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```
clc
clear all
close all
```

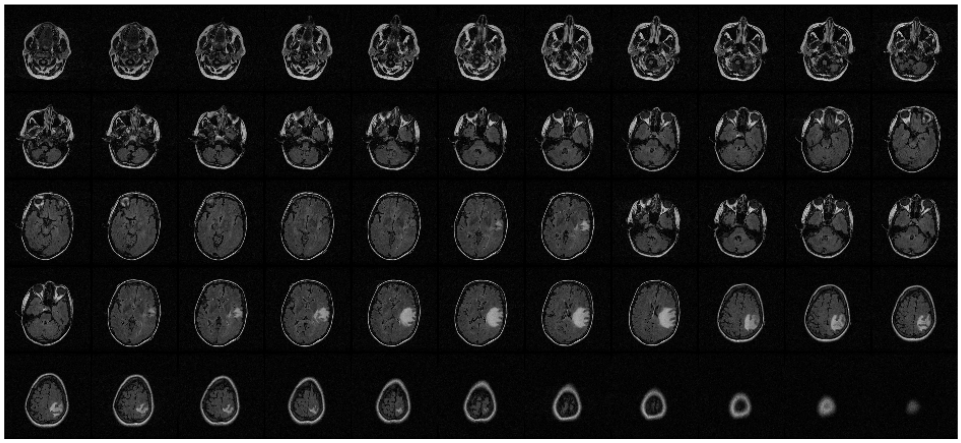
Loading MRI slices

```
FileFolder=fullfile(pwd,'Project');
files=dir(fullfile(FileFolder,'*.dcm'));
fileNames={files.name};
mri=zeros(256,256,length(files));
```

Creating Montage view

```
for i=1: length(files)
    mri(:,:,i)=dicomread(fileNames{i});
end
new=reshape(mri,[256 256 1 length(files)]);
montage(new,'DisplayRange',[],'Size', [5 11])
```

Warning: Image is too big to fit on screen; displaying at 33%



Thresholding

```
for i=1:length(files)

img =mri(:,:,i);
img=img.*(img>150);
% Finding the starting seed
%imagesc(img),colormap(gray)
%[x,y]=ginput(1);
%x=round(x);y=round(y);
x=140;y=146;
seedmask=seed(x,y,img,50,340);
se=strel('square',2);
seedmask=imdilate(seedmask,se);
seg_img(:,:,i)=img.*(seedmask>1);
```

Tumour segmentation

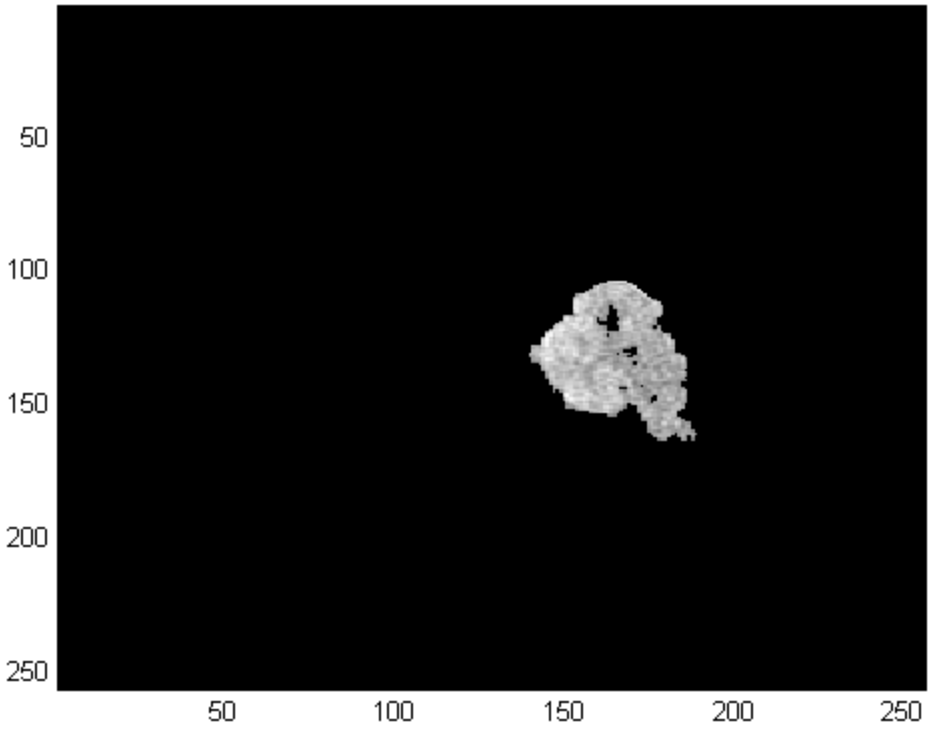
Fingding the seed for tumour

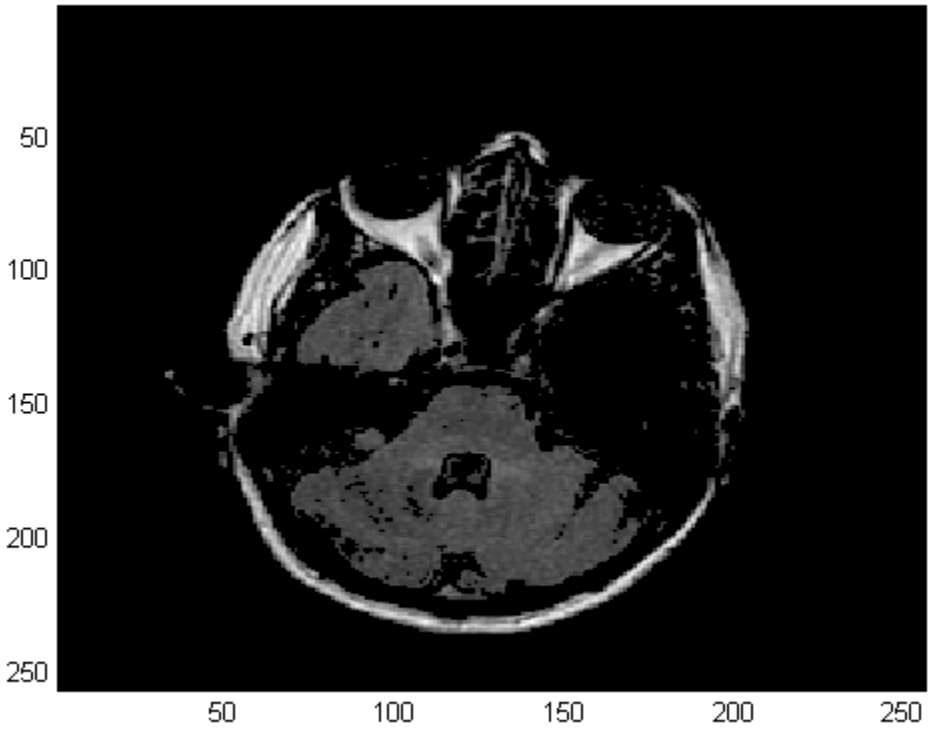
```
%imagesc(seg_img),colormap(gray)
%[x,y]=ginput(1);
%x=round(x);y=round(y);
x=174;y=153;
img2=seg_img(:,:,i);
tumourmask=seed(x,y,img2,100,150);
se=strel('square',2);
tumourmask=imopen(tumourmask,se);
tumour_img(:,:,i)=img.*(tumourmask>1);

end
```

Displaying Segmented Image and Tumor

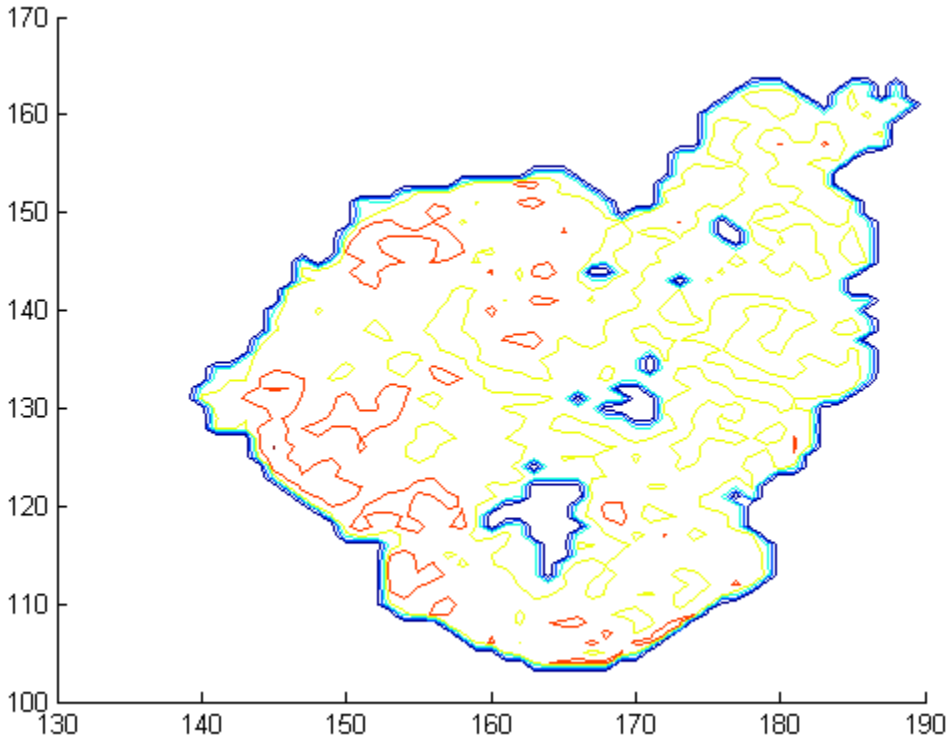
```
figure
imagesc(seg_img(:,:,32)),colormap(gray)
figure
imagesc(tumour_img(:,:,32)),colormap(gray)
```


50
100
150
200
250
50
100
150
200
250


50
100
150
200
250
50
100
150
200
250

Contour Slice

```
figure
contourslice(seg_img,[],[],32)
```



3D Isosurface rendering

```
figure
colormap(gray)
Ds = smooth3(seg_img);
hiso = patch(isosurface(Ds,5),'FaceColor','r','EdgeColor','none');
isonormals(Ds,hiso)
hcap = patch(isocaps(Ds,10),'FaceColor','interp','EdgeColor','none');
view(35,30)
axis tight
daspect([1,1,.4])
lightangle(45,30);
lighting gouraud
hcap.AmbientStrength = 0.6;
hiso.SpecularColorReflectance = 0;
hiso.SpecularExponent = 50;
```

```
Warning: Struct field assignment overwrites a value with class "double". S
MATLAB R14SP2 Release Notes, Assigning Nonstructure Variables As Structure
Displays Warning, for details.
```

```
Warning: Struct field assignment overwrites a value with class "double". S

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```
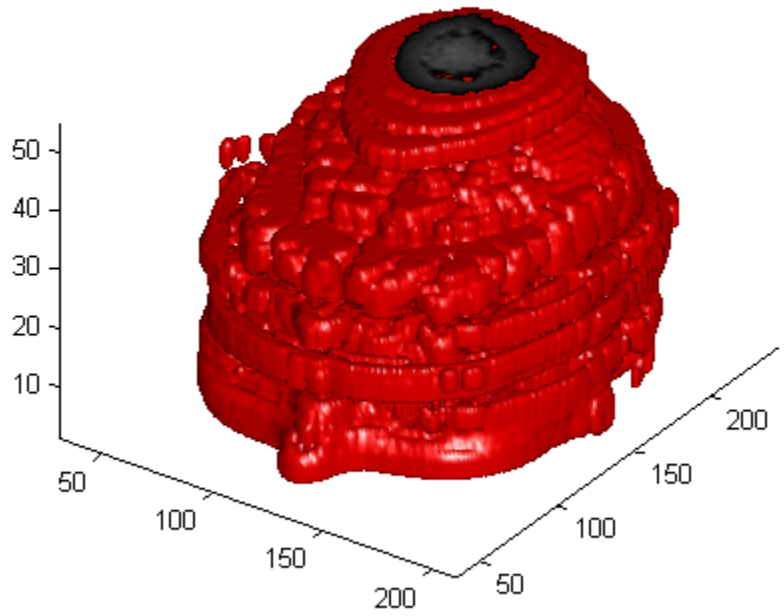
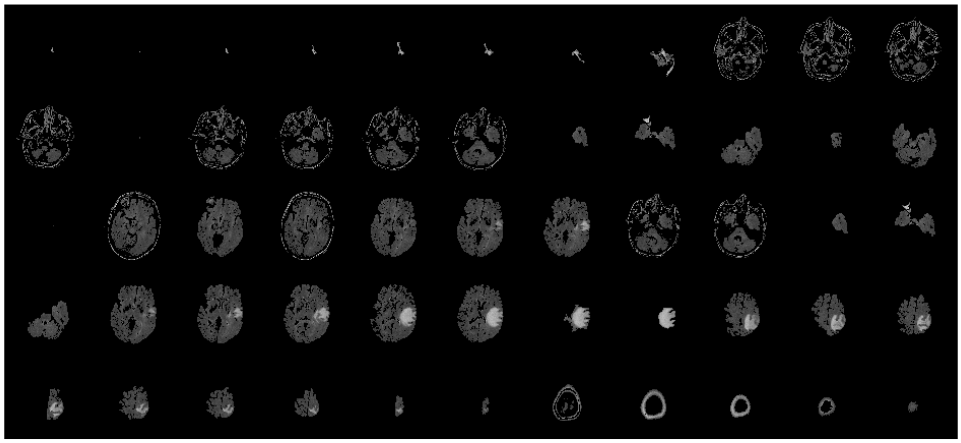



Montage of the segmented brain image

```
figure
new_seg=reshape(seg_img,[256 256 1 length(files)]);
montage(new_seg,'DisplayRange',[],'Size', [5 11])
```

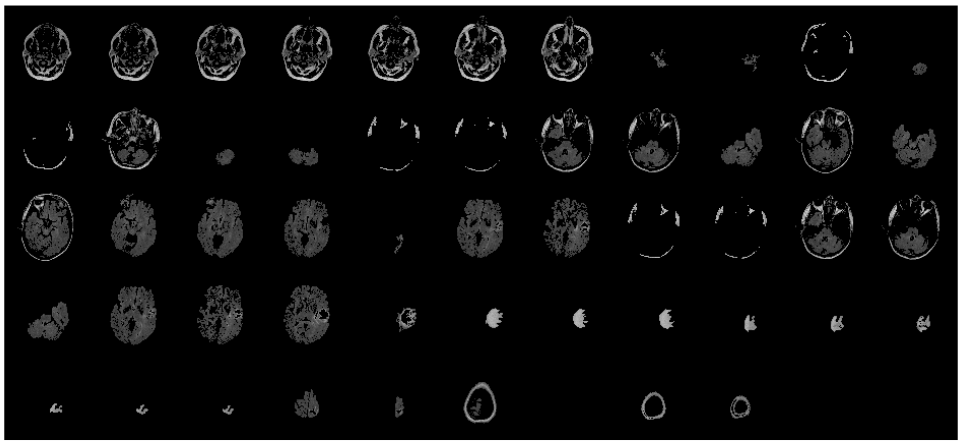
```
Warning: Image is too big to fit on screen; displaying at 33%
```



Montage of the tumor

```
figure
new_tum=reshape(tumour_img,[256 256 1 length(files)]);
montage(new_tum,'DisplayRange',[],'Size', [5 11])
```

```
Warning: Image is too big to fit on screen; displaying at 33%
```



Published with MATLAB® R2014a