I=imread('C:\Users\Administrator\Desktop\lena.jpg');

[M N]=size(rgb2gray(I));

m=mod(M,8);n=mod(N,8);

J=I(1:M-m,1:N-n,:);

K=rgb2ycbcr(J);

K1=double(K(:,:,1))-128;

K2=double(K(:,:,2))-128;

K3=double(K(:,:,3))-128;

m1=[16 11 10 16 24 40 51 61

12 12 14 19 26 58 60 55

14 13 16 24 40 57 69 56

14 17 22 29 51 87 80 62

18 22 37 56 68 109 103 77

24 35 55 64 81 104 113 92

49 64 78 87 103 121 120 101

72 92 95 98 112 100 103 99];

m2=[17 18 24 47 99 99 99 99

18 21 26 66 99 99 99 99

24 26 56 99 99 99 99 99

47 66 99 99 99 99 99 99

99 99 99 99 99 99 99 99

99 99 99 99 99 99 99 99

99 99 99 99 99 99 99 99

99 99 99 99 99 99 99 99];

for i=0:1:(M-m-8)/8

for j=0:1:(N-n-8)/8

y1=dct2(K1(i\*8+1:i\*8+8,j\*8+1:j\*8+8));

c1(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=round(y1./m1);

y2=dct2(K2(i\*8+1:i\*8+8,j\*8+1:j\*8+8));

c2(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=round(y2./m2);

y3=dct2(K3(i\*8+1:i\*8+8,j\*8+1:j\*8+8));

c3(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=round(y3./m2);

end

end

for i=0:1:(M-m-8)/8

for j=0:1:(N-n-8)/8

b1(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=idct2(c1(i\*8+1:i\*8+8,j\*8+1:j\*8+8).\*m1)+128;

b2(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=idct2(c2(i\*8+1:i\*8+8,j\*8+1:j\*8+8).\*m2)+128;

b3(i\*8+1:i\*8+8,j\*8+1:j\*8+8)=idct2(c3(i\*8+1:i\*8+8,j\*8+1:j\*8+8).\*m2)+128;

end

end

b1=uint8(b1);b2=uint8(b2);b3=uint8(b3);

BYIQ=cat(3,b1,b2,b3);B=ycbcr2rgb(BYIQ);

sum1=0;sum2=0;sum3=0;

for i=1:(M-m)

for j=1:(N-n)

if c1(i,j)==0

sum1=sum1+1;

end

end

end

for i=1:(M-m)

for j=1:(N-n)

if c2(i,j)==0

sum2=sum2+1;

end

end

end

for i=1:(M-m)

for j=1:(N-n)

if c3(i,j)==0

sum3=sum3+1;

end

end

end

sum=sum1+sum2+sum3;

ysb=(M\*N\*3-sum)/(M\*N\*3)

subplot(121);imshow(I);title('原图');

subplot(122);imshow(B);title('压缩图');



