

Assignment 1 Report

Task 0

```
np.__version__: 2.2.6  
matplotlib.__version__: 3.10.6  
cv2.__version__: 4.12.0
```

Task 1

```
Image data type: <class 'numpy.ndarray'>  
Pixel data type: uint8  
Image dimensions: (321, 433, 3)
```

Task 2



Task 3



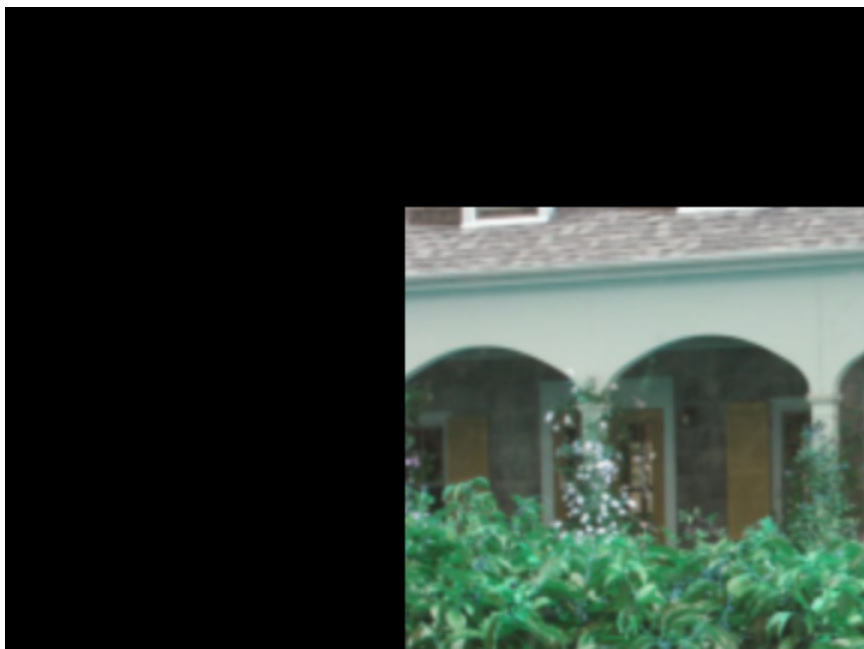
Task 4



Task 5



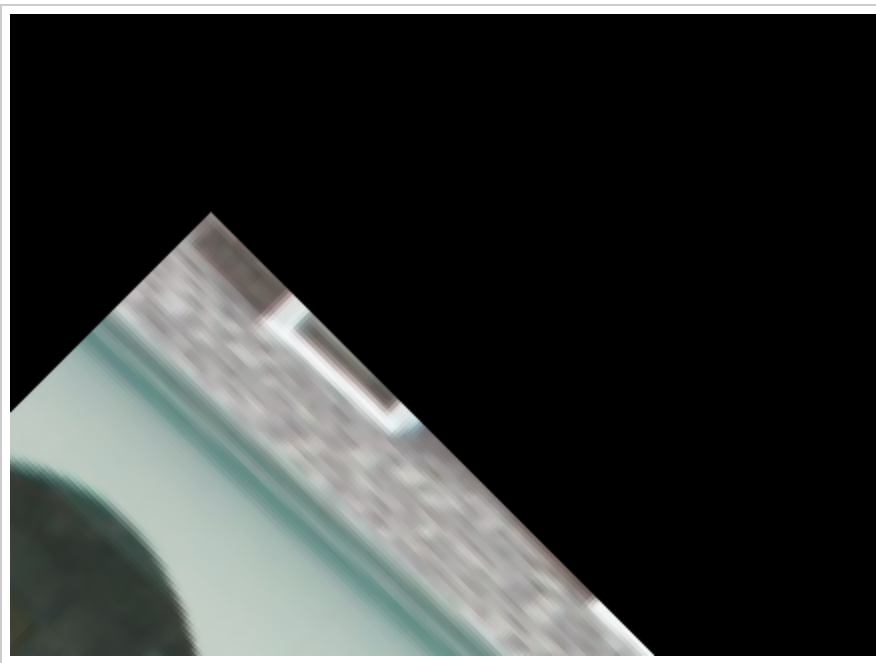
Task 6



Task 7



Task 8



Task 9



Task 10

First-Order Moments:

Standard (Raw) Moments: $M_{00} = 3006960.0$, $M_{10} = 1432355910.0$, $M_{01} = 575000265.0$

Centralized Moments:

$\bar{x} = 476.34684531886023$, $\bar{y} = 191.22311736770692$

Second-Order Centralized Moments:

$\mu_{20} = 35161031847.67469$, $\mu_{02} = 15134711034.44242$, $\mu_{11} = 14713466709.741352$

Task 11

Orientation: 174.82758620689654

Eccentricity: 0.9836065573770492

