Question 1

Write a program to find the complement of an image

```
import cv2

img = cv2.imread("./gray.jpeg")
print(img)

complement = 255 - img

# cv2.imwrite("complement.jpg", complement)
```

Output

```
[[[149 149 149]
  [152 152 152]
  [156 156 156]
  ...
  [ 74  74  74]
  [ 74  74  74]
  [ 74  74  74]]

 [[157 157 157]
  [159 159 159]
  [161 161 161]
  ...
  [ 74  74  74]
  [ 74  74  74]
  [ 74  74  74]]

 [[165 165 165]
  [167 167 167]
  [168 168 168]
  ...
  [ 74  74  74]
  [ 74  74  74]
  [ 74  74  74]]

 ...

 [[192 192 192]
  [192 192 192]
  [192 192 192]
  ...
  [190 190 190]
  [188 188 188]
  [187 187 187]]

 [[192 192 192]
  [192 192 192]
  [192 192 192]
  ...
  [190 190 190]
  [188 188 188]
  [187 187 187]]
```

```
 [[192 192 192]
  [192 192 192]
  [192 192 192]
  ...
  [190 190 190]
  [188 188 188]
  [187 187 187]]]
```

Question 2

Convert image to grayscale using (a) Mean Threshold (b) User-defined threshold

```python
import cv2
import numpy as np

img = cv2.imread("./gray.jpeg", cv2.IMREAD_GRAYSCALE)
# gray_img = cv2.threshold(img, np.mean(img), 255)
```

Question 3

Find the output of 3+4 and the following program

```python
print("Hello World")
```

```python
print("Hello world")
```

Output

```
Hello world
```