



Lab-report:08

Course Name: Digital Image Processing

Course Code: CSE438

Section No: 03

Submitted To:

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Problem 1: Generate a binary mask of the tumor from Figure 1 using any segmentation method of your choice, then apply:

- i. Morphological Dilation
- ii. Morphological Erosion

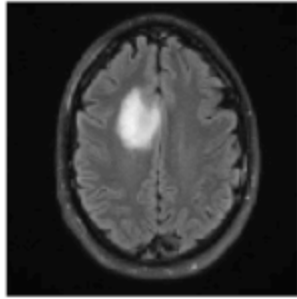
By using appropriate structuring element on the mask.

Code:

```
img = imread('tumor.PNG');
gray_img = rgb2gray(img);
threshold = graythresh(gray_img);
binary_mask = imbinarize(gray_img, threshold);
se = strel('disk', 5);
dilated_mask = imdilate(binary_mask, se);
eroded_mask = imerode(binary_mask, se);
figure;
subplot(2, 2, 1);
imshow(gray_img);
title('Original Gray Image');
subplot(2, 2, 2);
imshow(binary_mask);
title('Binary Mask');
subplot(2, 2, 3);
imshow(dilated_mask);
title('Morphological Dilation');
subplot(2, 2, 4);
imshow(eroded_mask);
title('Morphological Erosion');
```

Output:

Original Gray Image



Binary Mask



Morphological Dilation



Morphological Erosion



Problem 2: Apply the Hough transform to Figure 2 and draw the detected lines on the original image.

Code:

```
img = imread("img2.png");
grayImg = rgb2gray(img);
edgeImg = edge(grayImg, 'Canny');
[H,theta,rho] = hough(edgeImg, 'Theta',-90:0.5:89.5);
peaks = houghpeaks(H,10, 'Threshold',0.3*max(H(:)));
lines = houghlines(edgeImg,theta,rho,peaks, 'FillGap',10, 'MinLength',20);
imshow(img);
hold on;
for k = 1:length(lines)
xy = [lines(k).point1; lines(k).point2];
plot(xy(:,1),xy(:,2), 'LineWidth',2, 'Color','green');
end
```

Output:

