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Riddhish Bhaodia and Alankar Kotwal : Assignment 2 -- Question 2

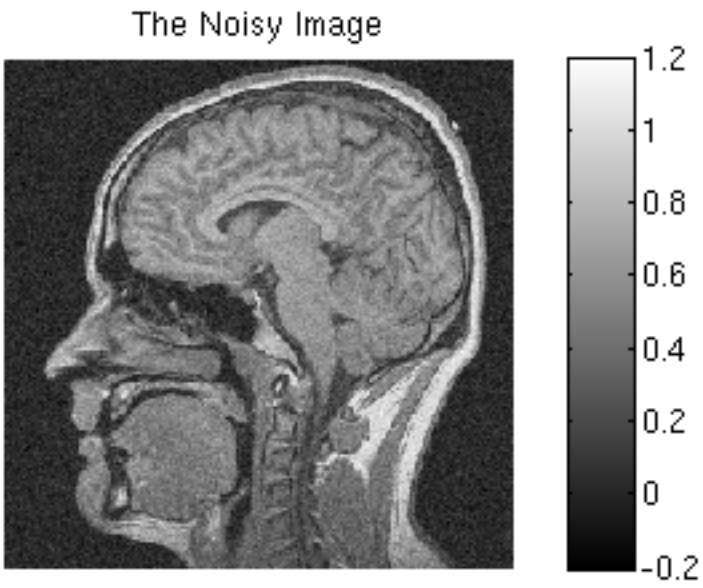
```
tic;
input = load('assignmentImageDenoisingBrainNoisy.mat');

noisemodel = partA(input.imageNoisy);
disp(noisemodel);
```

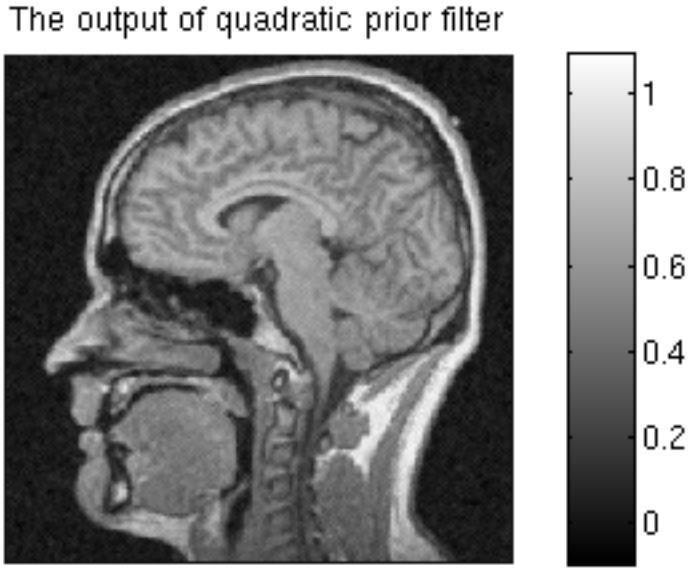
```
           0.0611 + 0.0587i
```

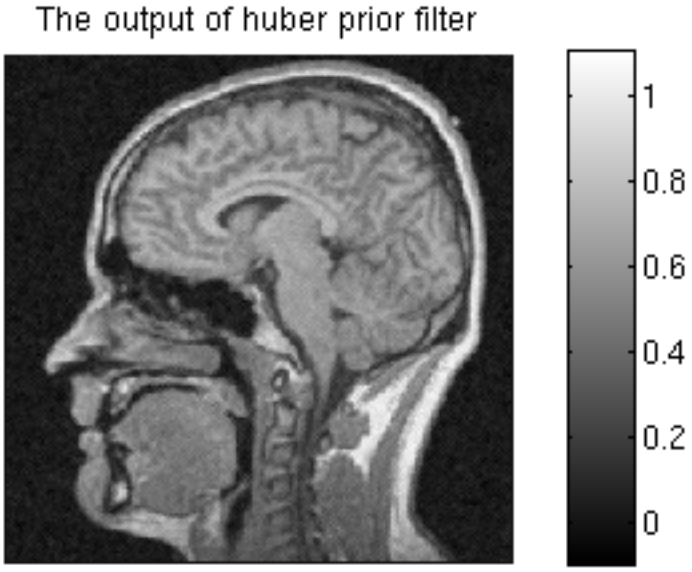
Part B

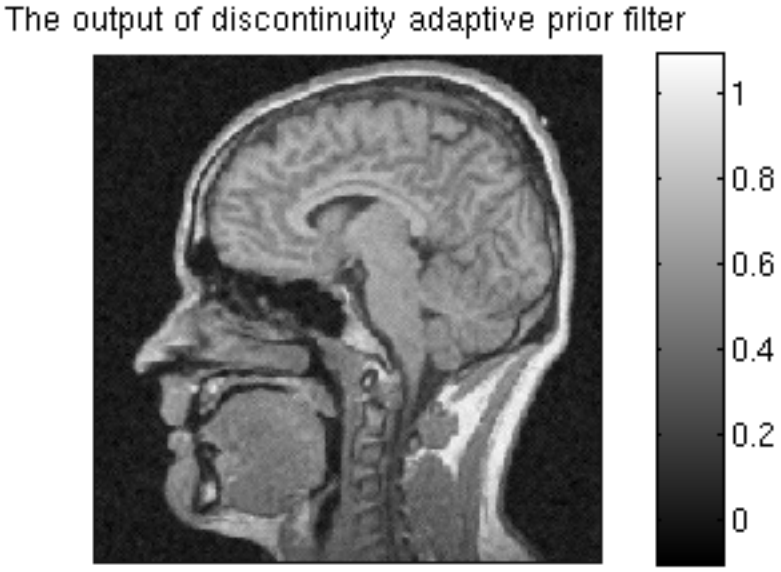
```
[noisy,denoisedquad,denoisedhuber,denoisedadap] = partB(input);

figure;
imshow(noisy,[]);
title('The Noisy Image');
colorbar;
colormap(gray(256)); axis image; axis off

figure;
imshow(denoisedquad,[]);
title('The output of quadratic prior filter');
colorbar;
colormap(gray(256)); axis image; axis off

figure;
imshow(denoisedhuber,[]);
title('The output of huber prior filter');
colorbar;
colormap(gray(256)); axis image; axis off

figure;
imshow(denoisedadap,[]);
title('The output of discontinuity adaptive prior filter');
colorbar;
colormap(gray(256)); axis image; axis off
```

```
        Warning: Displaying real part of complex input.
```


The Noisy Image
1.2
1
0.8
0.6
0.4
0.2
0
-0.2


The output of quadratic prior filter
1
0.8
0.6
0.4
0.2
0

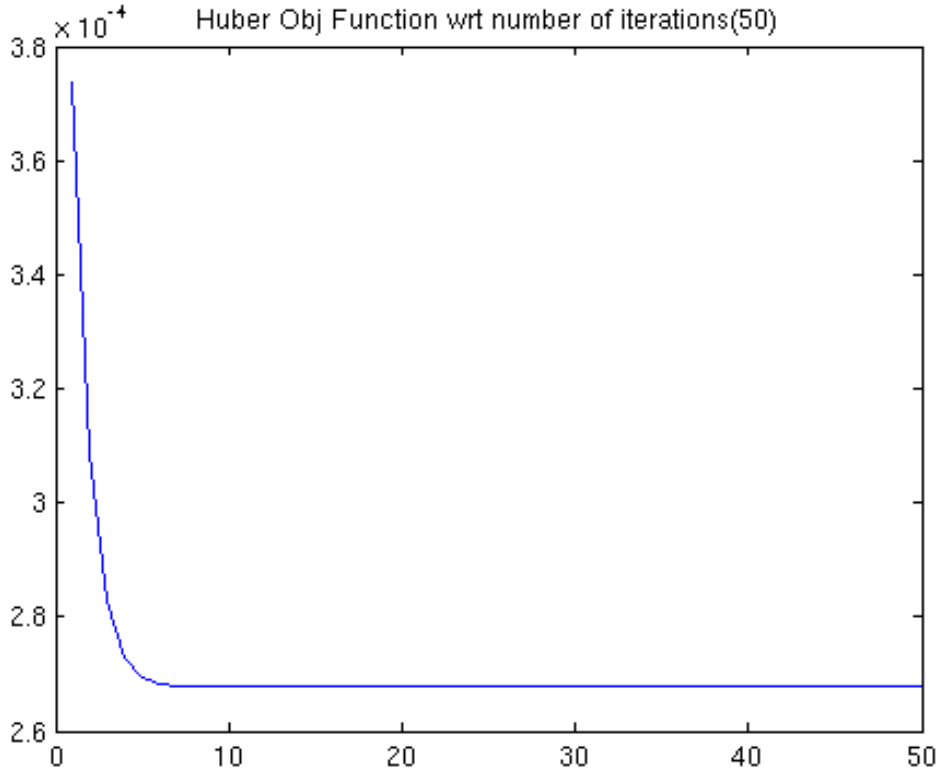

The output of huber prior filter
1
0.8
0.6
0.4
0.2
0

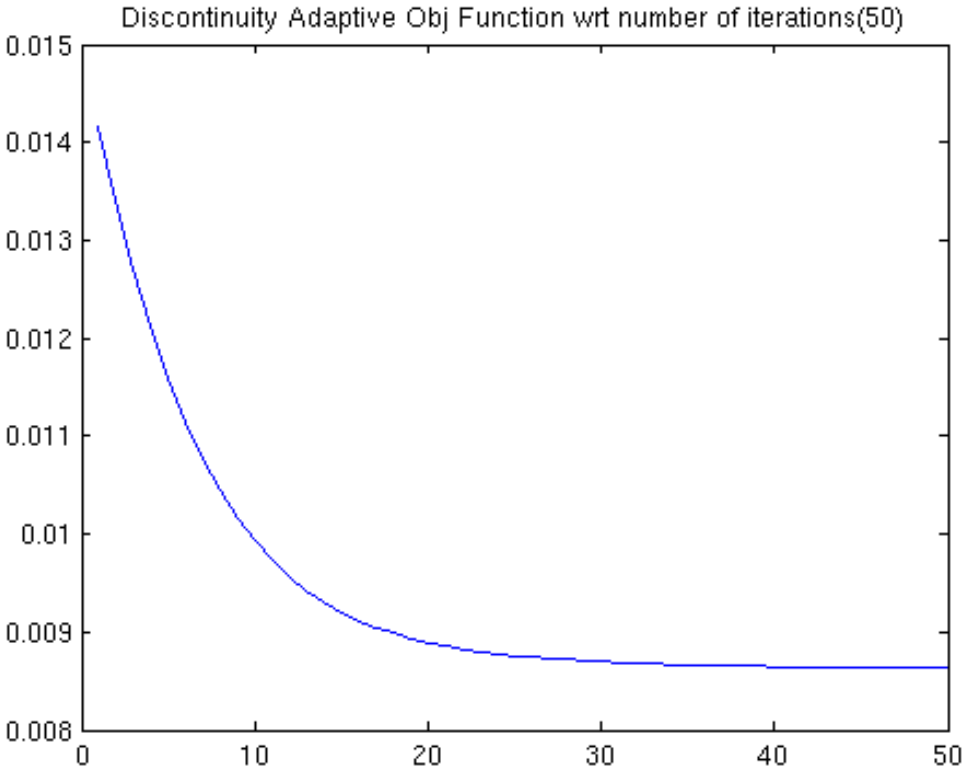


Part C

```
dummy = partC(input);
toc;
```

```
        Elapsed time is 114.382701 seconds.
```


Huber Obj Function wrt number of iterations(50)
x 10^-4
3.8
3.6
3.4
3.2
3
2.8
2.6
0
10
20
30
40
50


Discontinuity Adaptive Obj Function wrt number of iterations(50)
0.015
0.014
0.013
0.012
0.011
0.01
0.009
0.008
0
10
20
30
40
50

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