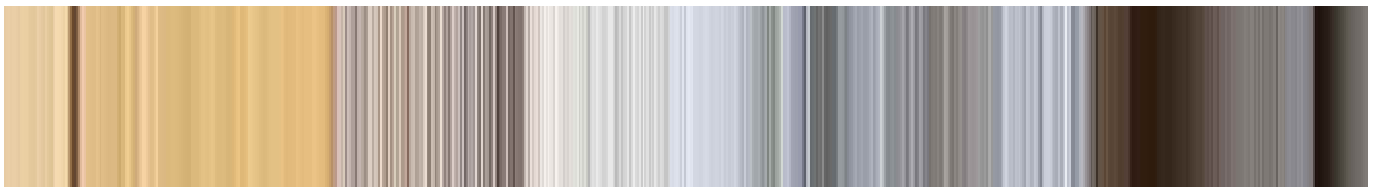
```
philip_width = philip_size[2]
```

a_pixel =

```
a_pixel = philip[200, 100]
```

```
philip[550:650, 1:philip_width]
```

```
philip[550:650, :]
```



```
philip[550, :]
```

philip_head =

```
philip_head = philip[470:800, 140:410]
```

```
RGB(1.0, 0.0, 0.0)
```

```
invert (generic function with 1 method)
```

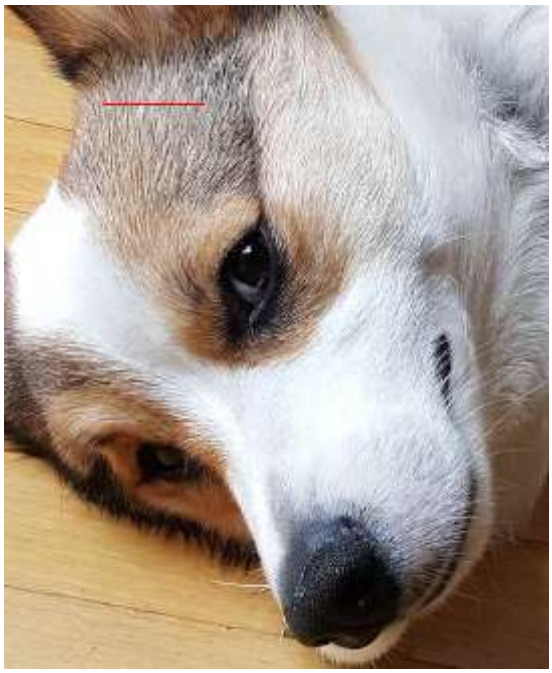
```
function invert(color::AbstractRGB)

    return missing
end
```

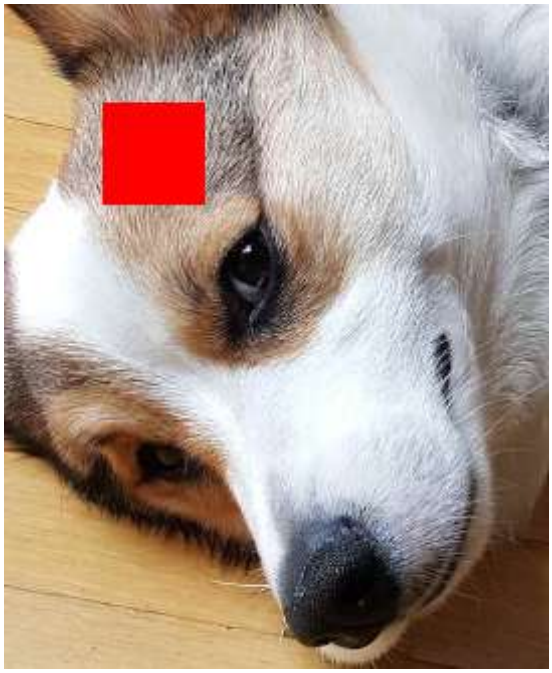
```
let
    temp = copy(philip_head)
    temp[100, 200] = RGB(1.0, 0.0, 0.0)
    temp
end
```

```
#slicing out pixels from image
```

```
philip_head[50, 50:100]
```



```
let
    temp = copy(philip_head)
    temp[50, 50:100] .= RGB(1.0, 0.0, 0.0)
    temp
end
```



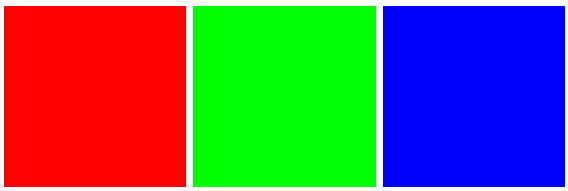
```
let
    temp = copy(philip_head)
    temp[50:100, 50:100] .= RGB(1.0, 0.0, 0.0)
    temp
end
```

reduced_image =

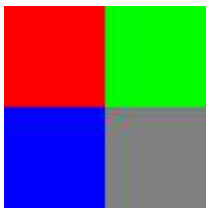
```
reduced_image = philip[1:10:end, 1:10:end]
```

```
[1, 20, "hello"]
```

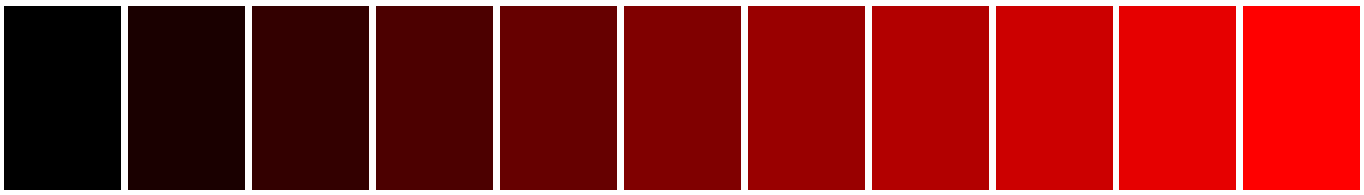
```
[1, 20, "hello"]
```



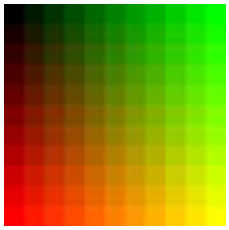
```
[RGB(1, 0, 0), RGB(0, 1, 0), RGB(0, 0, 1)]
```



```
[RGB(1, 0, 0)  RGB(0, 1, 0)
 RGB(0, 0, 1)  RGB(0.5, 0.5, 0.5)]
```



```
[RGB(x, 0, 0) for x in 0:0.1:1]
```



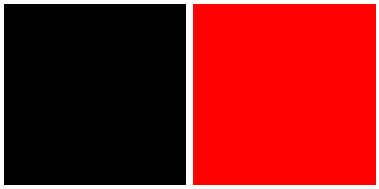
```
[RGB(i, j, 0) for i in 0:0.1:1, j in 0:0.1:1]
```

```
[philip_head  philip_head]
```

```
[philip_head                    reverse(philip_head, dims=2)
 reverse(philip_head, dims=1)  rot180(philip_head)]
```

1

```
@bind number_reds Slider(1:100, show_value=true)
```



```
[RGB(red_value / number_reds, 0, 0) for red_value in 0:number_reds]
```