User defined dilation function:mydilation(image/matrix,SE)

```
function ff = mydilation(A,B)
    m=floor(size(B,1)/2);
n=floor(size(B,2)/2);
%Pad array on all the sides
C=padarray(A,[m n]);
ff=false(size(A));
for i=1:size(C,1)-(2*m)
    for j=1:size(C,2)-(2*n)
        Temp=C(i:i+(2*m),j:j+(2*n));
        ff(i,j)=max(max(Temp&B));
    end
end
end
```

I have used my defined dilation function in below program

Input: 13 x 17 matrix

COMMAND WINDOW

```
>> a_1
>> m1

m1 =

     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     1     1     1     1     1     1     1     0     0     0     0     0
     0     0     0     0     0     1     1     1     1     1     1     1     0     0     0     0     0
     0     0     0     0     0     1     1     1     1     1     1     1     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0

>>
```

1(a):

```
m1 = [1 1 1 1 1 1 1; 1 1 1 1 1 1 1; 1 1 1 1 1 1 1];  % input matrix 3 x 7 with all elements 1

m1 = padarray(m1,[5 5],0,'both'); %padding 0 on both side of matrix m1 and making it 13 x 17


b = [0 0 0 0 1;
     0 0 0 1 0;
     0 0 1 0 0;
     0 1 0 0 0;
     1 0 0 0 0]; %5x5 structure element


m2 = mydilation(m1,b);  %used my defined function written above
```

OUTPUT:

COMMAND WINDOW

```
m2 =

  13x17 logical array

   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   1   1   1   1   1   1   1   0   0   0
   0   0   0   0   0   0   1   1   1   1   1   1   1   1   0   0   0
   0   0   0   0   0   1   1   1   1   1   1   1   1   1   0   0   0
   0   0   0   0   1   1   1   1   1   1   1   1   1   0   0   0   0
   0   0   0   1   1   1   1   1   1   1   1   1   0   0   0   0   0
   0   0   0   1   1   1   1   1   1   1   1   0   0   0   0   0   0
   0   0   0   1   1   1   1   1   1   1   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0

>>
```