```
clear all;
I=imread('pic1.jpg');
I=I(:,:,1);
img = I;
soi=size(I);
c1=70;  %1st Centroid
c2=150; %2nd Centroid
c3=220; %3rd Centroid
k=0;    %check condition, it will remain 0 till there is no difference in
current & new centroid
s=0;    %Use to merge new cluster image with previous image
p=0;    %Detect number of clustering process

% Clustering Process
while k ==0;
    a=0;b=0;c=0;
    d1=0;d2=0;d3=0;
    cl1=zeros();    %All the pixels of cluster 1 are stored in this Array
    cl2=zeros();    %All the pixels of cluster 2 are stored in this Array
    cl3=zeros();    %All the pixels of cluster 3 are stored in this Array
    img1=zeros();   %represnt new image produced after clustering

    for i = 1:soi(1,1);
        for j=1:soi(1,2);
            if I(i,j)<c1;           %% Finding difference B/W 1st centroid &
pixel value,
                d1=c1-I(i,j);       %% for positive result, taking greater
value first
            end
            if I(i,j)>c1;
                d1=I(i,j)-c1;
            end

            if I(i,j)<c2;           %% Finding difference B/W 2nd centroid &
pixel value,
                d2=c2-I(i,j);
            end
            if I(i,j)>c2;
                d2=I(i,j)-c2;
            end

            if I(i,j)<c3;           %% Finding difference B/W 3rd centroid &
pixel value,
                d3=c3-I(i,j);
            end
            if I(i,j)>c3;
                d3=I(i,j)-c3;
            end
                                     % Finding smallest difference B/W
centroid & pixel value,
            if(d1<d2)&&(d1<d3);      % if (d1) difference B/W 1st centroid &
pixel value is minimum
                img1(i,j)=c1;        % placing the value of centroid at
position of pixel in new image img1
            end
```

```
            if(d2<d1)&&(d2<d3);       % if (d2) difference B/W 2nd centroid &
pixel value is minimum
                img1(i,j)=c2;         % placing the value of centroid at
position of pixel in new image img1
            end

            if(d3<d1)&&(d3<d2);       % if (d3) difference B/W 3rd centroid &
pixel value is minimum
                img1(i,j)=c3;         % placing the value of centroid at
position of pixel in new image img1
            end

        end
    end

%% Getting new centroid by averaging the cluster values
    a=1;b=1;c=1;
    for i=1:soi(1,1);
        for j=1:soi(1,2);
            if img1(i,j)== c1;       %Findind location of pixel who belongs to
1st centroid
                cl1(1,a)=I(i,j);     %Placing value in new array , in nextstep
we will take average of this array to find new centroid
                a=a+1;
            end

            if img1(i,j)==c2;
                cl2(1,b)=I(i,j);
                b=b+1;
            end

            if img1(i,j)==c3;
                cl3(1,c)=I(i,j);
                c=c+1;
            end
        end
    end

    nc1 = sum(cl1)/(a-1);            %Calculating new centroid value by
averaging array
    nc2 = sum(cl2)/(b-1);
    nc3 = sum(cl3)/(c-1);
    img1=uint8(img1);

    if(c1==nc1)&&(c2==nc2)&&(c3==nc3);
        k=1;
    end
    if(c1~=nc1)|(c2~=nc2)|(c3~=nc3);
        c1=nc1;                          %Alloting new values to centroids
        c2=nc2;
        c3=nc3;
        k=0;
    end

    p=p+1;      %Counting Clustering process
```

```
    %% To Show result of all clustering in one image,
    for l = 1:soi(1,1)
        for n = 1+s:s+soi(1,2)
            out(l,n) = img1(l,n-s);
        end
    end
    s=s+soi(1,2);
end
imshow(out);
title('Gradually Improving Clustering');
```

INPUT IMAGE

OUTPUT IMAGE:

P=6

After 6 process, centroid became constant value. So there is no change in image after 6 process

INPUT IMAGE

502 Central Wks PEME. T1

ELECTRICAL AND MECHANICAL ENGINEERING REGULATIONS
PAKISTAN
(A 1 (P) 52/54)

RESTRICTED

WORKSHOP
B—011

SAFETY PRECAUTIONS IN WORKSHOPS

ELECTRICAL SHOCK HAZARD

INTRODUCTION

1. The purpose of this instruction is to bring to the attention of all ranks, particularly workshop supervisors, the dangers inherent in electrical shock, and the necessity for speedy and intelligent action by anyone on the scene when an accident occurs.

2. It is essential that *ALL* personnel be trained in the most up-to-date method of resuscitation. Posters depicting the method are to be displayed in prominent positions in all workshop sections.

3. All personnel, whether or not employed on electrical work, are, to a certain extent, liable to the dangers of electrical shock from defective wiring, appliances and machinery. Personnel regularly employed on electrical work (including radar, control equipment and communications) are of course particularly exposed to this hazard.

DANGEROUS VOLTAGES

4. It is not always understood that the effects of an electrical shock on the human body are directly related to the current passing through the body, and only indirectly to the voltage applied. A given voltage may cause anything from a tingling sensation to a violent shock, or even death, depending on area of contact, skin resistance, path of the current through the body, the state of health of the individual, and other factors. Investigations based on reactions of the average human body have shown that at supply frequencies a current of 1 to 2 mA gives the first sensation of electrical shock whilst 8 mA causes serious discomfort. A current of 15 mA passing through the body is almost certain to produce fatal results.

5. The resistance of the human body varies somewhat inversely with voltage as is shown in fig 1. From this it will be seen that any voltage in excess of 40 V can, under certain conditions, prove to be dangerous if not fatal. However, where human life is concerned, voltages in excess of 25 V must always be considered as dangerous.

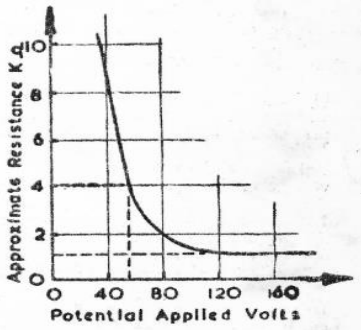

FIG 1 - VARIATION OF HUMAN BODY RESISTANCE WITH APPLIED VOLTAGE

6. In electirc shock the current may affect the centre in the brain which controls the muscles responsible for breathing, these muscles then cease to act and breathing stops abruptly and the victim falls unconscious and apparently lifeless. In fact, however, the heart is still beating, though the beats may be imperceptible, and the blood is still circulating. The recovery of such cases depends on the immediate application of efficient artificial respiration; this must be continued until the breathing centre in the brain recovers from the shock when normal breathing will recommence; the period of recovery may take minutes or even hours but artificial respiration should not be stopped until there is recovery or until examination by a medical officer shows that the victim is dead.

7. The electric current may affect the heart muscle causing irregular action instead of steady contractions; in severe cases the heart muscle may cease action entirely. Immediate artificial respiration will aid in restoring regular heart action. The immediate action of an electric shock on the heart is difficult to assess even by an experienced medical officer and artificial respiration must always be continued until the medical officer is convinced that the heart action has ceased beyond hope of recovery.

Issue 1, 25 January 1967.

DISTRIBUTION—CLASS 1.6—CODE NO 3

Page 1

7 24 of ch. 10 5 67

OUTPUT Results: Warning: Image is too big to fit on screen; displaying at 33%

Result of Last Clustering