**University of the Punjab**

**Gujranwala Campus**

**Department of Information Technology**



**Assignment: Computer Vision**

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**Feature Extraction**

% Read the image

Coins = imread('coins.png');

% Convert the image to binary

CoinsBW = im2bw(Coins);

% Find the boundary of the object (coin) at coordinate (27,60)

CoinBoundary = bwtraceboundary(CoinsBW, [27, 60], 'N');

% Display the original image

imshow(Coins);

hold on;

% Plot the detected boundary in red

plot(CoinBoundary(:,2), CoinBoundary(:,1), 'r', 'LineWidth', 2);

hold off;

OUTPUT:



**Region Properties**

% Read the image

I = imread('coins.png');

% Convert to binary

Ibw = im2bw(I);

% Fill holes in detected objects

Ibw = imfill(Ibw, 'holes');

% Label all connected objects

Ilabel = bwlabel(Ibw);

% Compute centroids of labeled regions

stat = regionprops(Ilabel, 'centroid');

% Display the original image

imshow(I);

hold on;

% Overlay red circles at centroids

for x = 1:numel(stat)

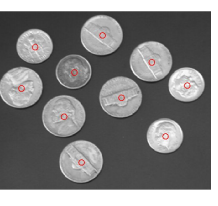
plot(stat(x).Centroid(1), stat(x).Centroid(2), 'ro');

end

hold off;

Ibw = imbinarize(rgb2gray(I));

**OUTPUT:**

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