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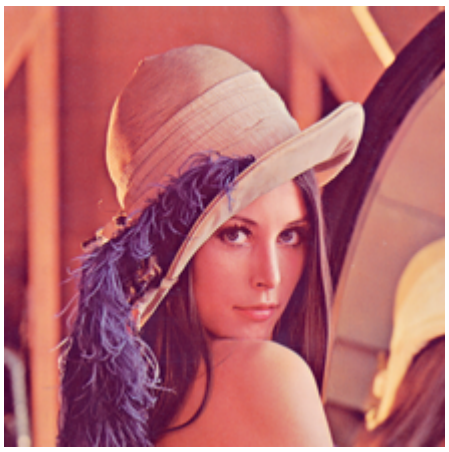
Section: E

% MATLAB code for Dilation

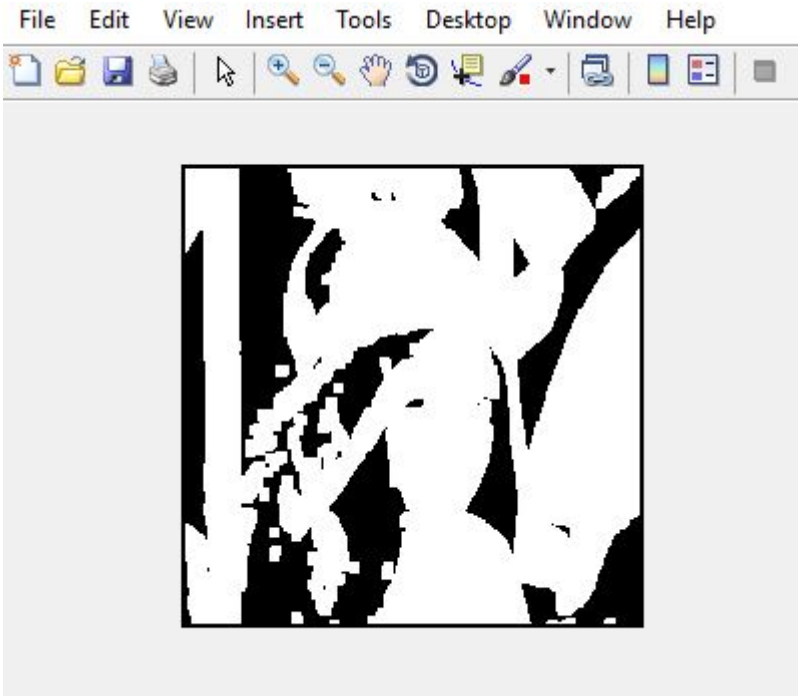
```
% read image

I=imread('lenna.png');

% convert to binary
I=im2bw(I);

% create structuring element
se=ones(5, 5);

% store number of rows in P and
% number of columns in Q.
[P, Q]=size(se);

% create a zero matrix of size I.
In=zeros(size(I, 1), size(I, 2));

for i=ceil(P/2):size(I, 1)-floor(P/2)
    for j=ceil(Q/2):size(I, 2)-floor(Q/2)

        % take all the neighborhoods.
        on=I(i-floor(P/2):i+floor(P/2), j-floor(Q/2):j+floor(Q/2));

        % take logical se
        nh=on(logical(se));
```

```
        % compare and take minimum value of the neighbor
        % and set the pixel value to that minimum value.
        In(i, j)=max(nh(:));
    end
end

imshow(In);
```

Original Image:



Output image:



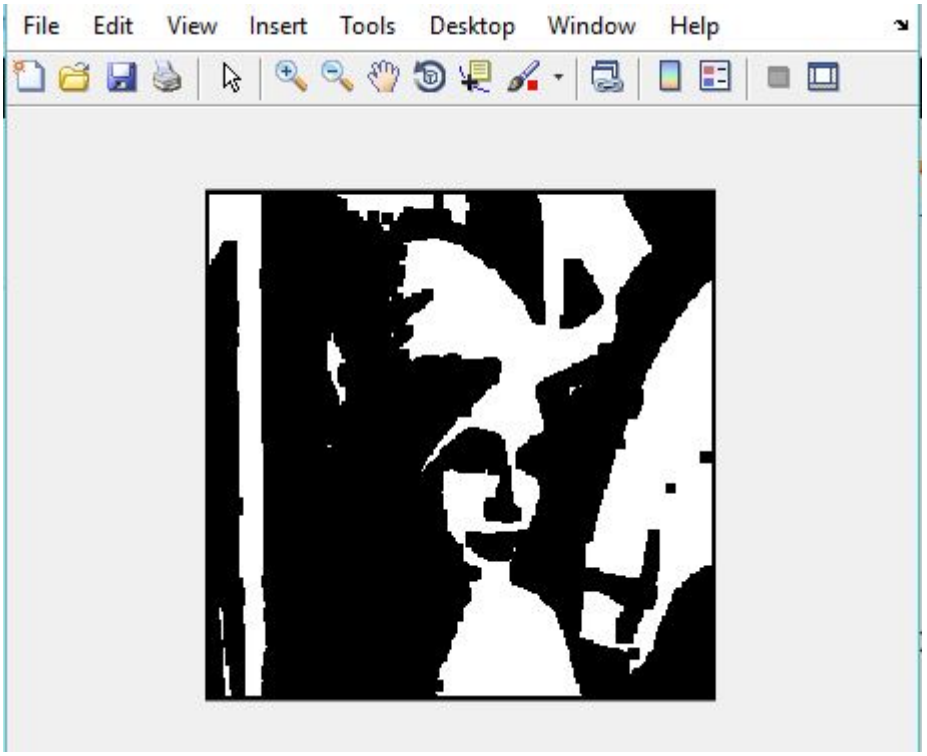
% Matlab code for Erosion

```
% read image
I=imread('lenna.png');

% convert to binary
I=im2bw(I);

% create structuring element
se=ones(5, 5);

% store number of rows
% in P and number of columns in Q.
[P, Q]=size(se);

% create a zero matrix of size I.
In=zeros(size(I, 1), size(I, 2));

for i=ceil(P/2):size(I, 1)-floor(P/2)
    for j=ceil(Q/2):size(I, 2)-floor(Q/2)
```

```
        % take all the neighbourhoods.
        on=I(i-floor(P/2):i+floor(P/2), j-floor(Q/2):j+floor(Q/2));

        % take logical se
        nh=on(logical(se));

        % compare and take minimum value of the neighbor
        % and set the pixel value to that minimum value.
        In(i, j)=min(nh(:));
    end
end

imshow(In);
```

Original Image:

Output image: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