

```
X = imread("C:\Users\bryne\CS 3320\Image Compression\DSC_1920a.tif");  
    % image 2
```

```
imshow(X);  
figure
```

```
X1 = X;  
p = 6; % for good image  
% p = 12; % 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	<i>8x8 double</i>

