Sprawozdanie PSIwSUM

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Zadanie 6.1

Kod:

```
clear all;
close all;
clc;

lut=[];
x=[];
y=[];

x= [10 20 30 40 40 30 20 10;
    160 160 60 60 60 60 10 110;
    160 60 50 30 20 40 20 40;
    140 60 70 80 80 70 60 10;
    160 60 70 80 80 70 60 10;
    160 60 70 70 70 70 60 160;
    10 20 20 20 30 30 20 10;
    150 120 120 100 120 120 120 110;
    ];

[m,n]=size(x);
for i=1:50
     lut(i) = 0*i;
 end
for i=50:100
     lut(i) = 1.6*(i-50);
 end

 for i=100:200
     lut(i) = 0.8*(i-100);
 end
  for i=1:m
     for j=1:n
         y(i,j)=lut(x(i,j));
     end
 end
```

```
t=1:50;
 t1=50:99.9;
 t2=100:200;

figure(1)
 plot(t,lut(t),t1,lut(t1),'b-',t2,lut(t2))
 title('Table LUT')
 xlabel('grayscale range of input image f')
 ylabel('grayscale range of output image g')

 figure(2)
subplot(331)
imshow(uint8(x),gray(256))
title('Input Im')

subplot(332)
imhist(uint8(x),gray(256))
title('Histogram Im')

subplot(335)
 plot(t,lut(t),t1,lut(t1),'b-',t2,lut(t2))
title('LUT')

subplot(337)
imshow(uint8(y),gray(256))
title('Output Im')

subplot(338)
imhist(uint8(y))
title('Histogram Out')
```

Wyniki:

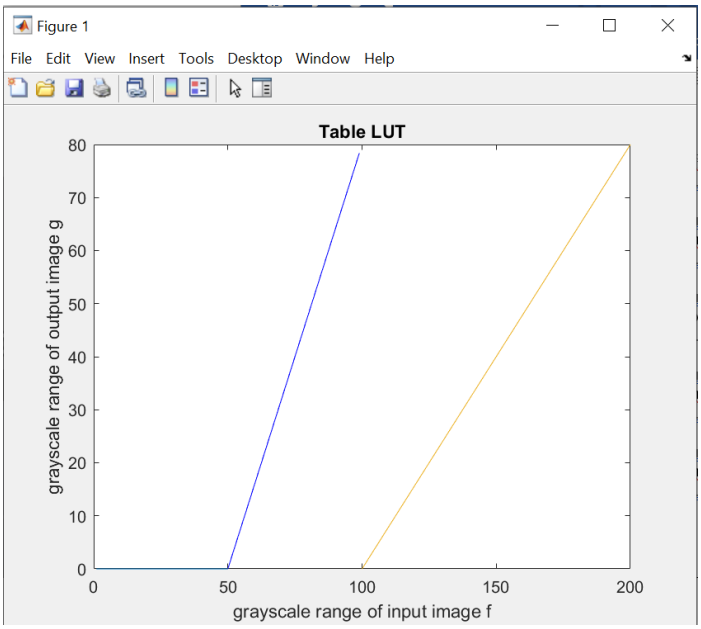
Figure 1
File Edit View Insert Tools Desktop Window Help
Table LUT
grayscale range of output image g
grayscale range of input image f
0
10
20
30
40
50
60
70
80
0
50
100
150
200

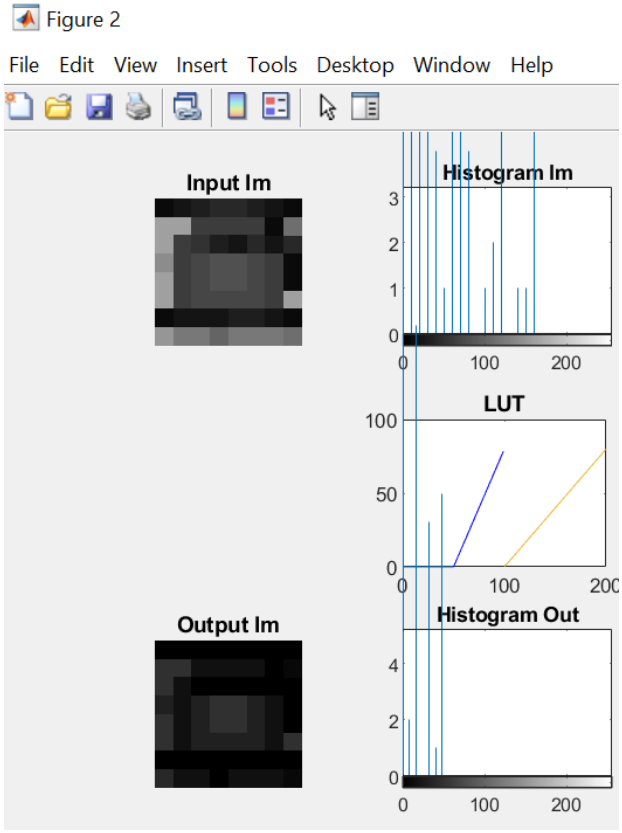
Figure 2
File Edit View Insert Tools Desktop Window Help
Input Im
Histogram Im
LUT
Output Im
Histogram Out
0
1
2
3
4
50
100
200

Zadanie 6.2

```
clear all;
close all;
clc;

x=imread('C:\Users\User\Downloads\Mercury.bmp');
y=[];
lut=[];

x=rgb2gray(x);
x=im2uint8(x);

[m,n]=size(x);

x(x==0)=1;
x(x>=200)=199;

 Gmax=max(x);
 Gmax=max(Gmax);
 Gmin=min(x);
 Gmin=min(Gmin);

for i=1:50
     lut(i) = 0*i;
 end

 for i=50:100
     lut(i) = 1.6*(i-50);
 end

 for i=100:200
     lut(i) = 0.8*(i-100);
 end
  for i=1:m
     for j=1:n
         y(i,j)=lut(x(i,j));
     end
 end

t=1:50;
 t1=50:99.9;
 t2=100:200;

plot(t,lut(t),t1,lut(t1),'b-
',t2,lut(t2))
title('Table - LUT')
xlabel('Grayscale range of In im F')
ylabel('Grayscale range of Out im G')

subplot(331)
imshow(uint8(x),gray(256))
title('Input Im')

subplot(332)
imhist(uint8(x),gray(256))
title('Histogram Im')

subplot(335)
plot(t,lut(t),t1,lut(t1),'b-
',t2,lut(t2))
title('LUT')

subplot(337)
imshow(uint8(y),gray(256))
title('Output Im')

subplot(338)
imhist(uint8(y))
title('Histogram Out')
```

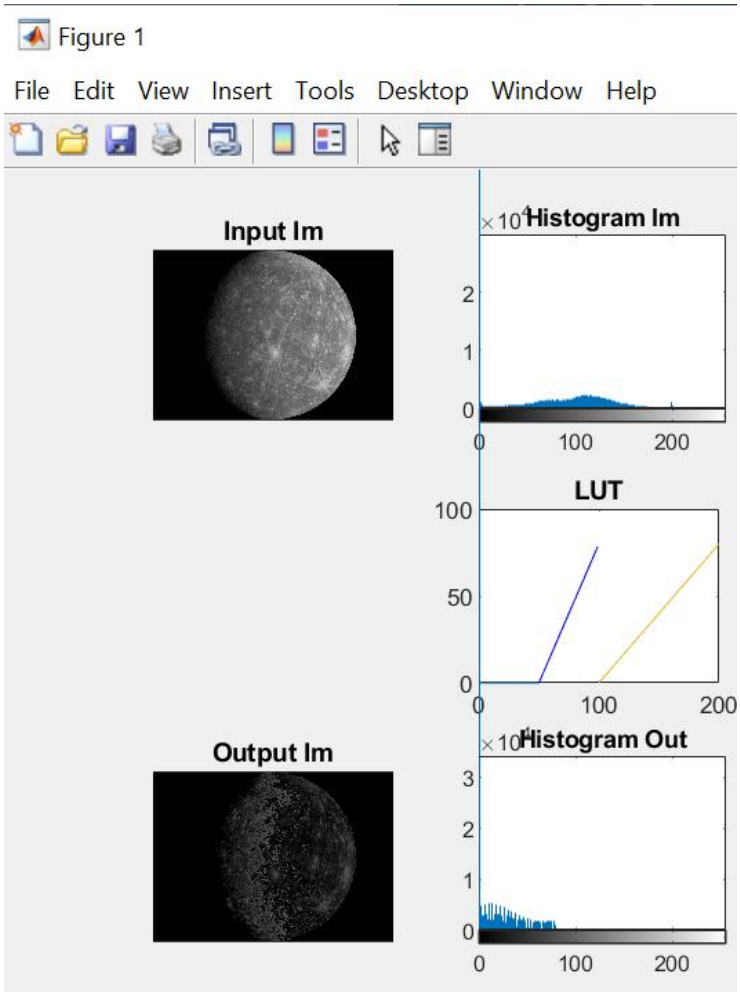
Figure 1
File Edit View Insert Tools Desktop Window Help
Input Im
Histogram Im
×10^4
2
1
0
0
100
200
LUT
100
50
0
0
100
200
Output Im
Histogram Out
×10^4
3
2
1
0
0
100
200