PRACTICAL No. 9

AIM:- Image Compression.

Install Image Processing and Signal Processing packages and restart scilab.

Run this command on console: atomsRemove('scicv')

Restart scilab

And run code

(a) Block Truncation Coding BTC (Output in the form of Matrix).

Code:-

```
close;
clear;
clc;
x=[65,75,80,70;72,75,82,68;84,72,62,65;66,68,72,80];
disp(x,"Original Block is x = " );
[ m1 n1 ] = size(x);
blk = input("Enter the block size: ");
for i = 1:blk:m1
   for j = 1:blk:n1
      y = x(i:i+(blk-1),j:j+(blk -1));
      m = mean(mean(y));
      disp(m,"mean value is m = ");
      sig = stdev(y);
      disp(sig,"Standard deviation of the block is = ");
      b = y>m;
      disp(b,"Binary allocation matrix is B= ");
      K = sum(sum(b));
      disp(K,"number of ones = ");
      if(K~=blk^2)&( K~=0)
         ml = m-sig*sqrt(K/((blk^2)-K));
         disp(ml,"The value of a = ");
         mu = m+sig*sqrt(((blk^2)-K)/K);
         disp(mu,"The value of b = ");
         x(i:i+(blk-1),j:j+(blk-1))=b*mu+(1-b)*ml;
      end
   end
end
disp(round(x),"Reconstructed Block is x = " );
```

Output

Original Block is x =

```
  65.   75.   80.   70.
  72.   75.   82.   68.
  84.   72.   62.   65.
  66.   68.   72.   80.
```

Enter the block size: 4

mean value is m =

72.25

Standard deviation of the block is =

6.6282225

Binary allocation matrix is B=

```
F T T F
F T T F
T F F F
F F F T
```

number of ones =

6.

The value of a =

67.115801

The value of b =

80.806998

Reconstructed Block is x =

```
  67.   81.   81.   67.
  67.   81.   81.   67.
  81.   67.   67.   67.
  67.   67.   67.   81.
```