

```
1 import numpy as np
2 from PIL import Image
3
4
5 def main(): ...
6
7
8 def calculate_brightness(filename):
9     with Image.open(filename) as image:
10         brightness = np.mean(np.array(image.convert("L"))) / 255
11     return brightness
12
13
14 main()
```

```
1 import csv
2 import numpy as np
3 from PIL import Image
4
5
6 def main():
7     with open("views.csv", "r") as file:
8         reader = csv.DictReader(file)
9         for row in reader:
10             print(row)
11
12
13 def calculate_brightness(filename):
14     with Image.open(filename) as image:
15         brightness = np.mean(np.array(image.convert("L"))) / 255
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6 def main():
7     with open("views.csv", "r") as file:
8         reader = csv.DictReader(file)
9         for row in reader:
10             brightness = calculate_brightness(f"{row['id']}.jpeg")
11             print(round(brightness, 2))
12
13
14 def calculate_brightness(filename):
15     with Image.open(filename) as image:
16         brightness = np.mean(np.array(image.convert("L"))) / 255
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1 import csv
2 import numpy as np
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4
5
6 def main():
7     with open("views.csv", "r") as views, open("analysis.csv", "w") as analysis:
8         reader = csv.DictReader(views)
9         writer = csv.DictWriter(analysis, fieldnames=reader.fieldnames + ["brightness"])
10        writer.writeheader()
11
12        for row in reader:
13            brightness = calculate_brightness(f"{row['id']}.jpeg")
14            print(round(brightness, 2))
15
16
17 def calculate_brightness(filename):
18     with Image.open(filename) as image:
19         brightness = np.mean(np.array(image.convert("L"))) / 255
20     return brightness
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7     with open("views.csv", "r") as views, open("analysis.csv", "w") as analysis:
8         reader = csv.DictReader(views)
9         writer = csv.DictWriter(analysis, fieldnames=reader.fieldnames + ["brightness"])
10        writer.writeheader()
11
12        for row in reader:
13            brightness = calculate_brightness(f"{row['id']}.jpeg")
14            writer.writerow(
15                {
16                    "id": row["id"],
17                    "english_title": row["english_title"],
18                    "japanese_title": row["japanese_title"],
19                    "brightness": round(brightness, 2),
20                }
21            )
22
23
24    def calculate_brightness(filename):
25        with Image.open(filename) as image:
26            brightness = np.mean(np.array(image.convert("L"))) / 255
27        return brightness
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7     with open("views.csv", "r") as views, open("analysis.csv", "w") as analysis:
8         reader = csv.DictReader(views)
9         writer = csv.DictWriter(analysis, fieldnames=reader.fieldnames + ["brightness"])
10        writer.writeheader()
11
12        for row in reader:
13            row["brightness"] = round(calculate_brightness(f"{row['id']}.jpeg"), 2)
14            writer.writerow(row)
15
16
17 def calculate_brightness(filename):
18     with Image.open(filename) as image:
19         brightness = np.mean(np.array(image.convert("L"))) / 255
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