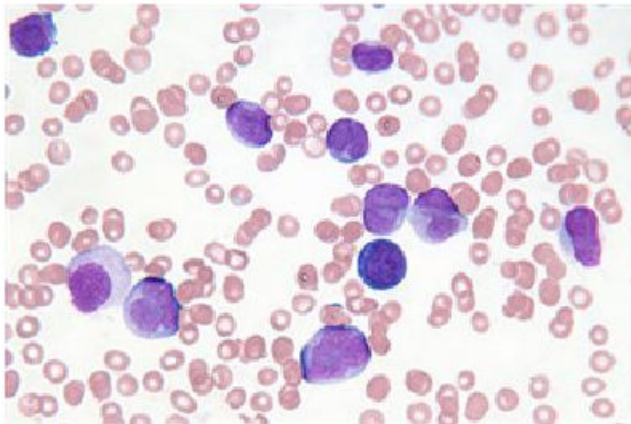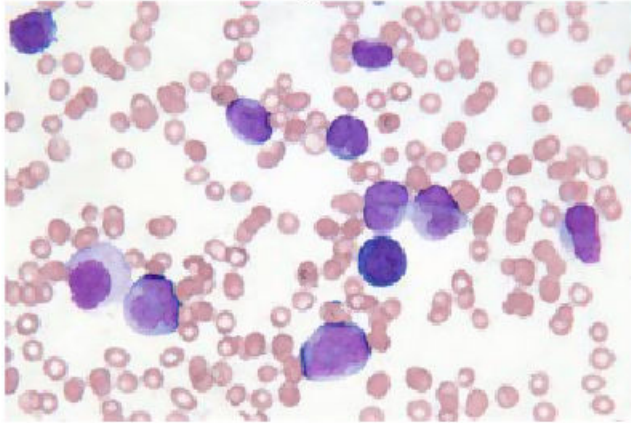```
clc;
close all;
clear all; warning off;
I=imread('F2.jpg');
I=imresize(I,[200,300]);
size(I);
figure;
imshow(I);
```
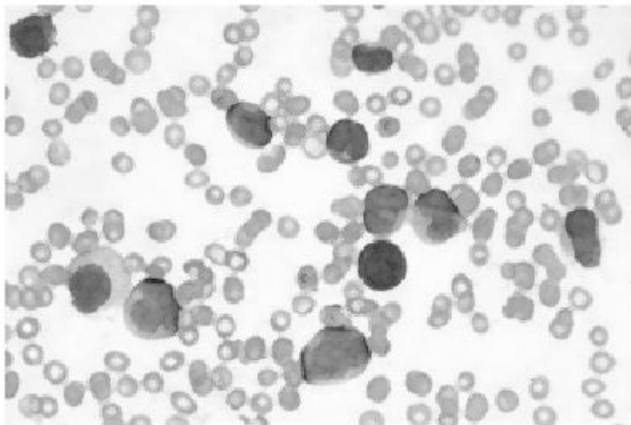


```
rgb = imopen(I,strel('disk',1));

figure;
imshow(rgb);
title('background');
```

background

```
gray_image = rgb2gray(rgb);
imshow(gray_image);
```



```
[centers, radii] = imfindcircles(rgb,[2
80],'ObjectPolarity','dark','Sensitivity',0.9)
```

centers = 184×2
```
  179.4821  124.0567
  144.3562  129.3402
   13.3227   15.2535
  276.4435   46.0635
  163.7489   65.1445
   91.1105   71.4505
  244.5518   78.9247
  196.8794  180.1003
  258.0000   70.4268
```

```
   232.3548    85.5275
        .
        .
        .
radii = 184×1
    12.3931
     4.5525
    10.6648
     5.7373
    10.7904
     5.1212
     4.9267
     5.8743
     6.3828
     5.0580
        .
        .
        .
```
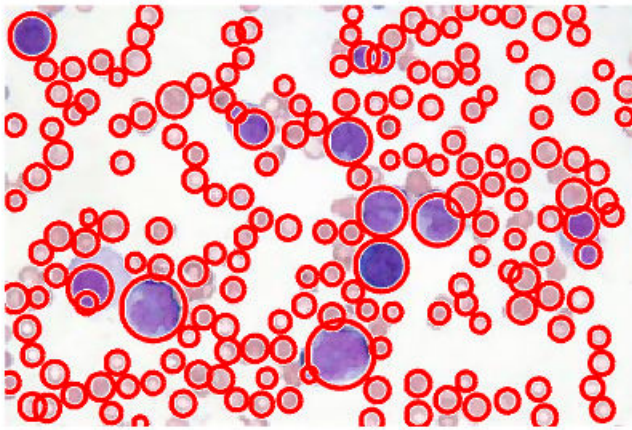
```matlab
imshow(rgb);

CNN_read = imread('F2.jpg');
Neurons = size(CNN_read);
cell = length(centers);
M = mean(radii);
max = max(radii);
h_Layers = viscircles(centers,radii);
```
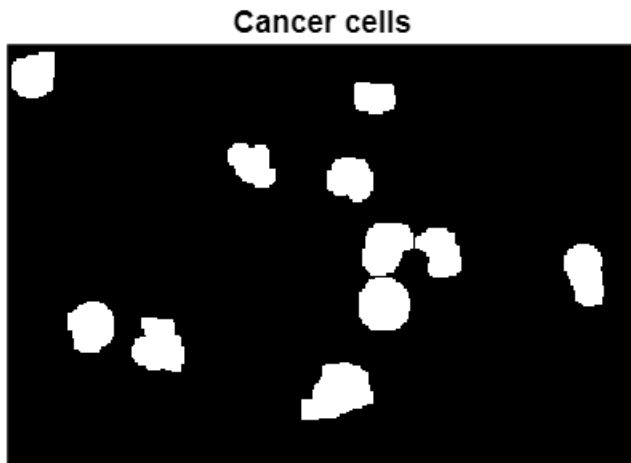


```matlab
red=rgb(:,:,1);green= rgb(:,:,2); blue= rgb(:,:,3);
CNN_Features=red>25 & red<199 &green<130 & blue>140 & blue<225;
out1=imfill(CNN_Features,'holes');
out2=bwmorph(out1,'erode');
out3=bwmorph(out2,'dilate',1.2);
out3=imfill(out3,'holes');
out3=bwareaopen(out3,100);

figure;
imshow(out3);
```

```matlab
title('Cancer cells')
```


Cancer cells

```matlab
out3=im2bw(out3);
[l,NUM]=bwlabel(out3,4);

cancer=(NUM/cell)*100;
  disp('Myeloid cells percentage is');
```

Myeloid cells percentage is

```matlab
    disp(cancer);
```

    5.9783

```matlab
if cancer<0.8
    disp('Healthy. No Problem');
elseif cancer<1 & cancer>0.5
        disp('High myeloid cell concentration.');

    elseif cancer > 1 & cancer < 8
            disp('Initial Stage Leukemia');

        elseif cancer > 8
                disp('Advanced Stage Leukemia');

end
```

Initial Stage Leukemia