1. Read image.

```
VARIABLE = imread('PICTURE.ext');
```

2. Save image.

```
imwrite(VARIABLE,'PITCTURE2.ext');
```

3. Show image.

```
imshow(VARIABLE);
```

4. Display image info.

```
iminfo ('PICTURE.ext');
```

5. Image tools.

```
imtool(VARIABLE);
```

6. For loops.

```
for COUNTER = START_VALUE : MAX
          //code goes here
end

ex) for i=0:255
          // code goes here
    end
```

7. Image size.

```
VARIABLE2 = size(VARIABLE);
```

8. Show images.

```
figure, imshow(PIC1),figure, imshow(PIC2);
```

9. Show images together.

```
img = imread('PICTURE.ext');
img2 = imread('PICTURE.ext');

figure;
subplot(1,2,1); imshow(img);
subplot(1,2,2); imshow(img2);
```

10. Add title to image.

```
imshow(VARIABLE);
title('TITLE');
```

11. Display text on console.

```
disp('TEXT');
```

12. Show image histogram.

```
VARIABLE =imread('PICTURE.ext');
imhist(VARIABLE);
```

13. Take a value from the user (number).

```
VARIABLE = input('TEXT');
```

14. Take a value from the user (string).

```
VARIABLE = input('TEXT', 's');
```

15. Histogram equalization (built-in function).

```
image = imread('PICTURE.ext');

new = histeq(image);
figure,imshow(image), figure, imhist(new);
```

16. Construct a matrix.

```
a=[4 -2 -4 7;1 5 -3 2;6 -8 -5 -6;-7 3 0 1]; % 4*4 matrix
```

17. Matrix of zeros.

```
zeros(5); % construct matrix 5*5 of zeros
```

18. Matrix of ones.

```
ones(5); % construct matrix 5*5 of ones
```

19. Find description of a command/function.

```
help FUNCTION;
```

20. Convert variable to uint (un-assigned int8 0-255).

```
VARIABLE2 = uint(VARIABLE).
```

21. If statement.

```
if (CONDITION)
     % STATEMENTS
else
     % STATEMENTS
end
```

22. Switch statement.

```
switch(VARIABLE)
    case X
         % STATEMENTS
    case Y
         % STATEMENTS
    case Z
         % STATEMENTS
   otherwise
         % DEFUALT CASE
end
```

23. Clear command window.

```
clc;
```

24. Clear workspace.

```
clear;
```

25. Close all images.

```
close all;
```

26. Get rows & columns of an image.

```
img=imread('PICTURE.ext');
[row, col]=size(img);
```

27. Plotting an array/matrix.

```
plot(VARIABLE);
```

28. Plotting an array/matrix (bars).

```
bar(VARIABLE);
```

29. Color to gray.

```
img = imread('PICTURE.ext');

gray_img = rgb2gray(img);
imshow(gray_img);
```

30. Color to index image.

```
img = imread('PICTURE.ext');

[index_img, colormap] = rgb2ind(img,12); % 12 indicates number of colors (changeable).
imshow(index_img);
```

31. Show image pairs.

```
imshowpair(img1_img2,'montage');  % 'montage' shows both images next to each other.
                                  % 'diff' shows the difference between the two images.
                                  % 'blend' blend both images (overlay).
                                  % 'falsecolor' overlays images & value = gray (if both images
                                    have the same intensity. Value = magenta || green otherwise.
```

32. Gray to binary (black & white).

```
img = imread('PICTURE.ext');

gray_level = graythresh(img);
binary_img = im2bw(img,gray_level);

imshowpair(img,binary_img,'montage');
```

33. Flip image horizontally.

```
img2 = fliplr(img);
```

34. Flip image vertically.

```
img2 = flipud(img);
```

35. Higher histogram equalization.

```
img2 = adapthisteq(img);
```

36. Use wizard to adjust contrast.

```
img = imread('PICTURE.ext');
temp = figure,imshow(img);
imcontrast(temp);
```

37.