Contents

Display graphics file using imread and imshow function.

```
imread("developer.jpg");
imshow("developer.jpg");
```
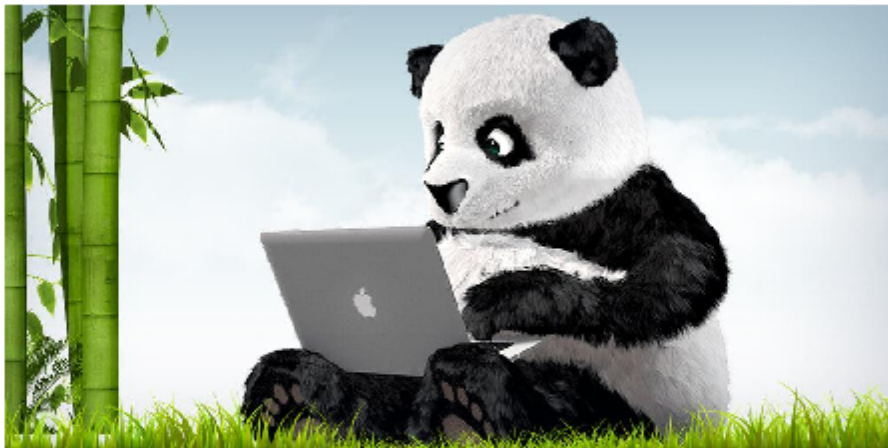

Display image using some variable

var1, var2, var3

```
% Original Image
var1 = imread('panda.jpg');
% Brighter Image
var2 = var1+70; % Increasing Brightness
% Darker Image
var3 = var1-70; % Decreasing Brightness
```

```
imshow(var1);
```



```
% Showing var2 graphics image(Brighter).
imshow(var2);
```

```
% Showing var3 graphics image(Darker).
imshow(var3);
```

```
imwrite(var3, 'panda.png');
```


Display information about the Graphics file

```
imfinfo("developer.jpg")
```

```
ans =

  struct with fields:

          Filename: '/MATLAB Drive/Class 1/developer.jpg'
       FileModDate: '23-Jan-2021 04:49:09'
          FileSize: 67581
            Format: 'jpg'
     FormatVersion: ''
             Width: 1020
            Height: 510
          BitDepth: 24
         ColorType: 'truecolor'
   FormatSignature: ''
   NumberOfSamples: 3
      CodingMethod: 'Huffman'
     CodingProcess: 'Sequential'
           Comment: {}
```

Write image to graphics file/Changing file format

```
imwrite(var3, 'panda.png');
```

Color to Gray/Binarize

```
var4 = rgb2gray(var1);
var5 = imbinarize(var1);
```

```
imshow(var4);
```


Display Subplot

```
subplot(2,2,1);imshow("subplot_1.jpg");
subplot(2,2,2);imshow("subplot_2.jpg");
subplot(2,2,3);imshow("subplot_3.jpg");
subplot(2,2,4);imshow("subplot_4.jpg");
```

```
var4 = rgb2gray(var1);
var5 = imbinarize(var1);
```

Display Subplot with customized images

```
subplot(2,2,1);imshow(var1);
subplot(2,2,2);imshow(var2);
subplot(2,2,3);imshow(var3);
subplot(2,2,4);imshow(var4);
```

Sum

Sum of array elements

```
sum(sum(var1))
```

```
ans(:,:,1) =

     18511639


ans(:,:,2) =

     17639906


ans(:,:,3) =

     16872406
```

```
sum(sum(var2))
```

```
ans(:,:,1) =

     22531528


ans(:,:,2) =

     22076301


ans(:,:,3) =

     21651117
```

```
sum(sum(var3))
```

```
ans(:,:,1) =

     12434363


ans(:,:,2) =

     11735393


ans(:,:,3) =

     11073579
```

Mean

Average or mean value of array

```
mean(mean(var1))
```

```
ans(:,:,1) =

   166.9385


ans(:,:,2) =

   159.0771


ans(:,:,3) =

   152.1558
```

```
mean(mean(var2))
```

```
ans(:,:,1) =

   203.1899


ans(:,:,2) =

   199.0847


ans(:,:,3) =

   195.2504
```

```
mean(mean(var3))
```

```
ans(:,:,1) =

   112.1334


ans(:,:,2) =

   105.8301


ans(:,:,3) =

    99.8618
```

Standard Deviation

```
std(double(var1))
```

ans(:,:,1) =

  Columns 1 through 7

    16.0552   16.0872   16.1383   16.2184   16.2714   16.3292   16.3926

  Columns 8 through 14

    16.4036   16.4577   16.5137   16.5823   16.7338   16.8607   17.0054

  Columns 15 through 21

    17.0926   17.1454   17.0122   17.2362   17.3021   17.5294   17.9393

  Columns 22 through 28

    19.3236   23.1705   31.8437   44.8164   59.7973   70.9465   76.8165

  Columns 29 through 35

    81.7446   84.2775   86.5969   88.2857   90.3495   91.1581   92.1938

  Columns 36 through 42

    93.1074   93.9803   94.7285   95.3437   95.6221   96.2793   96.9863

  Columns 43 through 49

    97.2985   97.7419   98.0995   98.2968   98.6760   98.8179   99.8218

  Columns 50 through 56

   100.4011   100.8228   100.8975   101.0658   101.5156   101.7709   101.8161

  Columns 57 through 63

   101.7422   101.9336   102.4523   101.9875   101.3827   101.3649   100.8723

  Columns 64 through 70

   100.5189   99.8073   100.0617   99.8645   99.7322   99.9337   99.9710

  Columns 71 through 77

    99.3937   99.4349   99.4289   99.9968   100.2615   99.8989   99.3983

  Columns 78 through 84

    99.9161   99.8715   100.3011   99.7357   99.2260   99.0676   98.7618

  Columns 85 through 91

    98.7102   99.4427   98.8288   97.6150   97.0374   96.6231   96.8962

  Columns 92 through 98

    96.2752   94.5947   93.7459   92.9920   92.6300   91.5858   90.7952

  Columns 99 through 105

88.8272   87.1472   85.2432   82.1741   79.7779   83.2328   88.5058

Columns 106 through 112

  92.3067   94.0156   94.5881   94.1695   93.7471   93.3877   92.6081

Columns 113 through 119

  92.3257   92.2612   92.5098   92.5770   92.5954   92.4412   92.7290

Columns 120 through 126

  92.8704   92.6964   93.5096   94.4359   95.2062   95.6280   96.1904

Columns 127 through 133

  96.5309   97.3742   98.4498   98.7616   98.9503   98.8921   98.7812

Columns 134 through 140

  98.5795   98.3673   98.2820   97.9994   98.1261   98.6673   98.5832

Columns 141 through 147

  98.3766   98.5314   98.5935   98.5176   98.3366   97.9384   97.4366

Columns 148 through 154

  97.2888   96.9688   96.6029   96.2685   96.4579   97.1344   98.2176

Columns 155 through 161

100.2112   101.8333   103.6851   105.3730   106.1996   106.6758   107.1308

Columns 162 through 168

107.1405   106.8533   106.8364   106.9466   107.1454   107.7750   107.9718

Columns 169 through 175

108.6100   108.6579   108.2874   108.0670   107.8294   107.7840   107.8332

Columns 176 through 182

107.7695   107.8365   107.7238   107.7430   107.9796   107.5049   107.3284

Columns 183 through 189

106.4339   105.6980   104.6194   103.5303   102.2460   101.7927   101.4456

Columns 190 through 196

101.3093   101.6020   101.4207   100.9156   100.9407   100.9625   101.0586

Columns 197 through 203

101.0864   101.2796   101.7162   102.2515   103.1521   103.3854   103.8443

Columns 204 through 210

104.4994   104.6183   105.0429   105.8021   106.3426   106.2224   106.4806

Columns 211 through 217

106.2406   106.1716   105.8858   106.0278   105.7969   105.4485   104.9772

Columns 218 through 224

104.2362   104.3179   104.5770   104.9441   104.3286   103.6804   103.6102

Columns 225 through 231

103.4468   104.0168   104.8291   105.1264   105.3755   105.5810   105.8276

Columns 232 through 238

105.6839   105.8039   105.8653   105.5594   105.6276   106.2171   105.8050

Columns 239 through 245

105.5775   105.9827   105.6410   105.5661   105.5693   105.5736   104.6097

Columns 246 through 252

105.9432   105.6808   105.1478   104.5660   104.4083   104.0154   102.8126

Columns 253 through 259

102.6430   102.9549   101.9965   101.3307   101.4249   101.2232   101.7253

Columns 260 through 266

102.2950   101.7609   101.6767   100.9399   100.5557   99.3423   97.8968

Columns 267 through 273

 95.6613   93.4476   94.1649   92.7198   89.3198   86.0390   83.5383

Columns 274 through 280

 81.5694   80.5675   79.0054   77.3707   75.7501   74.4867   72.0298

Columns 281 through 287

 65.1607   59.7824   57.9611   56.4614   55.2499   54.7637   53.3148

Columns 288 through 294

 51.9547   49.7112   46.5183   41.8639   39.3066   34.2423   24.3682

Columns 295 through 301

 13.8724   13.3375   13.0089   12.8811   12.6557   12.4802   12.4149

Columns 302 through 308

 12.3655   12.2740   12.2505   12.3307   12.3210   12.2469   12.1412

Columns 309 through 315

 12.0421   11.9899   11.8863   11.8277   11.5928   11.6173   11.5096

Columns 316 through 322

 11.4452   11.2708   11.1901   11.1525   11.2672   11.3780   11.4110

Columns 323 through 329

 11.3205   11.2551   11.2096   11.0687   11.0188   10.9899   11.0041

```
Columns 330 through 333

  10.9890    10.9502    10.9326    10.9173


ans(:,:,2) =

  Columns 1 through 7

   15.0017    15.0328    15.0875    15.1677    15.2245    15.2815    15.3484

  Columns 8 through 14

   15.3589    15.4142    15.4706    15.5424    15.6976    15.8280    15.9762

  Columns 15 through 21

   16.0717    16.1306    16.3809    16.5881    16.7481    16.9852    17.6343

  Columns 22 through 28

   19.0871    23.4043    32.3129    45.4828    60.5792    71.3044    77.2749

  Columns 29 through 35

   81.9859    84.6281    86.8403    88.4821    90.3476    91.0355    92.1826

  Columns 36 through 42

   93.1515    94.0597    94.8369    95.4553    95.6444    96.2574    96.8993

  Columns 43 through 49

   97.2665    97.6321    98.1241    98.4565    99.0454    99.2586   100.3213

  Columns 50 through 56

  100.9898   101.4537   101.4759   101.6234   102.0466   102.2337   102.2215

  Columns 57 through 63

  102.0361   102.1974   102.7684   102.2293   101.7074   101.7418   101.4233

  Columns 64 through 70

  101.0933   100.6518   100.8898   100.8223   100.7013   101.0440   101.0899

  Columns 71 through 77

  100.5249   100.5816   100.6190   101.2660   101.6369   101.2994   100.8809

  Columns 78 through 84

  101.4696   101.5209   101.7849   101.2633   100.6881   100.7356   100.4338

  Columns 85 through 91

  100.5367   101.3254   100.9065    99.6475    99.3812    98.9667    99.6635

  Columns 92 through 98

   99.0163    97.4401    96.4761    95.8274    95.2848    94.7259    94.0052

  Columns 99 through 105
```

92.4355   90.9981   89.5374   86.8561   84.9767   88.4464   93.7163

Columns 106 through 112

   96.7703   98.1371   97.8460   97.2798   96.5854   96.1156   95.5458

Columns 113 through 119

   95.5211   95.3464   95.6336   95.8954   95.9041   95.5209   95.9697

Columns 120 through 126

   95.8465   95.9175   96.7099   97.6926   98.4665   98.9473   99.4640

Columns 127 through 133

   99.7339   100.3386   100.2255   100.1748   100.3727   100.3285   100.0316

Columns 134 through 140

   99.7308   99.4195   99.1357   98.7468   98.7849   99.0170   98.8877

Columns 141 through 147

   98.5940   98.6737   98.7823   98.5390   98.6612   98.1475   97.6811

Columns 148 through 154

   97.5188   97.2333   96.8159   96.4505   96.4845   96.9880   97.8035

Columns 155 through 161

   99.4464   100.7830   102.2108   103.7023   104.3241   104.6809   105.3386

Columns 162 through 168

  105.1643   104.8843   105.0464   105.0471   105.1527   105.5922   105.5899

Columns 169 through 175

  105.8539   105.6625   105.1203   104.6983   104.1424   103.8969   103.7097

Columns 176 through 182

  103.5806   103.7405   103.5287   103.5100   103.6326   103.2154   103.1075

Columns 183 through 189

  102.3919   101.8851   101.3533   100.2837   98.8570   98.1745   98.3319

Columns 190 through 196

   98.0868   98.5308   98.3473   97.9879   98.1902   98.6648   99.1983

Columns 197 through 203

   99.7467   100.0153   100.3830   100.8192   101.7315   101.7409   102.3423

Columns 204 through 210

  102.6296   102.4009   102.7326   103.3763   103.4200   102.9736   102.8087

Columns 211 through 217

102.3808   102.3380   101.9870   102.1913   102.1550   101.7894   100.9522

Columns 218 through 224

 99.9395   99.9698   100.1313   100.3776   99.8577   99.3470   99.2488

Columns 225 through 231

 99.3568   100.0513   100.9435   101.3267   101.4129   101.5566   101.8920

Columns 232 through 238

101.7857   101.8057   101.9821   101.6648   101.8275   102.5057   102.1383

Columns 239 through 245

102.1354   102.5586   101.9990   101.9554   102.1267   102.2938   101.1976

Columns 246 through 252

102.2847   102.1105   101.6174   101.1951   101.2190   101.2262   100.1689

Columns 253 through 259

100.2929   100.5172   99.6843   98.9651   98.8963   98.3864   99.2579

Columns 260 through 266

 99.8958   99.7404   99.6286   98.9462   98.5777   97.6322   96.4337

Columns 267 through 273

 94.1702   91.9055   92.4299   90.9421   87.7626   84.8827   82.8099

Columns 274 through 280

 81.2307   80.9137   79.5030   78.3214   76.7241   75.3310   72.8233

Columns 281 through 287

 66.3731   60.9131   58.8916   57.2532   56.3342   55.8789   54.3982

Columns 288 through 294

 53.0983   51.2456   48.1103   43.4781   40.8719   35.4883   25.7992

Columns 295 through 301

 15.7420   15.2178   14.7999   14.6709   14.4289   14.2588   14.1264

Columns 302 through 308

 14.0537   13.9681   13.9393   13.6663   13.6271   13.5827   13.4497

Columns 309 through 315

 13.3734   13.2902   13.2079   13.1226   12.8973   12.8871   12.7982

Columns 316 through 322

 12.6960   12.5316   12.4066   12.4010   12.2612   12.1136   11.9743

Columns 323 through 329

 11.8875   11.8082   11.7167   11.5593   11.4988   11.4653   11.4539

Columns 330 through 333

   11.4377   11.3969   11.3814   11.3635

ans(:,:,3) =

  Columns 1 through 7

    15.6207   15.6557   15.7072   15.7911   15.8443   15.9056   15.9691

  Columns 8 through 14

    15.9830   16.0319   16.0912   16.1633   16.3254   16.4514   16.6026

  Columns 15 through 21

    16.6979   16.7689   16.8852   17.1394   17.2776   17.5303   18.2565

  Columns 22 through 28

    19.8211   24.0834   33.0488   46.1758   61.2655   71.5716   77.3654

  Columns 29 through 35

    81.3161   84.0765   85.9630   87.6043   89.2511   89.8860   91.0703

  Columns 36 through 42

    92.1097   93.0008   93.8304   94.2961   94.4712   95.1503   95.8149

  Columns 43 through 49

    96.0949   96.5258   97.0606   97.5497   98.2567   98.5445   99.6410

  Columns 50 through 56

   100.3541   100.7465   100.7341   100.8166   101.2518   101.3579   101.4101

  Columns 57 through 63

   101.0914   101.3569   101.9898   101.6346   101.1310   101.3499   101.1057

  Columns 64 through 70

   100.8337   100.4940   100.7993   100.7353   100.6957   101.0620   101.1993

  Columns 71 through 77

   100.5918   100.7070   100.7749   101.3975   101.7870   101.4944   100.9825

  Columns 78 through 84

   101.6536   101.7215   102.1196   101.8575   101.3115   101.1100   100.9174

  Columns 85 through 91

   100.7163   101.4993   100.8705   99.7060   99.5040   99.3182   99.9346

  Columns 92 through 98

    99.5806   98.0091   97.3095   96.7533   96.3223   96.0207   95.4986

  Columns 99 through 105

93.9646   92.7521   91.5679   89.2713   87.5362   91.3513   96.2025

Columns 106 through 112

    99.2792   100.1541   99.8312   98.8209   98.1621   97.1880   97.0946

Columns 113 through 119

    96.7470   96.7096   96.8400   97.3816   97.4095   96.9784   97.4131

Columns 120 through 126

    97.1687   97.2900   97.9690   98.5366   99.2724   99.4352   99.9033

Columns 127 through 133

    99.9973   100.4532   99.9051   99.6357   99.7190   99.6521   99.3490

Columns 134 through 140

    99.1066   98.7282   98.4208   97.9061   97.9610   98.1893   98.0662

Columns 141 through 147

    97.7385   97.8540   97.8859   97.6747   97.2350   96.7629   96.3296

Columns 148 through 154

    96.1667   95.8637   95.5111   95.2435   95.2495   95.6322   96.4329

Columns 155 through 161

    97.7997   98.9193   100.1285   101.3057   101.8129   102.0433   102.8382

Columns 162 through 168

   102.5424   102.0644   102.0571   102.0430   101.9290   102.2664   102.1043

Columns 169 through 175

   102.3337   102.0272   101.4823   101.0332   100.5236   100.1224   99.8338

Columns 176 through 182

    99.6941   99.9784   99.8134   99.6433   99.8628   99.3769   99.4579

Columns 183 through 189

    99.2071   98.9250   98.4373   97.5976   96.0451   95.2441   95.2016

Columns 190 through 196

    94.9936   95.2927   95.4150   95.3870   95.7858   96.1813   96.7579

Columns 197 through 203

    97.0383   97.1595   97.4959   97.8871   98.4552   98.4623   99.1696

Columns 204 through 210

    99.5337   99.3945   99.8610   100.3598   100.2431   99.2737   99.0407

Columns 211 through 217

98.5903   98.5855   98.3739   98.5915   98.4904   98.1894   97.2662

Columns 218 through 224

   96.1447   96.0052   96.0698   96.4050   95.9825   95.6466   95.6102

Columns 225 through 231

   95.5139   96.3633   97.1653   97.6347   97.6333   97.6609   98.0210

Columns 232 through 238

   97.9380   97.9558   98.1985   97.9198   98.1040   98.8036   98.4696

Columns 239 through 245

   98.5589   99.0652   98.4959   98.4855   98.6254   99.0411   97.7309

Columns 246 through 252

   98.5662   98.4731   97.8413   97.3450   97.4443   97.3097   96.5548

Columns 253 through 259

   96.7729   97.1373   96.2920   95.9143   95.9062   95.2447   96.1670

Columns 260 through 266

   96.8074   96.7786   96.6595   95.9875   95.7814   95.2938   94.3356

Columns 267 through 273

   92.3032   90.1791   90.7852   89.3639   86.4930   84.2841   83.0182

Columns 274 through 280

   81.8138   81.7342   80.4150   79.3640   77.7580   76.5040   73.7580

Columns 281 through 287

   67.1692   61.6522   59.3811   57.3098   56.1440   55.5881   54.2893

Columns 288 through 294

   53.1167   51.4885   48.7397   44.0447   41.3241   35.8634   26.1262

Columns 295 through 301

   15.9375   15.3915   14.7791   14.6494   14.5844   14.4110   14.2012

Columns 302 through 308

   14.1311   14.0439   14.0157   13.9973   13.9700   13.9133   13.7923

Columns 309 through 315

   13.7050   13.6341   13.4523   13.3790   13.1422   13.1454   13.0440

Columns 316 through 322

   12.9556   12.7413   12.6231   12.6137   12.5596   12.4959   12.4326

Columns 323 through 329

   12.3415   12.2638   12.1908   12.0338   11.9737   11.9388   11.9382

```
Columns 330 through 333

  11.9194    11.8769    11.8621    11.8411
```