FUZZY LOGIC - IMAGE PROCESSING.

AIM :-

The aim of implementing fuzzy logic for edge detection is to enhance the robutness and accuracy of edge detection in image by handling uncertainities in pixel intensity transctions.

PROCEDURE FOR FUZZY LOGIC EDGE DETECTION:-

Step 1 : set up the environment.

1. Open MATLAB : Ensure you have access to MATLAB with the image processing toolbox and fuzzy logic toolbox installed.

Step 2: Import and convert image to Grayscale.

1). Read the RGB range.

2). Convert to Grayscale

Step 3 : Convert image to double -precision data.

1). Convert to double.

Step 4 : obtain image gradients.

1). define gradient filters :

2). calculate gradients.

3). plot image gradients.

Step 5: Define fuzzy inference system (FIS) for edge detection.

    1). Create FIS.

    2) Add inputs.

    3). Define membership function for inputs.

    4) Add outputs.

    5) Define membership function for output

    6) plot membership functions

Step 6: Plot membership functions.

    1). add rules for FIS --

Step 7: Evaluate FIS.

    1). Evaluate edge detection.

Step 8: Plot results.

    1. Plot original Grayscale Image.

    2. Plot detection edges.

o/p:

result :-

The program was successfully executed & o/p is verified.