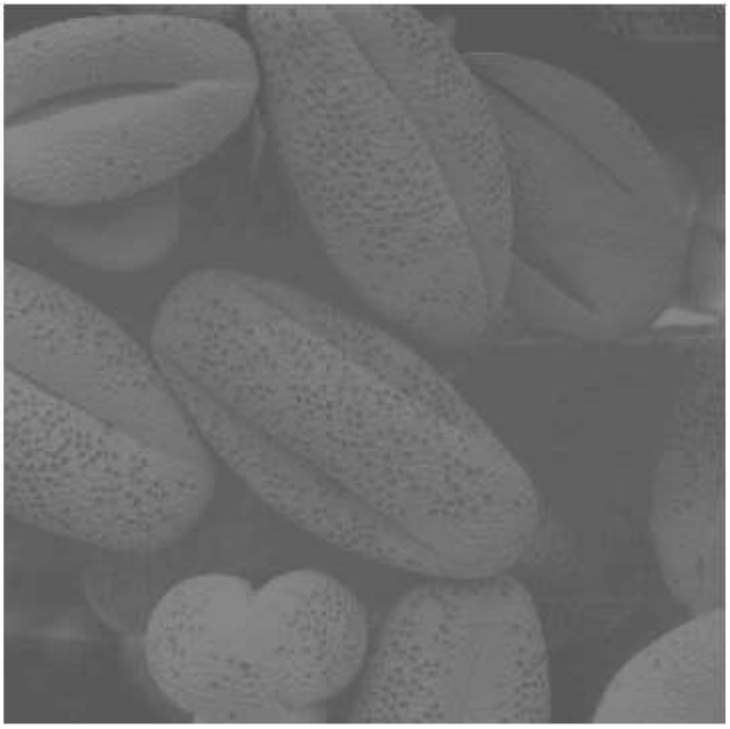
I4_4

```
##histogram equalisation

A = imread('ex_contrast.tif');

B = zeros(255,1);
[c,r] = size(A);

for i=0:1:255
  B(i+1,1)=sum(A(:)==i);
end

B = B/(r*c);
for i=1:1:255
  B(i+1,1) = B(i+1,1)+B(i,1);
end

for i=0:1:255
  B(i+1,1) = round(B(i+1,1)*255);
end

C = zeros(r,c);

for i=1:1:r
  for j=1:1:c
    C(i,j) = B(A(i,j)+1);
  end
end

imshow(A);
figure,imshow(C,[]);
```



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I5_1

```
##Q1
A = imread('pout.tif');
for i=0:1:7
B = A/(2^i);
  subplot(3,3,i+1);
  imshow(B,[]);
end
```

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I5_2

```
img = imread('cameraman.tif');
img = imresize(img, 0.5);

[c,r] = size(img);
diff = (r-1)/(2*r-1);

c = 2*c;
r = 2*r;

X = zeros(r,c);
Y = zeros(r,c);

X(1,1) = 1;
Y(1,1) = 1;

for i=1:1:r
    X(i,1)=1;
end

for i=1:1:c
    Y(1,i)=1;
end

for i=1:1:r
    prevX = 1;
    for j=2:1:c
        X(i,j) = prevX + diff;
        prevX = X(i,j);
    end
end

for i=1:1:c
    prevY = 1;
    for j=2:1:r
        if(i == 1 && j == 1)
            continue;
        end
        Y(j,i) = prevY + diff;
        prevY = Y(j,i);
    end
end

newImg = zeros(r,c);
for i=1:1:r
    for j=1:1:c
        newImg(i,j) = img(round(Y(i,j)),round(X(i,j)));
    end
end

imshow((newImg),[]);
```

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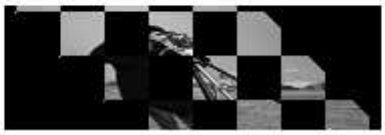
I5_3

```
A = imread('cameraman.tif');
A = imresize(A,0.5);
B = zeros(128,384);
B = double(B);

for i=1:1:128
  for j=1:1:128
    x = i*2+j;
    B(j,x) = A(j,i);
  end
end
subplot(2,2,1);
imshow(B,[]);
B1=B;
tform = maketform('affine',[1 0 0; 0.5 1 0; 0 0 1]);
B1 = imtransform(A,tform);
subplot(2,2,2);
imshow(B1,[]);

C = zeros(512,128);
C = double(C);
for i=1:1:128
   for j=1:1:128
    y = i+j*3;
    C(y,i) = A(j,i);
   end
end
subplot(2,2,3);
imshow(C,[]);
C1=C;
tform = maketform('affine',[1 0 0; 0.5 1 0; 0 0 1]);
C1 = imtransform(A,tform);
subplot(2,2,4);
imshow(C1,[]);
```



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