Task1

```matlab
X = imread('vesna.jpg');
I=im2double(rgb2gray(X));
ID= histeq(I);
subplot(2,2,1),imshow(I)
subplot(2,2,2), imhist(I,256)
subplot(2,2,3), imshow(ID)
subplot(2,2,4), imhist(ID)
```

Task2
```matlab
X = imread('vesna.jpg');
[I, map] = gray2ind(X,256);
ID= histeq(I,256);
subplot(2,2,1),imshow(I, map);
subplot(2,2,2),imshow(ID,map)
subplot(2,2,3), imhist(I,map)
subplot(2,2,4), imhist(ID,map)
```

Task3
```matlab
D= imread('vesna.jpg');
I=im2double(rgb2gray(D));
L=imrotate(I,10,'bicubic');
c1=xcorr2(I,I);
c2=xcorr2(I,L);
L1=imrotate(I,90,'bicubic');
c22=xcorr2(I,L1);
L2=imrotate(I,180,'bicubic');
c23=xcorr2(I,L2);
subplot(2,2,1),mesh(c1)
title('autocorr. function')
subplot(2,2,2),mesh(c2)
title('corr. function 10')
subplot(2,2,3),mesh(c22)
title('corr. function 90')
subplot(2,2,4),mesh(c23)
title('corr. function 180')
```

Task4
```matlab
D=imread('rock.jpg');
I=im2double(rgb2gray(D));
c1=xcorr2(I,I);
MaI=max(I(:));
NI=MaI-I;
c2=xcorr2(I,NI);
subplot(2,2,1),mesh(c1)
title('autocorr. function')
subplot(2,2,2),mesh(c2)
title('corr. function')
```