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```
clc
clear all
close all
```

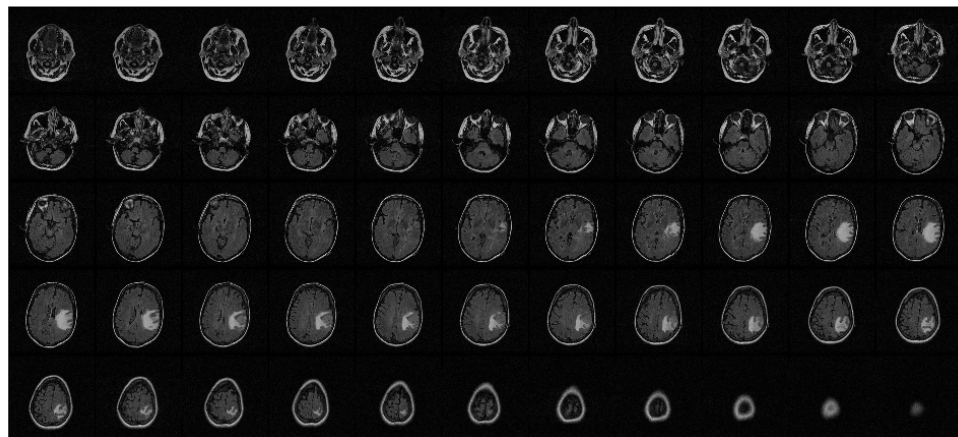
## Loading MRI slices

```
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

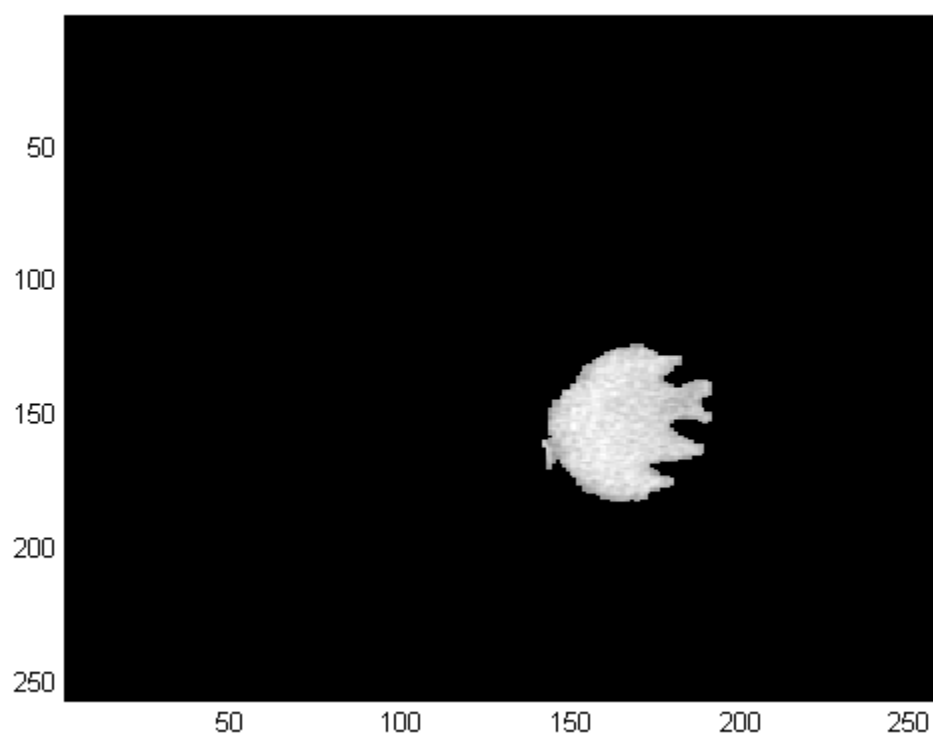
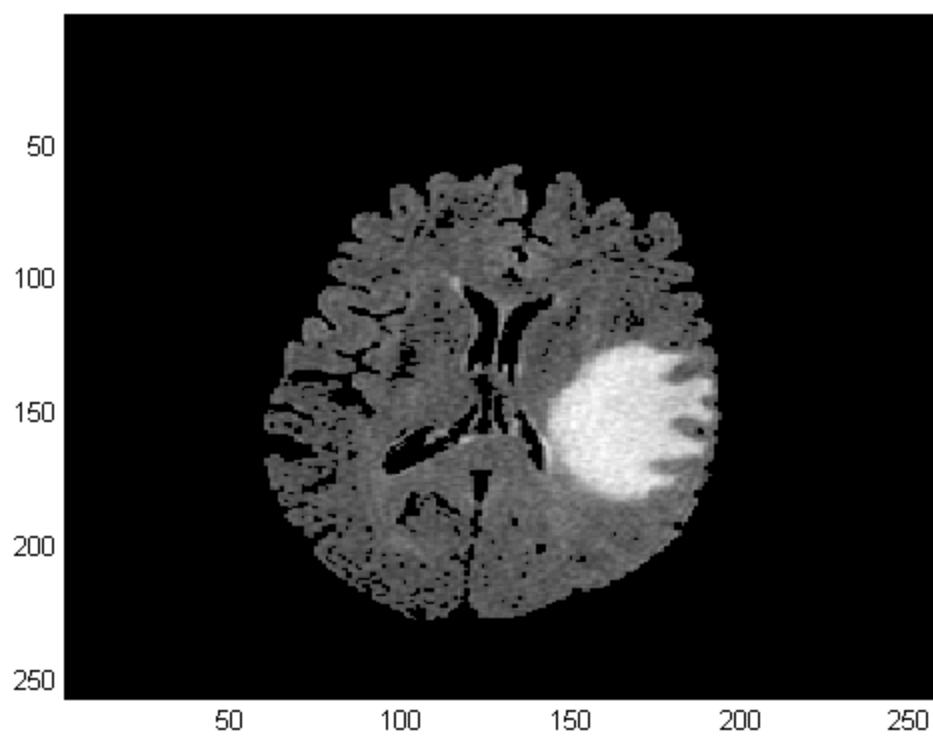
Finding the seed for tumour

```
%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

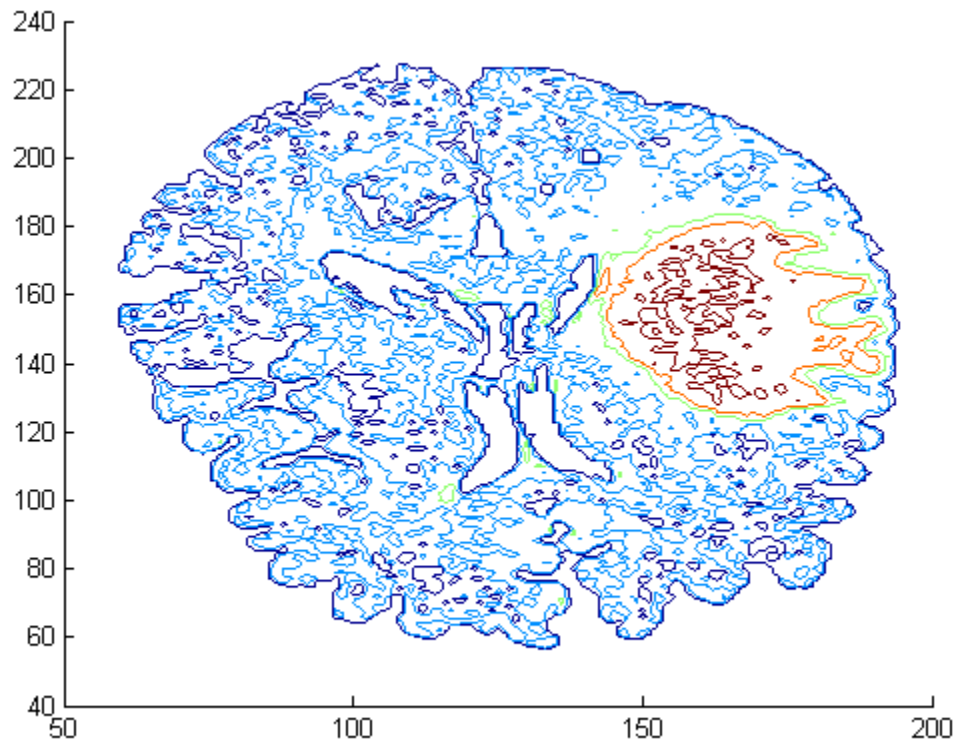
```
figure
imagesc(seg_img(:,:,32)),colormap(gray)
figure
imagesc(tumour_img(:,:,32)),colormap(gray)
```



---

## Contour Slice

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



## 3D Isosurface rendering

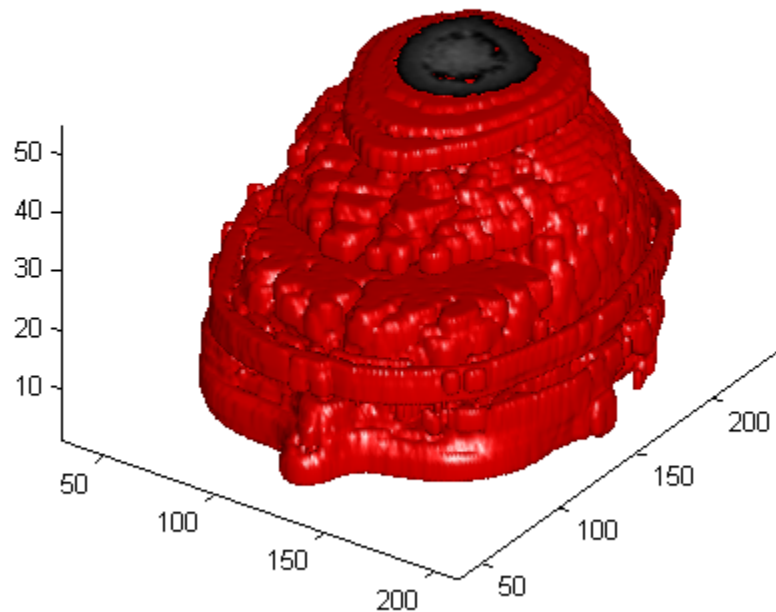
```
figure
colormap(gray)
Ds = smooth3(seg_img);
hiso = patch(isosurface(Ds,5), 'FaceColor', 'r', 'EdgeColor', 'none');
isonormals(Ds,hiso)
hcap = patch(isocaps(Ds,10), 'FaceColor', 'interp', 'EdgeColor', 'none');
view(35,30)
axis tight
daspect([1,1,.4])
lightangle(45,30);
lighting gouraud
hcap.AmbientStrength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

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

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

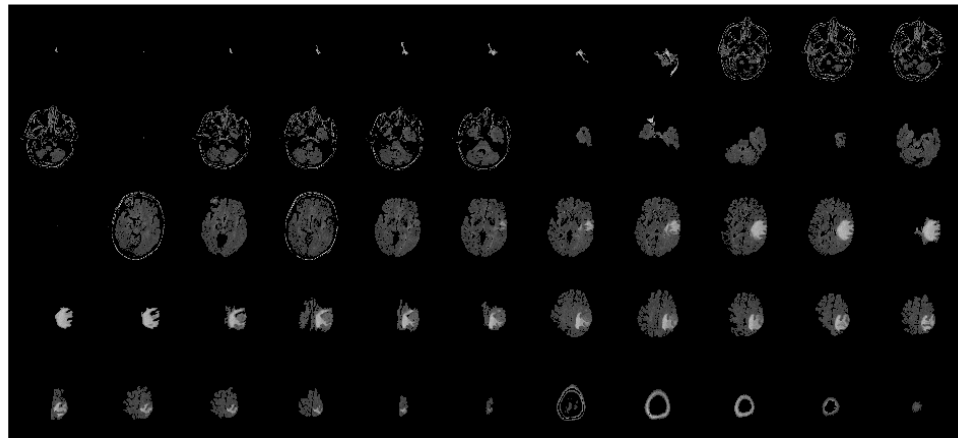
*MATLAB R14SP2 Release Notes, Assigning Nonstructure Variables As Structure  
Displays Warning, for details.*



## Montage of the segmented brain image

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

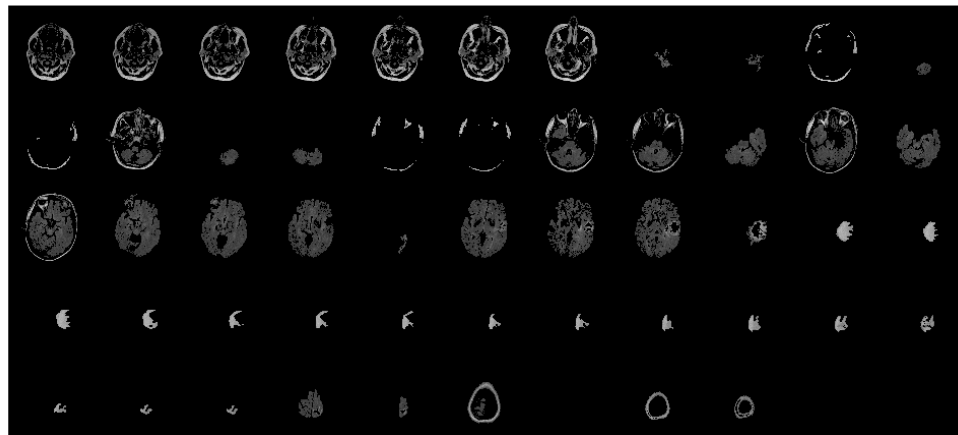
*Warning: Image is too big to fit on screen; displaying at 33%*



## 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%*



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