



# MATLAB Review

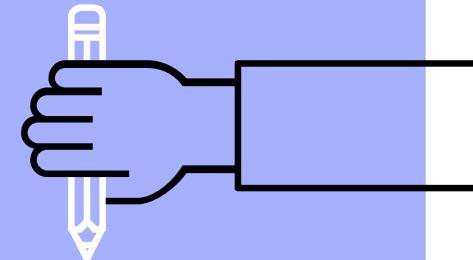
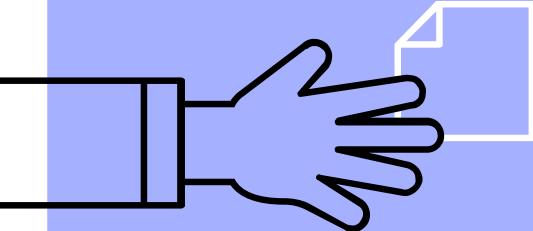
## Common Mistake & Concept Clarification

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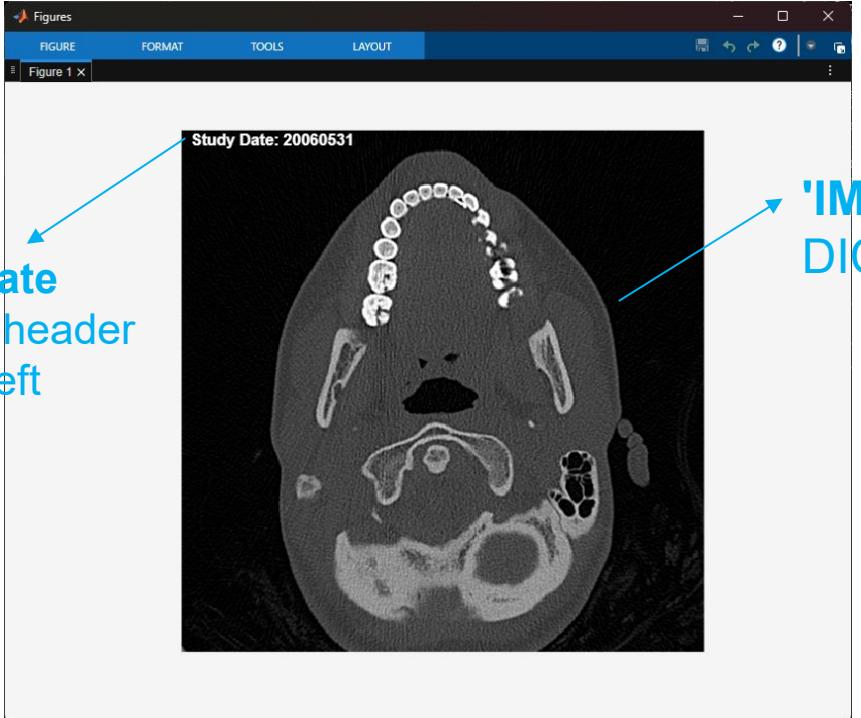
# Weekly Assignment



# Week 2 Assignment



- Create a new script file (**hw02.m**) to display the figure.
- Please include your prompt to Copilot in the m-file (using **%**).



'IM-0001-0081.dcm'  
DICOM image

StudyDate  
DICOM header  
(upper left  
corner)

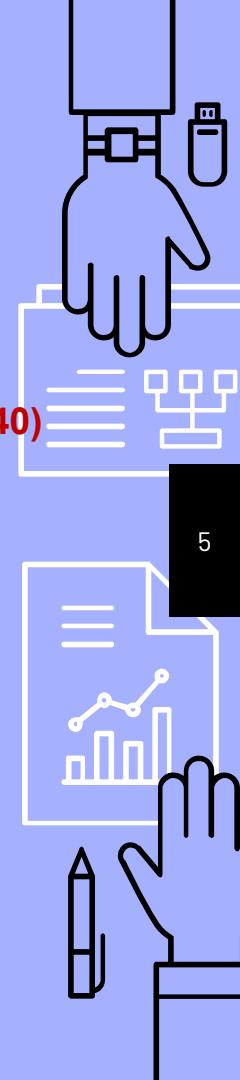
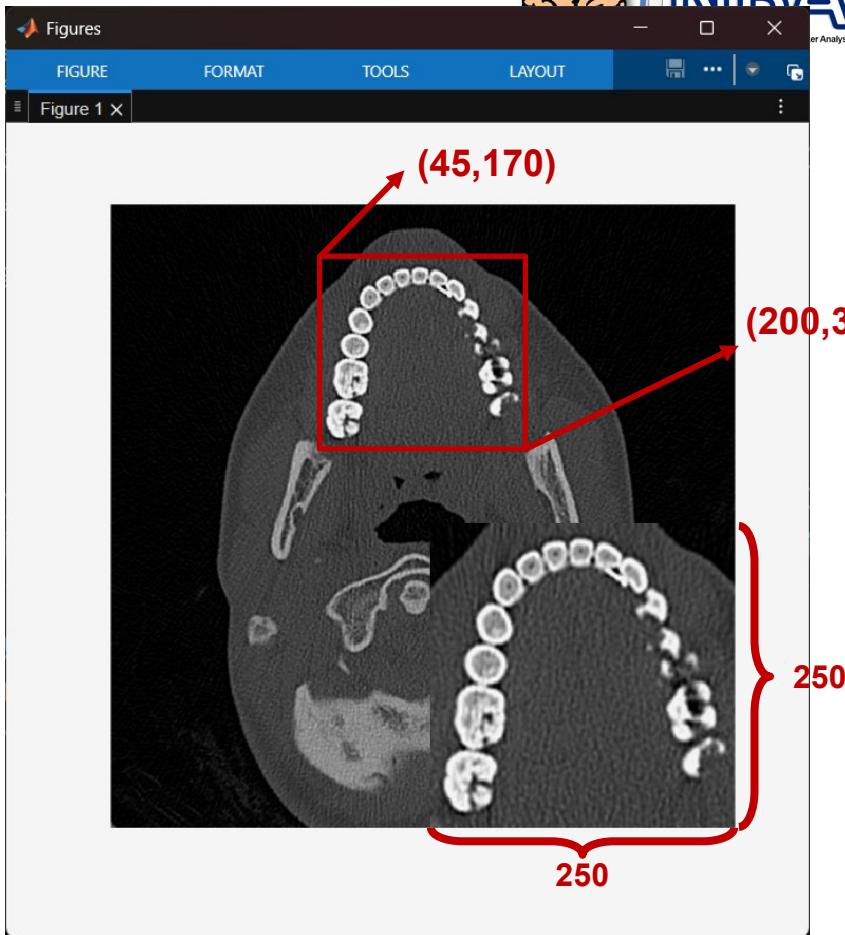
You can complete the weekly assignment with your Study Group right after class (before 18:00).  
The E3 upload is due by next Wednesday at noon!



# Week 3 ★★ Assignment

Create a new script file (**hw03.m**)

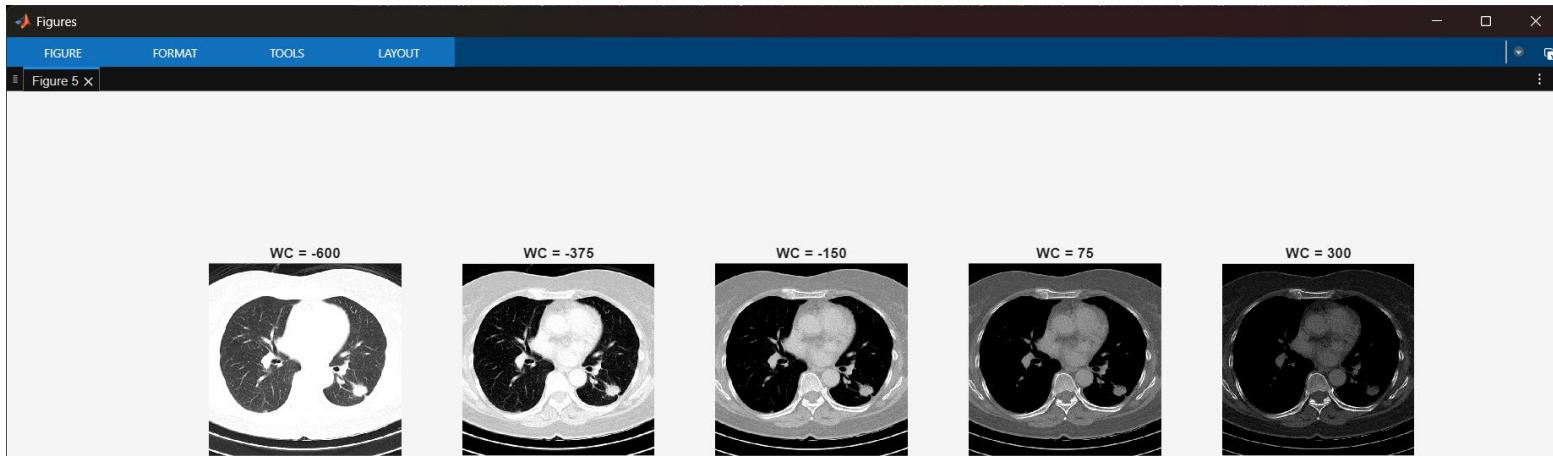
- ▶ Read...  
**'IM-0001-0081.dcm'**
- ▶ Extract...
- ▶ Resize...
- ▶ Replace...
- ▶ Display...



# Week 5 Assignment

Modify from **ImageEx05.m**

- ▶ Display images with five different window centers and a window width of 1000.
- ▶ **subplot** Create axes in tiled positions.



# Week 6 Assignment



- ▶ Identify female subjects that match **BOTH** conditions:
  - Age > 70
  - IDH Status = 'WT'

Modify from **ExcelEx06.m**

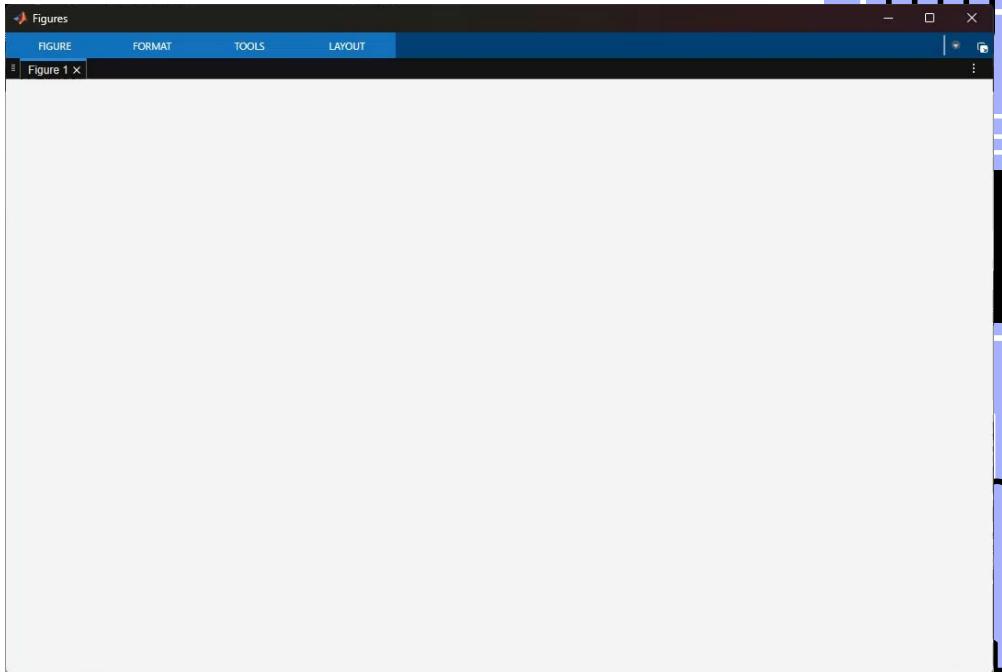
	1	2	3	4	5	6	7	8	9	10
1	'TCGA-02-0037'	'glioblastoma'	'G4'	74	'female'	3.6140	1	'WT'	'non-codel'	'Unmethylat...
2	'TCGA-06-0119'	'glioblastoma'	'G4'	81	'female'	2.6941	1	'WT'	'non-codel'	'Methylated'
3	'TCGA-06-0122'	'glioblastoma'	'G4'	84	'female'	6.1439	1	'WT'	'non-codel'	'Unmethylat...
4	'TCGA-06-0237'	'glioblastoma'	'G4'	75	'female'	13.6348	1	'WT'	'non-codel'	'NA'
5	'TCGA-06-0649'	'glioblastoma'	'G4'	73	'female'	2.1027	1	'WT'	'non-codel'	'NA'
6	'TCGA-06-5412'	'glioblastoma'	'G4'	78	'female'	4.5340	1	'WT'	'non-codel'	'Methylated'
7	'TCGA-12-1598'	'glioblastoma'	'G4'	75	'female'	15.6389	1	'WT'	'non-codel'	'Methylated'
8	'TCGA-19-2631'	'glioblastoma'	'G4'	74	'female'	6.9981	1	'WT'	'non-codel'	'Methylated'
9	'TCGA-19-5951'	'glioblastoma'	'G4'	76	'female'	8.0166	1	'WT'	'non-codel'	'Unmethylat...
10	'TCGA-19-5954'	'glioblastoma'	'G4'	72	'female'	7.9509	0	'WT'	'non-codel'	'Methylated'
11	'TCGA-27-2526'	'glioblastoma'	'G4'	79	'female'	2.8584	1	'WT'	'non-codel'	'Unmethylat...
12	'TCGA-76-4928'	'glioblastoma'	'G4'	85	'female'	3.0884	1	'WT'	'non-codel'	'Methylated'



# Week 7 Assignment



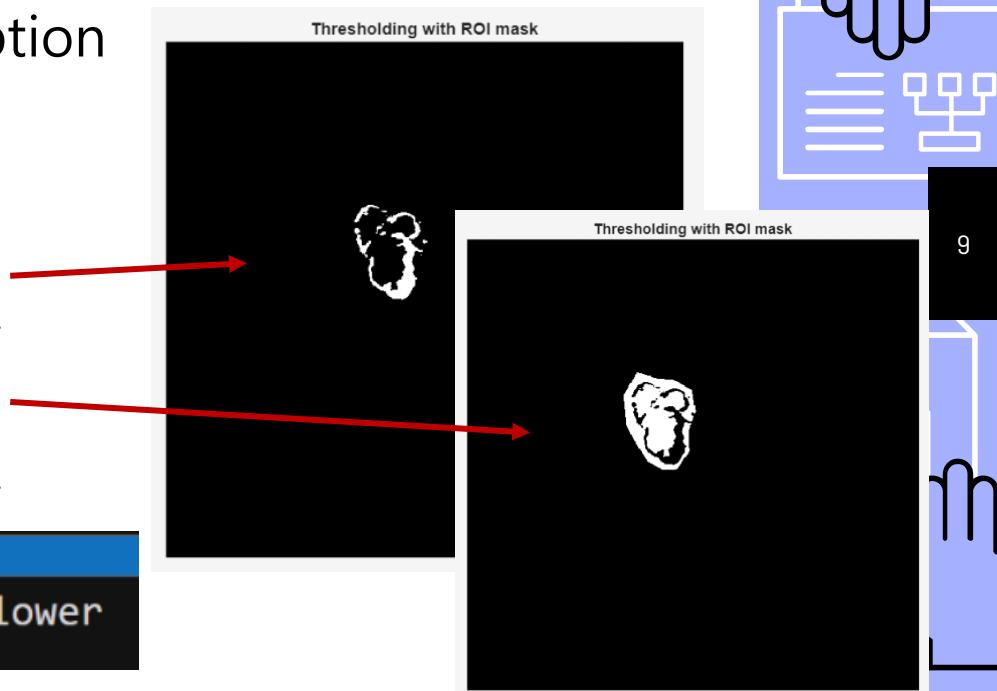
- ▶ Rotate `img` with the following condition.
  - 0:10:180 degree
- ▶ Display MIP image along column direction for each rotation step.
- Modify from **ImageEx07\_2.m**



# Week 8 Assignment



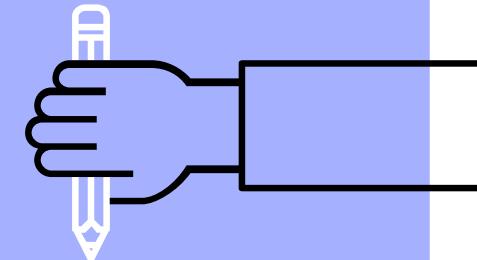
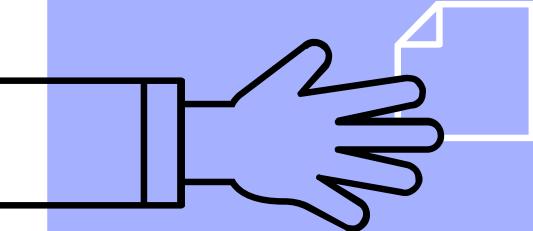
- ▶ Ask for user's input with an option of either 'higher' or 'lower'.
- ▶ If user's input is 'higher',  
find region within  $ROI > 1700$ .
- ▶ If user's input is 'lower',  
find region within  $ROI < 1700$ .



Command Window

```
Please enter "higher" or "lower": lower
```

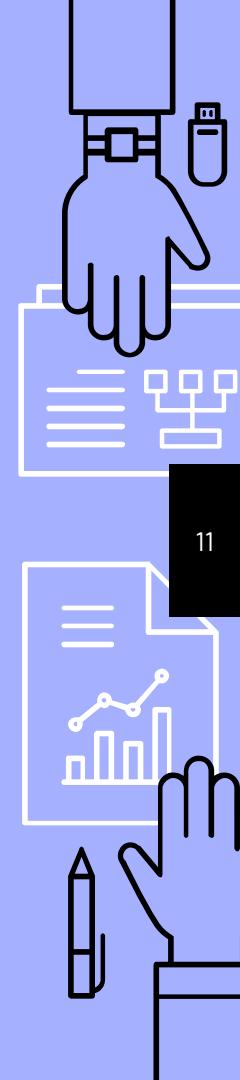
# Common Mistake & Concept Clarification



# Week 2: Basic Language Usage

- ▶ Not sure about the data format
  - **double** vs. **character/string**
- ▶ Not sure about the data format conversion
  - **num2str** and **str2num**

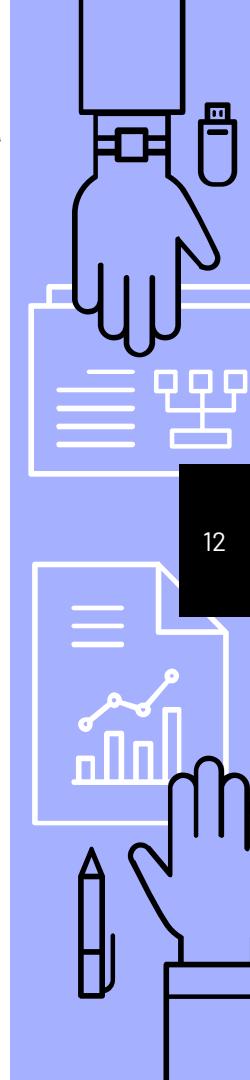
```
a=110;  
title('Slice #a')  
title(['Slice #' a])  
title(['Slice #' num2str(a)])
```



# Week 4: Matrix Operation

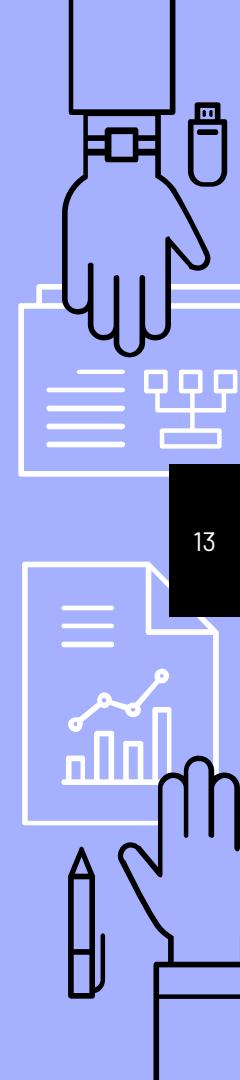
- ▶ Not sure about **row** and **column**
- ▶ Not sure about the meaning of
  - `ind=find(A==6)`
- ▶ Don't know the use of "&" to concatenate two conditions.

A	c1	c2	c3	c4	c5
r1	12	2	33	4	46
r2	3	7	4	6	5
r3	4	6	64	6	84
r4	6	5	6	7	37
r5	7	4	45	23	78



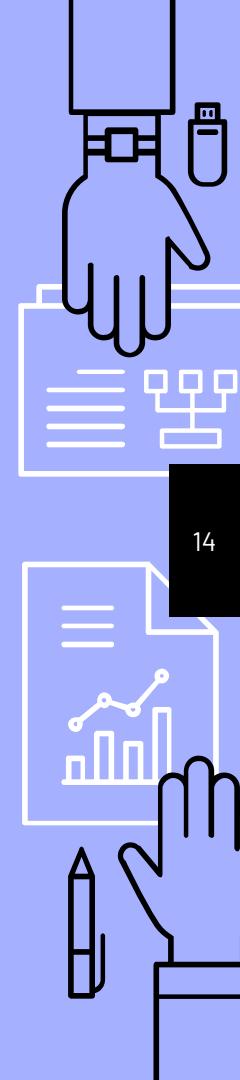
# Week 5: Structure Array

- ▶ Not sure how to adjust image contrast
  - `imshow(img, [])`
  - `imshow(img, [0 100])`
- ▶ Don't know how to get the value from a specific field of the structure array
  - `roi.Position`

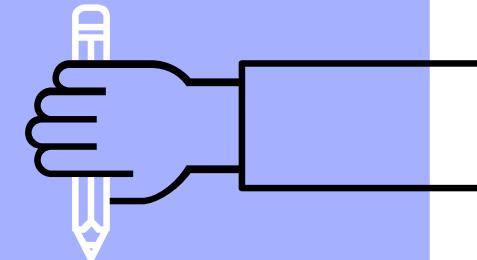
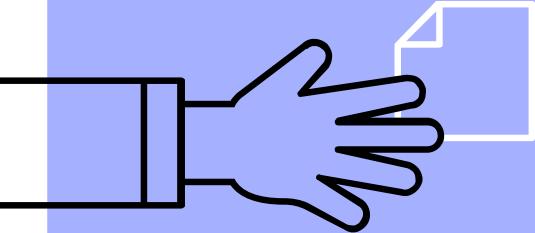


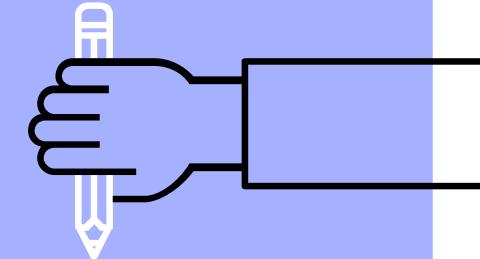
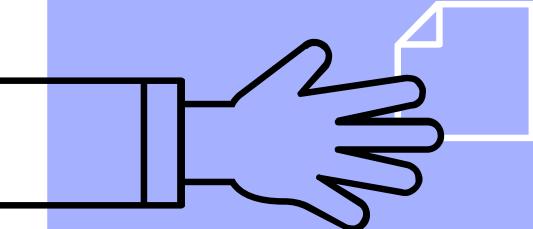
# Week 7: for-loop

- ▶ Not sure about the meaning of...
  - dir
  - dirinfo(i).name
  - Img(:,:,i)=dicomread...
- ▶ Not sure about the following functions
  - squeeze
  - flipud
  - fliplr
  - transpose (')



# Mock Midterm Test





# THE END

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