```
Ex: 10
                                                                                   The first of the state of the second of the 
                                                                        Date:
                                              Fuzzy logic - Image Protelling
   Aim:
To implement a fuzzy logic-based edge detection algorithm toor digital images
  Source code:
   longb = imread ('Pepperf. png');
  1 gray = orgb 2 gray (lorgh);
figure;
 image (Igray, 'Clata Mapping', Iscaled');
  Colorman ('gray');
  title ('Input Image in wayleale!);
   1 = im2double (Igray);
  GX=[-11];
hy = 6x';
 1x = Conv2Cl, Gx, Same!);
 ly=conv2Cl, Gy, (same);
                                                                                                                                                           Portanticola in Contration
figure;
 image (IX, 'CData Mapping', 'scaled');
Colormal ('gray');
 title (1/x1)
 figure;
 image (14, CData Mapping!, 'Staled');
colormap ('gray');
 title (1/1)
```

```
{ cage FIS = mamfis ('Name', 'edge Detection');
(edge FIS = addInput(edge FIS, [-11], Name', 1x);
edge FIS = add/nfut(edge FIS, [-11], 'Name', 'ly');
 5X = 0.1; Sy = 0.1;
: edge FIS = addMF (edge FIS, 'IX', 'gaullmot', DXOJ, "Name, Zer
 edge FIS = add MF (edge FIS, 'ly', 'gaustint', ESYOJ, 'Name', 'Zor);
edge 818 = add output (edge FIS, Eo 17, 'Name!, Nort');
(Wa = 0.1; Wb = 1; Wc=1;
 ba = 0; bb =0; bc =0.7;
 edge FIS = add MF (edge FIS , 'lout, It rist, I wa wb wc], 'name
 white);
 edge FIS = add MF (edge FIS, ! lout!, 4 sint, Ebalbbe ], Name
 black');
 figure;
 subplot(2,2,1);
 Plotnt (edge FIS, limput, 1);
 title(1xi);
 Subplot (2,2,2);
 Plotmf(edge FIS, linput, 2);
 title ('ly);
Subplot(2, 2, [34]);
 PlotmfledgeFIS, 'output', 1);
title ( 10 ut);
 911 = "If Ix is zoro and Iy is zoro then lout is white";
 972 = "If Ix if not zoro on by is not zoro then lout is black"
 edge FB = addRule(edge FIS, [n/ n2]);
 leval = 2000 (Sizeculs
 for i' = 1; size(1, 4)
     Leval (ii; ) = evaltis (edge FIS. [(1x(ii;:)); (ly (ii,:))]);
 and
```

figure; image (1, 'Coata Mapping', Isaled); and the state of the second state of the second coloamaf (gray); title (oniginal wraystale (mage); figure; image Cloval, 'Chata Mapping', 's caled!); Colormap (gray); title (Edge Detection Using Fuzzy Logic!);

and the property of the second of the

· Long and a second of the sec

The state of the s

Manager and the second of the

Carried and the same of the sa

The state of the s

the state of the state of

The har weller of a the

Park to see the second of the second

- the wife of the same of the same of Processis has been exercula successfuly.