

# JPEG - Using MATLAB Tools

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Input: Image

Output: Compressed JPEG Image

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## Defaults

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

## Inputs

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

## MATLAB JPEG

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```
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

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```
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:

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```
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

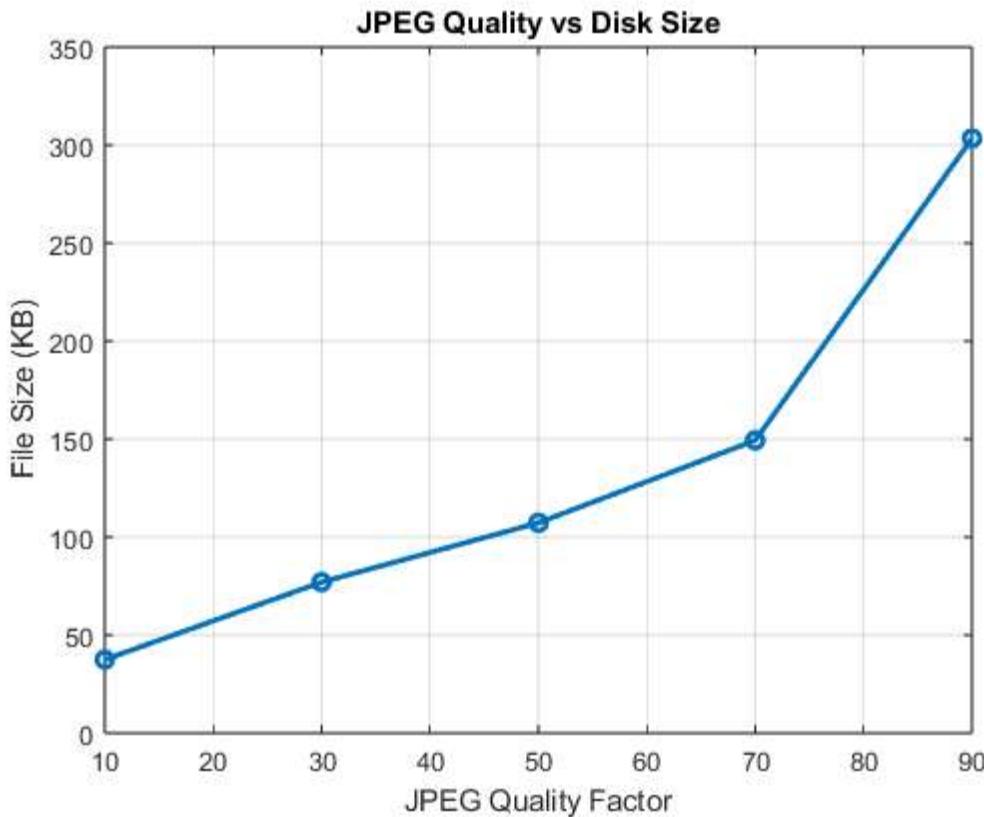
---

```
file_sizes = zeros(length(Q),1);

for k = 1:length(Q)
    fileinfo = dir(filenames(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

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```
figure("Name", "JPEG Quality Comparison");

for k = 1:length(Q)
```

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

