Histogram of image using imhist function

>> im=rgb2gray(I);
>> imhist(im);

Program to print histogram of a grayscale image without using imhist function

```
A=imread('C:\Users\GLAU\Desktop\161500207.jpg');
  a=rgb2gray(A);
  subplot(3,1,1);
  imshow(a);
  title('original image');
  [r,c]=size(a);
  z=zeros(1,256);
  for i=1:r
    for j=1:c
       b=a(i,j);
       z(b+1)=z(b+1)+1;
    end
  end
  N=sum(z);
  p=zeros(1,256);
  s=zeros(1,256);
  c=zeros(1,256);
  r=zeros(1,256);
  for k=1:256
    p(k)=z(k)/N;
    if k==1
       c(k)=p(k);
       s(k)=c(k)*255;
       r(k)=floor(s(k));
    else
       c(k)=c(k-1)+p(k);
       s(k)=c(k)*255;
       r(k)=floor(s(k));
    end
  end
  subplot(3,1,3)
  stem(r,z)
  title('histogram')
```

Program to plot bar graph of histogram

>>im=rgb2gray(I);
>> imhist(im);

```
>> j=imhist(im);
>> bar(j);
>> j

j =

       0
       0
       0
       0
       0
       0
       0
       0
       0
       0
       0
       1
       0
      13
      21
      51
      95
     138
     215
     196
     265
     312
     400
     431
     467
     466
     473
     427
     419
     430
     399
     374
     340
     308
     276
     235
     204
     206
     176
     165
```

170
196
199
190
206
204
254
232
306
357
386
398
455
399
463
534
470
476
476
533
607
584
701
776
708
732
753
739
703
604
594
487
406
295
250
253
189
174
164
172
171
171
160
152
164
154

127
159
153
149
148
158
124
170
136
146
167
181
174
202
181
187
165
212
208
186
217
192
195
191
179
199
191
189
206
181
200
215
181
212
161
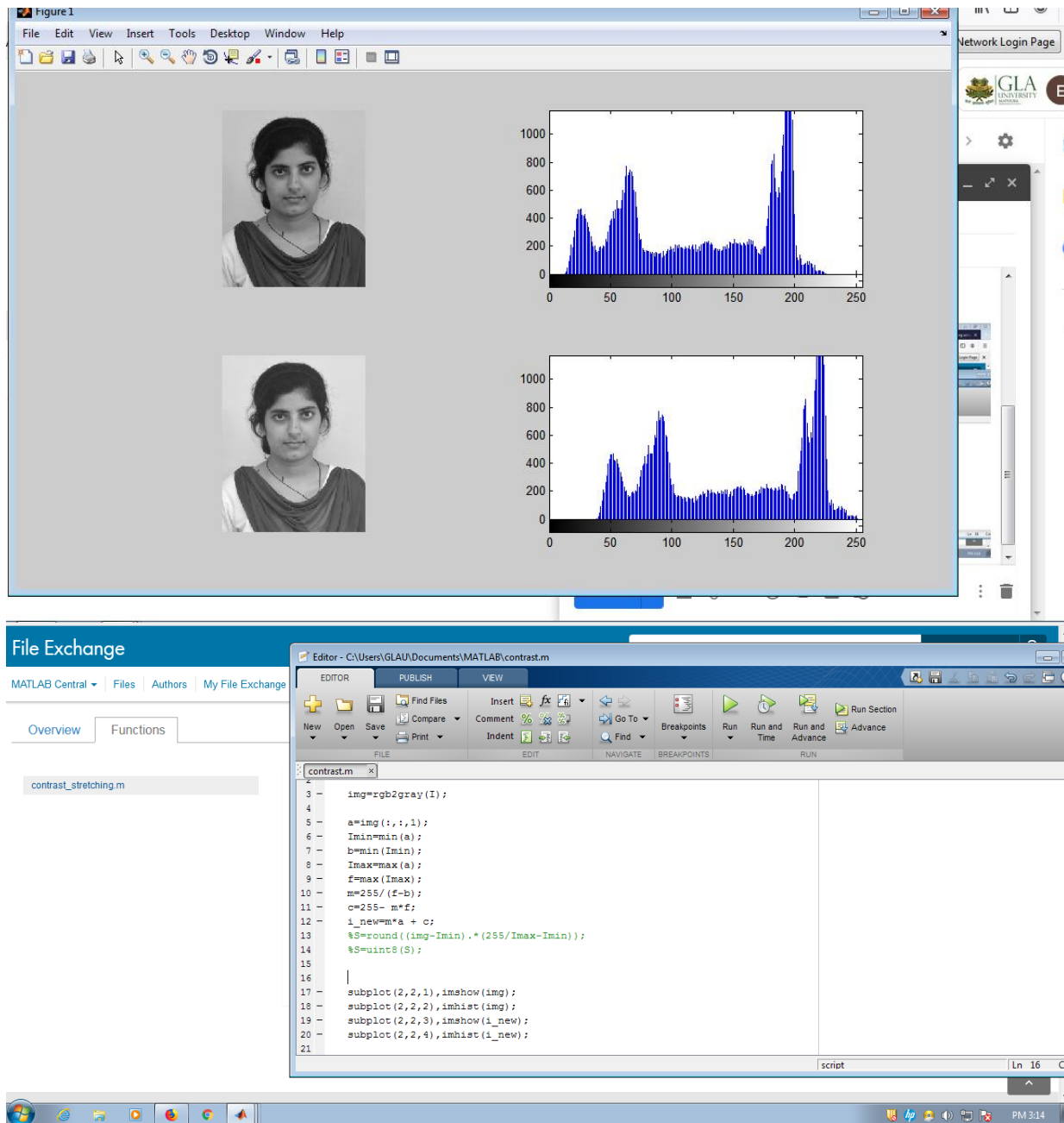184
205
167
216
220
224
233
238
231
243
217

225
212
177
191
187
183
167
181
170
178
199
203
184
214
189
235
226
223
224
254
227
223
220
229
217
207
230
222
208
232
215
255
249
217
240
199
204
185
153
152
145
179
190
204
201
344

400
490
583
787
816
863
693
591
555
623
586
739
920
999
1321
1929
2514
2768
2894
2016
1105
744
432
208
120
104
142
119
71
70
74
81
93
71
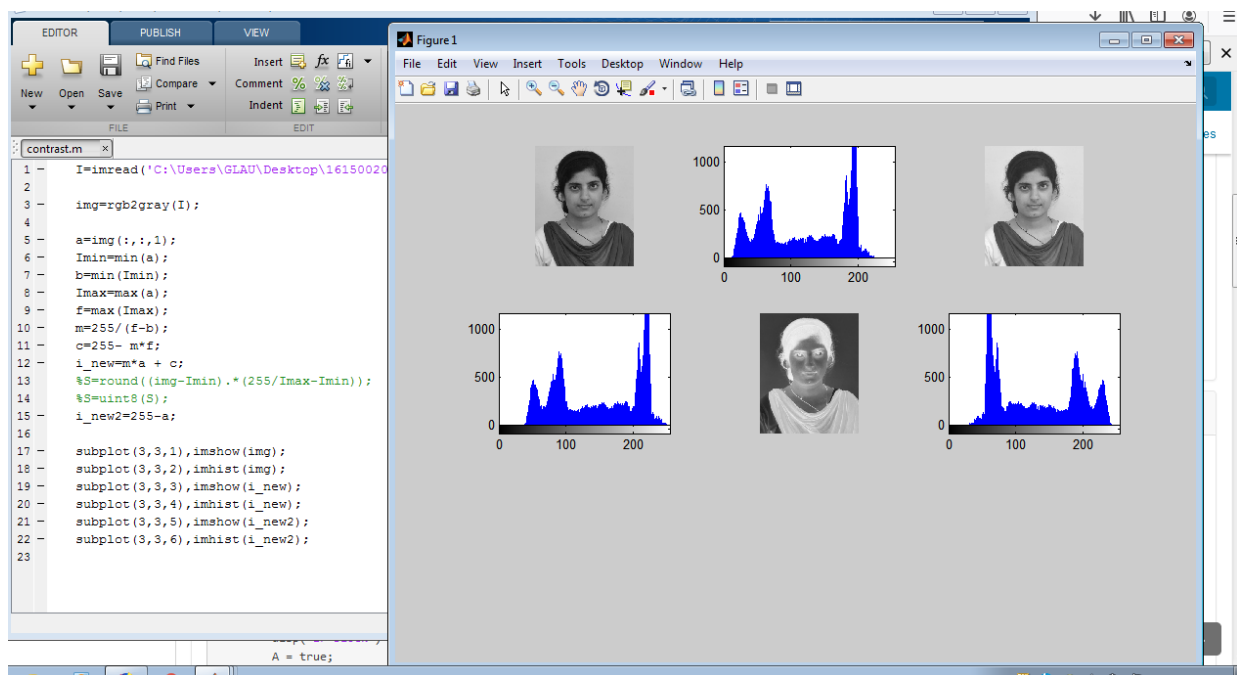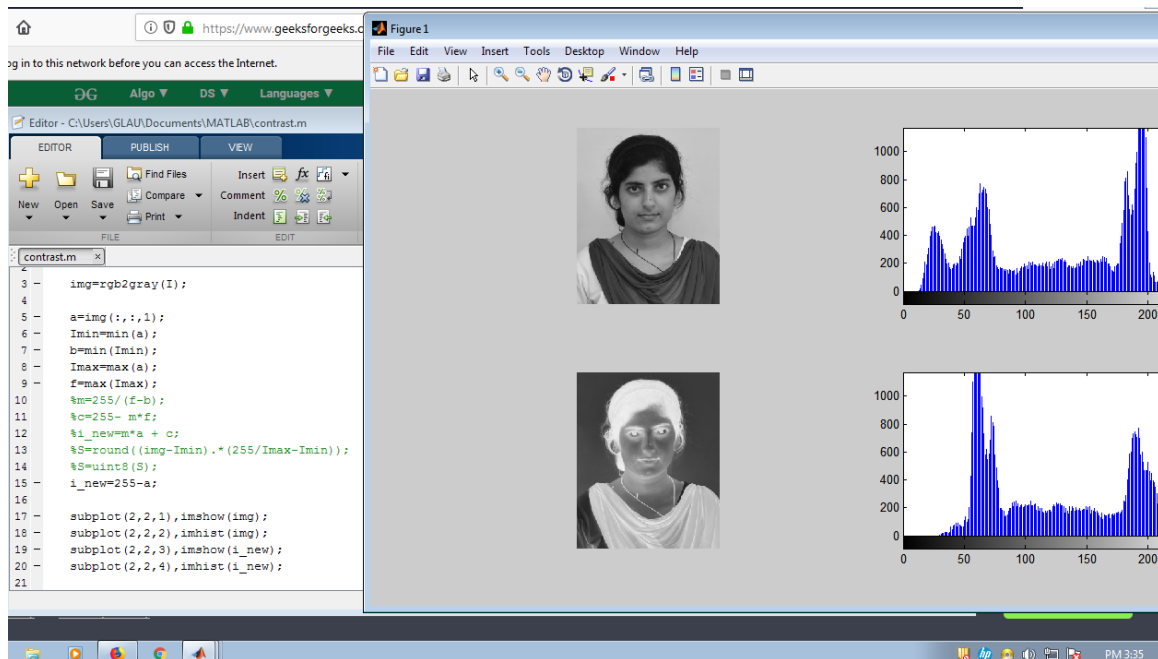98
82
76
52
67
30
22
27
27
27
20
22

```
15
9
3
1
1
1
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
```

>> bar(j);

Contrast Stretching


```
3 -     img=rgb2gray(I);
4
5 -     a=img(:,:,1);
6 -     Imin=min(a);
7 -     b=min(Imin);
8 -     Imax=max(a);
9 -     f=max(Imax);
10 -    m=255/(f-b);
11 -    c=255- m*f;
12 -    i_new=m*a + c;
13      %S=round((img-Imin).*(255/Imax-Imin));
14      %S=uint8(S);
15
16      |
17 -    subplot(2,2,1),imshow(img);
18 -    subplot(2,2,2),imhist(img);
19 -    subplot(2,2,3),imshow(i_new);
20 -    subplot(2,2,4),imhist(i_new);
21
```

Inverse of an image

Gamma correction on images