

Review for final

Thursday May 7, 10-noon

Covers all of semester

Office Hours noon-1pm

This Thursday

Next Monday

Lecture 1 – Neuron firing

Lecture 2 – Weight changes/weight patterns

Lecture 3 – Divisions in brain, organizing principles

Lecture 4 – Information encoding

Lecture 5 – Motion

Lecture 6 – Memory (binding, dynamics)

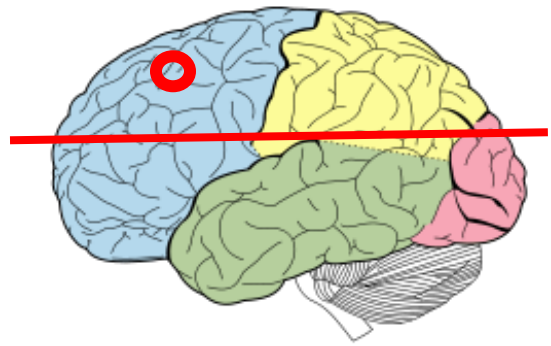
Lecture 7 – Perception (hear, see)

Matlab – multi-dim indices, loops, plots, functions

Holding information in the brain

Plain anatomy – 3 dimension

```
size(BrainAnatomy) <- [90, 90, 30]
```



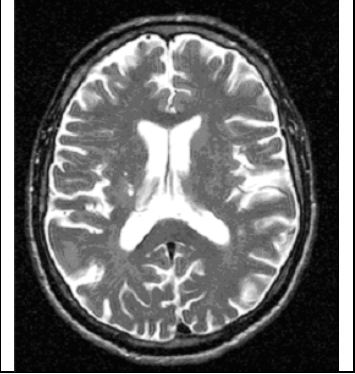
```
BrainAnatomy(10,80,25 )
```

X = 10 – near-front of brain –ant to post

Y = 80 – near right side of brain –left to
right

Z = 25 – near top of brain –vent to dors

How do I plot a slice from the plane shown above?



??? BrainAnatomy ???

```
imagesc(squeeze(BrainAnatomy(:, :, 20)))
```

All indices in x and y directions

Selected location in z (up-down) direction

```
squeeze(mat)
```

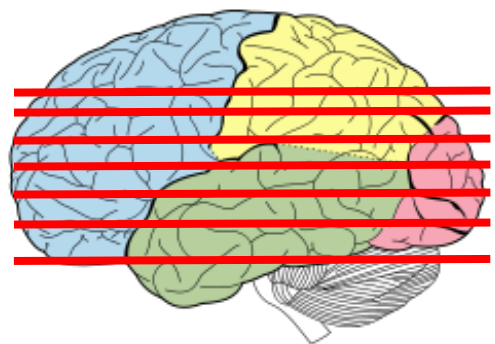
```
if size(mat) == [90,90,1]
```

```
size(squeeze(mat)) = [90,90]
```

squeeze eliminates dimension with 1 entry

One slice:

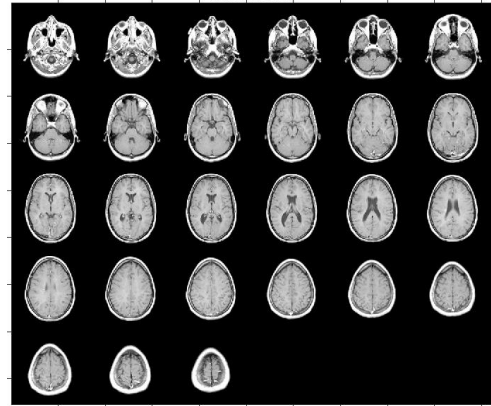
```
imagesc(squeeze(BrainAnatomy(:, :, 20)))
```



```

subplot(5,6,1),
imagec(BrAn(:, :, 1))
subplot(5,6,2),
imagec(BrAn(:, :, 2))
subplot(5,6,3),
imagec(BrAn(:, :, 3))
subplot(?, ?, 4),
imagec(BrAn(:, :, 4))
subplot(?, ?, 5),
imagec(BrAn(:, :, 5))
...

```



5 row, 6 col

```
size(BrainAnatomy) <- [90, 90, 30]
```

How can we change this code to a loop?

```

for LoopInstruct, i=1:30,
    part1    subplot(5,6,i),
    part2    im..(squ..(Br))
    imagec(squeeze(BrainAnatomy(:, :, i)));
end;

```

I want to make function `slicePlot` that takes in a 3-D brain matrix and does a plot of all it's slices

Subplot with `r` rows, `c` cols,
BrainMat has $r*c$ slices in `z` dimension

To use `slicePlot`, just type

```
slicePlot (BrainMat, r, c)
```

into matlab

```
slicePlot (BrainAnatomy, 5, 6)
```

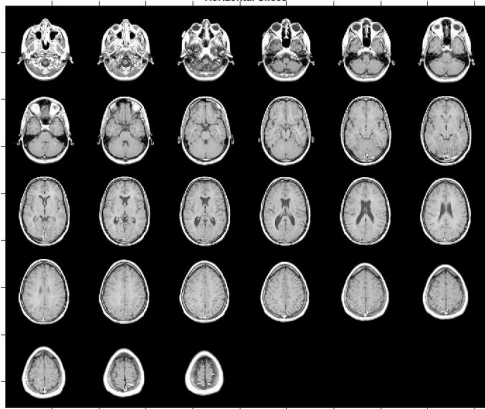
```
function out=nameFunc (in)
```

```
commands-to-run
```

```

function slicePlot(BrainIn,r,c)
for i=1:30 r*c ,
    subplot(5 r,6 c ,i) ,
imagesc (squeeze (BrainAnatomy (:, :,i))) ;
end;

```



```

for i=1:30,
    subplot(5,6,i) ,
imagesc (squeeze (BrainAnatomy (:, :,i))) ;
end;

```