```
X = imread("C:\Users\bryne\CS 3320\Image Compression\DSC_1551a.tif");
    % image 1

imshow(X);
figure

X1 = X;
p = 6; % for good image
% p = 13; for usable image

C = calc_c(8);
Q = p*8./hilb(8);


r=X(:,:,1);g=X(:,:,2);b=X(:,:,3);

sz = size(X);
n = sz(1)/8;
m = sz(2)/8;

rd = double(r);
rc = rd-128;
r1 = rc;
for i=0:n-1
    row=int64((i*8)+1);
    for j=0:m-1
        col=int64((j*8)+1);

        x_c = rc(row:(row+7),col:(col+7));
        Y = C*x_c*C';

        Yq = round(Y./Q);

        Ydq=Yq.*Q;
        Xdq=C'*Ydq*C;
        Xe=Xdq+128;
        Xf=uint8(Xe);
        r1(row:(row+7),col:(col+7)) = Xf;

    end
end

gd = double(g);
gc = gd-128;
g1 = gc;
for i=0:n-1
    row=int64((i*8)+1);
    for j=0:m-1
        col=int64((j*8)+1);
```

```
        x_c = gc(row:(row+7),col:(col+7));
        Y = C*x_c*C';
        Yq = round(Y./Q);

        Ydq=Yq.*Q;
        Xdq=C'*Ydq*C;
        Xe=Xdq+128;
        Xf=uint8(Xe);
        g1(row:(row+7),col:(col+7)) = Xf;

    end
end

bd = double(b);
bc = bd-128;
b1 = bc;
for i=0:n-1
    row=int64((i*8)+1);
    for j=0:m-1
        col=int64((j*8)+1);

        x_c = bc(row:(row+7),col:(col+7));
        Y = C*x_c*C';
        Yq = round(Y./Q);

        Ydq=Yq.*Q;
        Xdq=C'*Ydq*C;
        Xe=Xdq+128;
        Xf=uint8(Xe);
        b1(row:(row+7),col:(col+7)) = Xf;

    end
end

X1(:,:,1)=r1;X1(:,:,2)=g1;X1(:,:,3)=b1;
imshow(X1);
```

```
function c=calc_c(n)
for i=1:n
    for j=1:n
        c(i,j)=cos(((i-1)*(2*j-1) *pi)/(2*n));
    end
end
for j=1:n
    c(1,j) = 1/sqrt(2);
end
c=sqrt(2/n)*c;
c;
```

Name	Value
b	*3280x4928 uint8*
b1	*3280x4928 double*
bc	*3280x4928 double*
bd	*3280x4928 double*
C	*8x8 double*
col	4921
g	*3280x4928 uint8*
g1	*3280x4928 double*
gc	*3280x4928 double*
gd	*3280x4928 double*
i	409
j	615
m	616
n	410
p	6
Q	*8x8 double*
r	*3280x4928 uint8*
r1	*3280x4928 double*
rc	*3280x4928 double*
rd	*3280x4928 double*
row	3273
sz	[3280,4928,3]
X	*3280x4928x3 uin...*
X1	*3280x4928x3 uin...*
x_c	*8x8 double*
Xdq	*8x8 double*
Xe	*8x8 double*
Xf	*8x8 uint8*
Y	*8x8 double*
Ydq	*8x8 double*

Name	Value
Yq	*8x8 double*

MENORS FERRY BOAT
GENERAL STORE
MAUD NOBLE CABIN
RESTROOMS

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