

## B2 • Discussion #3 • 2021-02-12

### Announcements

- Don't forget to do the reading! Lecture videos + questions are purely supplemental
- Use + look at the Discussion Forum for questions
- Class: attendance points are only given if students are fully engaged in breakout rooms
  - audio + video off = 0 points
- Class: please post creative problems on the Discussion chat on BB
- Quiz #2 at 10:40 today
  - we're giving 5 extra minutes for this one only!
- 3-day weekend (Monday is a holiday)
  - Monday schedule on Tuesday
- Homework #1 due Tuesday, 2/16/21 at 10 am EST
- Next week: class on Tuesday, practice exam during lecture on Wednesday
- Adjusted Open Hours this weekend + next week only:
  - Sunday 11 am - 1 pm
  - Monday 7 pm - 9 pm
  - Tuesday 7 pm - 9 pm
  - Thursday 7 pm - 9 pm
- Look for special zoom meetings for Monday Open Hours and Tuesday class/lab
- Look for practice exams on BB
- Exam #1: Friday, 2/19/21 at 4:30 pm EST for everyone (due at 6 pm)
  - 9 pages long
  - practice uploading this on Gradescope before hand!

\* MATLAB Grader + Lab Worksheets  
are due Friday 10 am EST  
this week ... yay!

### Review Quiz 1

- Q1: remember to evaluate left to right
- Q2: xor() only 1 can be true!  
'a' is 97, 'b' is 98, 'c' is 99, etc
- Q3: Watch for newlines! \n  
Watch for consistent variable names  
input() statements: no newline because it's already built in! Only add the 's' if taking in character or string/character vector  
remember formatting numbers (%f is float, %d is integer, %.2f is float w/2 decimal pts.)

### Review Lecture Material

How do we accomplish the following?

```
* * * * *  
* * * *  
* * *  
* *  
*
```

```
for i = 5:-1:1  
    for j = 1:i  
        fprintf('*')  
    end  
    fprintf('\n')  
end
```

i  
5  
4  
3

j  
1, 2, 3, 4, 5  
1, 2, 3, 4

```

% for loops

% sum the elements of a vector

vec = 1:9;
runsum = 0; % initialize runsum
for i = 1:length(vec)
    runsum = runsum + vec(i);
end
vec % for display only

% preallocating
% we have 5 students and we want to calculate their average quiz scores
% scores are all out of 10

students = 1:5;
avg_quizzes = zeros(1, length(students)); % preallocate outside the loop
for i = 1:length(students)
    quiz_vec = zeros(1,3); % preallocate inside the loop
    fprintf('Now let's enter Student %d's quiz scores.\n\n', i)
    quiz_vec(1) = input('Enter the score for quiz 1: ');
    quiz_vec(2) = input('Enter the score for quiz 2: ');
    quiz_vec(3) = input('Enter the score for quiz 3: ');

    avg_quizzes(i) = mean(quiz_vec);
end

fprintf('Here's everyone's average quiz scores: \n')
disp(avg_quizzes')

```

← practice this and notice the methods of:

- preallocating outside the loop and why
- preallocating inside the loop and why
- using the  $i$  variable in the for loop to fill a vector in (you would use  $i$  and  $j$  if it was a nested loop)

### Subplot

`subplot(a, b, c)`       $a \times b$  dimensions,  $c$  is number you're working

`subplot(2, 1, 1)`  
`plot(x, y, 'bo')`



`subplot(2, 1, 2)`  
`plot(x, y, 'r+')`



3x3

$c=1$	$c=2$	$c=3$
$c=4$	$c=5$	$c=6$
$c=7$	$c=8$	$c=9$

check out the .m file text that will go over plotting!