

JPEG - Using MATLAB Tools

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Input: Image

Output: Compressed JPEG Image

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Defaults

```
clc;  
clear all;  
close all;
```

Inputs

```
I = imread("landscape.png");
```

MATLAB JPEG

```
Q = [10 30 50 70 90]; % JPEG Quality  
filenames = strings(length(Q),1);  
  
for k = 1:length(Q)  
    filenames(k) = sprintf("cat_Q%d.jpg", Q(k));  
    imwrite(I, filenames(k), 'jpg', 'Quality', Q(k));  
end
```

Disk Size

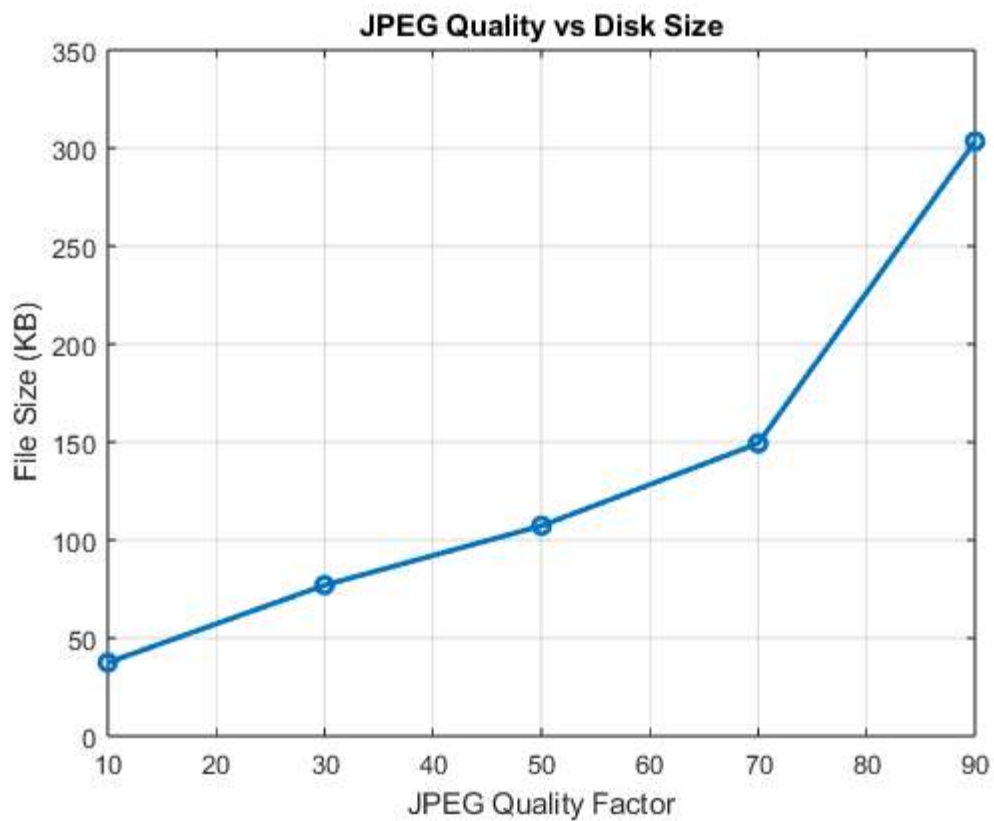
```
fprintf("\nJPEG File Size Comparison:\n");  
fprintf("-----\n");  
  
for k = 1:length(Q)  
    fileinfo = dir(filenames(k));  
    fprintf("Quality %3d : %8.2f KB\n", Q(k), fileinfo.bytes/1024);  
end
```

JPEG File Size Comparison:

```
-----  
Quality 10 :    37.45 KB  
Quality 30 :    76.96 KB  
Quality 50 :   107.24 KB  
Quality 70 :   149.33 KB  
Quality 90 :   303.39 KB
```

Quality Factor vs File Size

```
file_sizes = zeros(length(Q),1);  
  
for k = 1:length(Q)  
    fileinfo = dir(filename(k));  
    file_sizes(k) = fileinfo.bytes/1024;  
end  
  
figure;  
plot(Q, file_sizes, '-o', 'LineWidth', 2);  
grid on;  
xlabel("JPEG Quality Factor");  
ylabel("File Size (KB)");  
title("JPEG Quality vs Disk Size");
```



Different Quality Results Plot

```
figure("Name","JPEG Quality Comparison");  
  
for k = 1:length(Q)
```

```
subplot(2,3,k);  
imshow(imread(filenamees(k)));  
title(sprintf("Q = %d", Q(k)));  
end
```

