MATLAB Image Histogram

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Course Code: Image Processing and Analysis
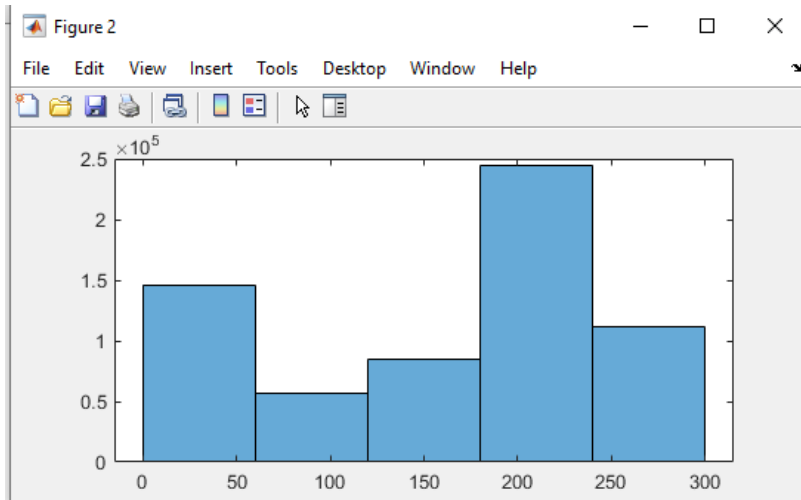
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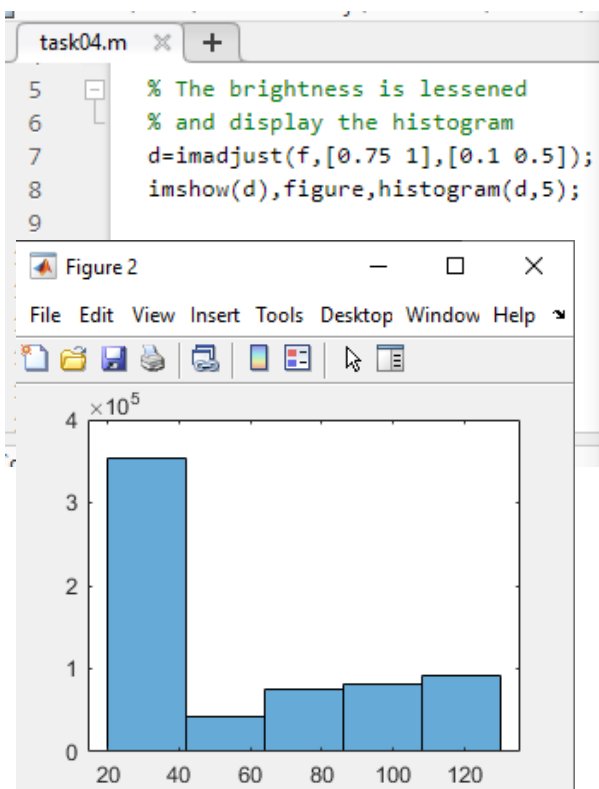
Task

Read image:

```matlab
task04.m  ×  +
1        % Edit image such that the:
2        f=imread("penguin.jpg");
3        imshow(f);
```


Edit image such that the:

1. The brightness is lessened and display the histogram.

```matlab
task04.m  ×  +
5  ☐     % The brightness is lessened
6        % and display the histogram
7        d=imadjust(f,[0.75 1],[0.1 0.5]);
8        imshow(d),figure,histogram(d,5);
9
```
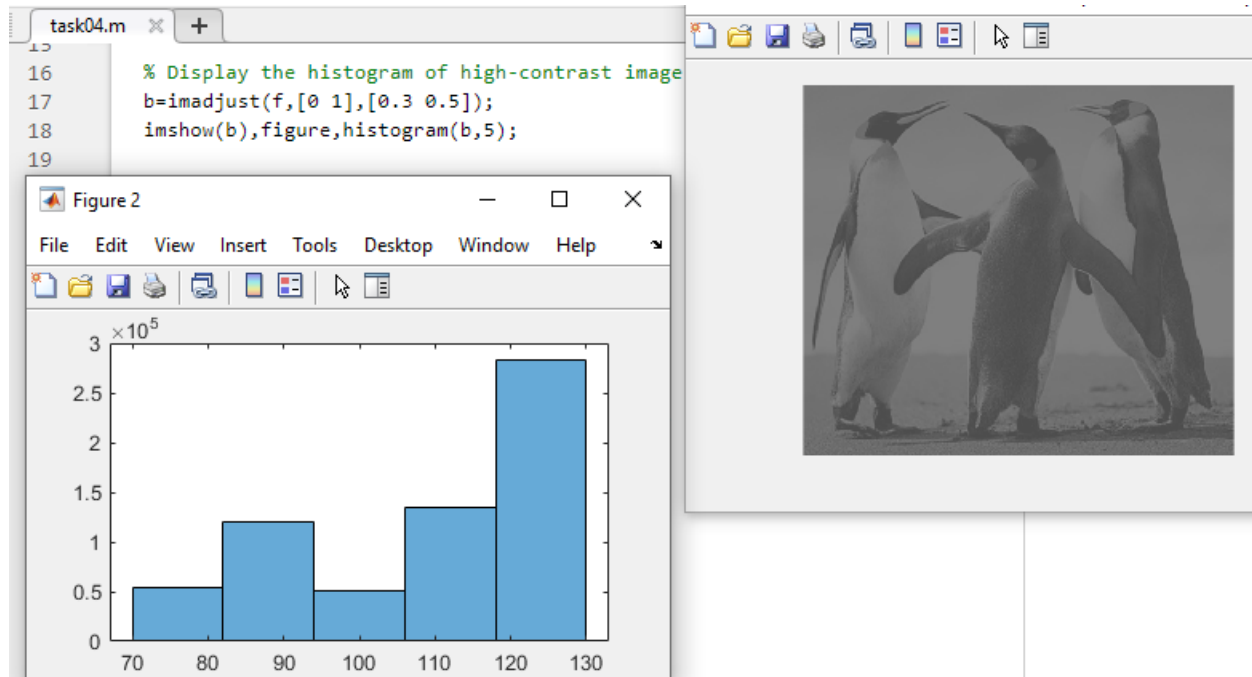
2. The brightness is increased and display the histogram
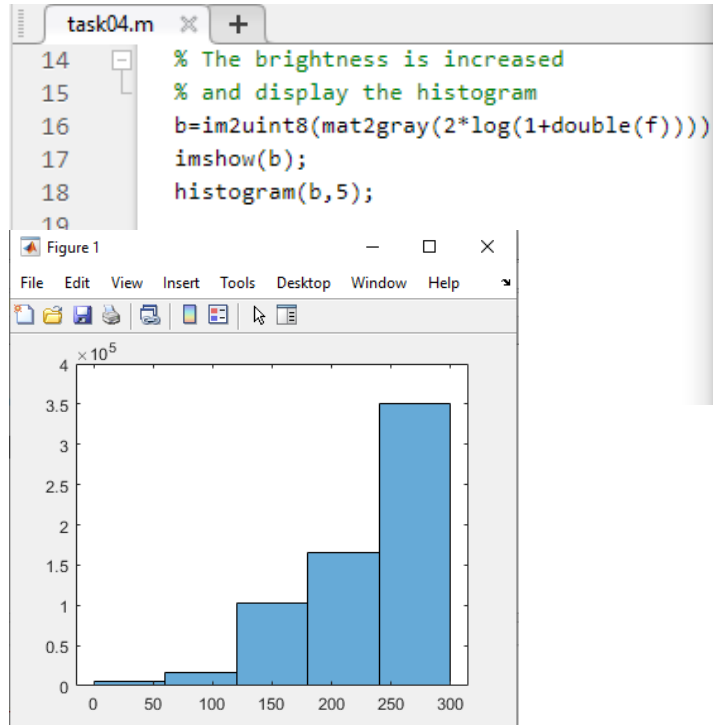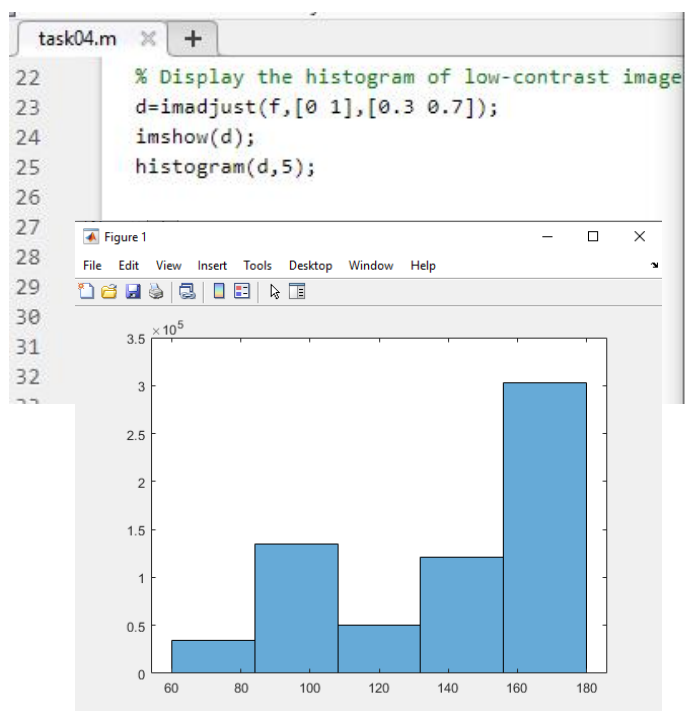

```
task04.m   ✕   +
14    % The brightness is increased
15    % and display the histogram
16    b=im2uint8(mat2gray(2*log(1+double(f))))
17    imshow(b);
18    histogram(b,5);
19
```

3. Display the histogram of low-contrast image


```
task04.m   ✕   +
22    % Display the histogram of low-contrast image
23    d=imadjust(f,[0 1],[0.3 0.7]);
24    imshow(d);
25    histogram(d,5);
26
27
28
29
30
31
32
```

4. Display the histogram of high-contrast image


```
16        % Display the histogram of high-contrast image
17        b=imadjust(f,[0 1],[0.3 0.5]);
18        imshow(b),figure,histogram(b,5);
19
```

5. Display the histogram of negative image.


```
25        % Display the histogram of negative image.
26        b=imadjust(f,[0 1],[1 0]);
27        imshow(b),figure,histogram(b,5);
28
```
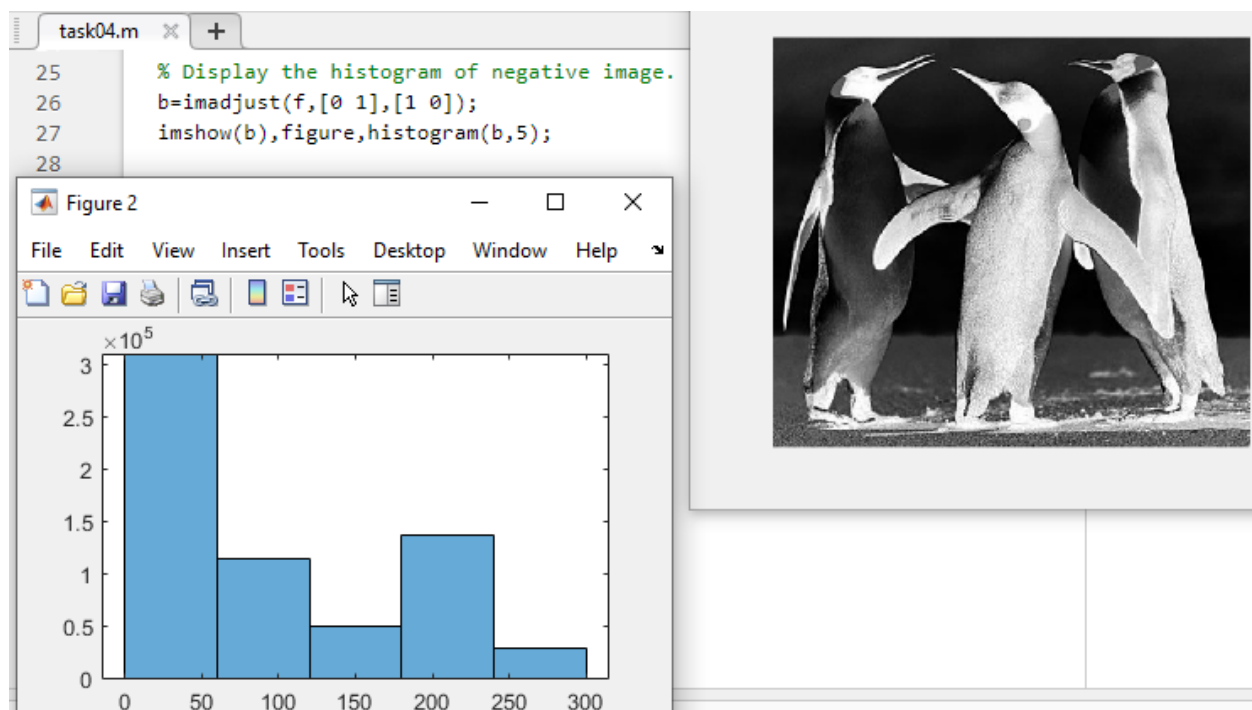
6. Discuss the details and changes that are occurring to the original histogram.

Image	Histogram
Real Image	In real image, intensity of maximum number of pixels lie between 200 and 250 that shows brighter pixels were more in image.
Less brightness	In Less brightness image, intensity of maximum number of pixels lie between 20 and 40 that shows less brightness in image.
Increased brightness	In high-contrast image, intensity of maximum number of pixels lie between 250 and 300 that shows more brightness in image.
Low-contrast	In high-contrast image, intensity of maximum number of pixels lie between 160 and 180.
High-Contrast	In high-contrast image, intensity of maximum number of pixels lie between 120 and 130.
Negative Image	In negative image, intensity of maximum number of pixels lie between 0 and 50 that shows dark pixels are more in image.