LOOP WEEK!

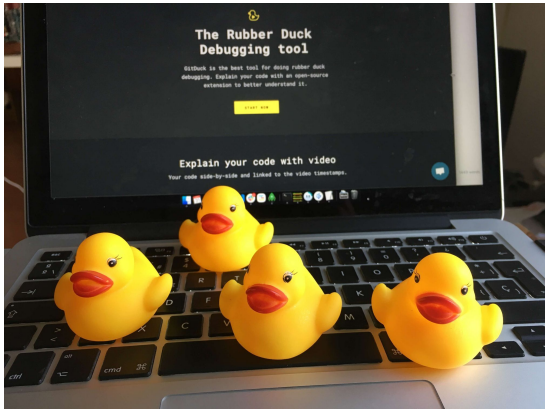
office hours are linked on the syllabus!

First, a review...

how do we debug code?

How to ask questions for EdStem

- **explain the problem:** what did you want to happen? what happened instead?
- what line of code is the problem on? (if you aren't sure, add disp() statements to figure it out! this may solve your problem)
- is the problem in the function or the command window?
- are you getting an error or just the wrong output?
- **if you have an error:** what do you think is causing it? (guess if you don't know!)



rubberduckdebugging.com

Common things to check for

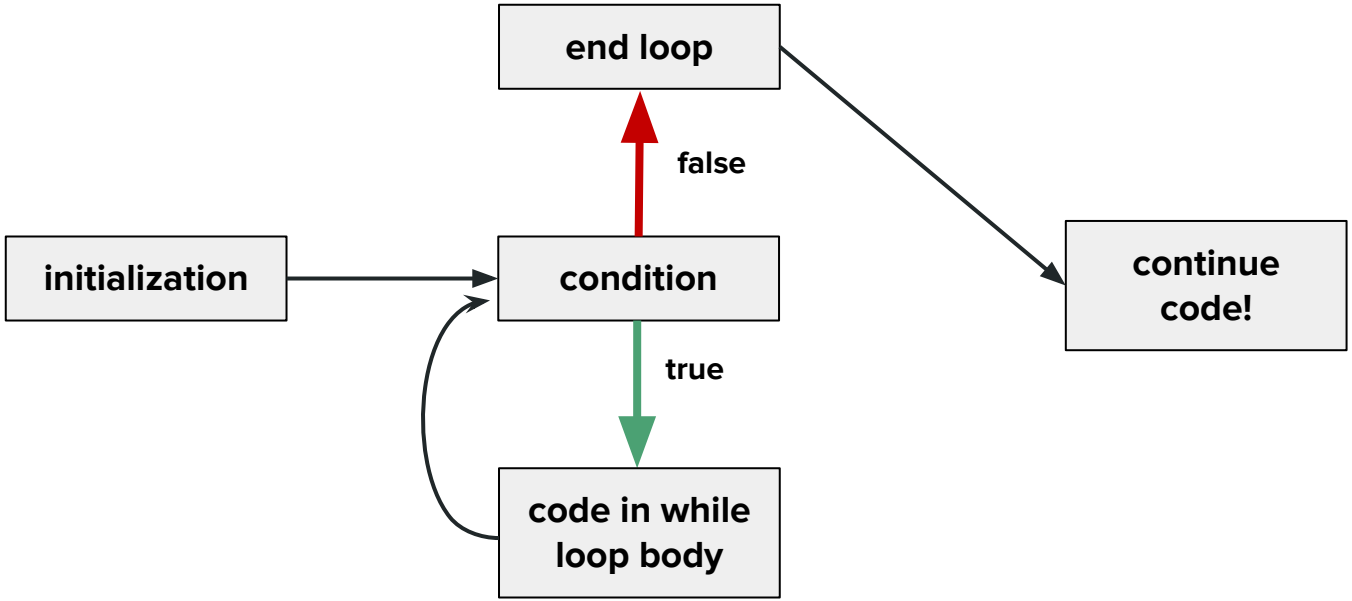
- spelling errors!
- not passing variables to your functions (remember, they can't see what's going on anywhere else!)
- not returning values from your function (remember, things are lost unless you **return** them!)
- not using [] or () properly when calling a function or defining variables
- doing work in the command window which the problem tells you to do inside the function
- *don't try to write all your code in one line! break it up and make new variables, check that each one of them is what you expect.*
- *test your own code! you won't know why it isn't passing unless you know what you expected it to do*

On to loops

assignments this week let you play with building blocks you have

we'll cover all the basic content you'll need today!

While loops


end loop
false
initialization
condition
continue
code!
true
code in while
loop body

While Loops

- While Loops must have a conditional expression, and the conditional expression must have at least one variable!
- Conditional variables must be “Initialized” before the loop
- The conditional variable should advance with each pass!

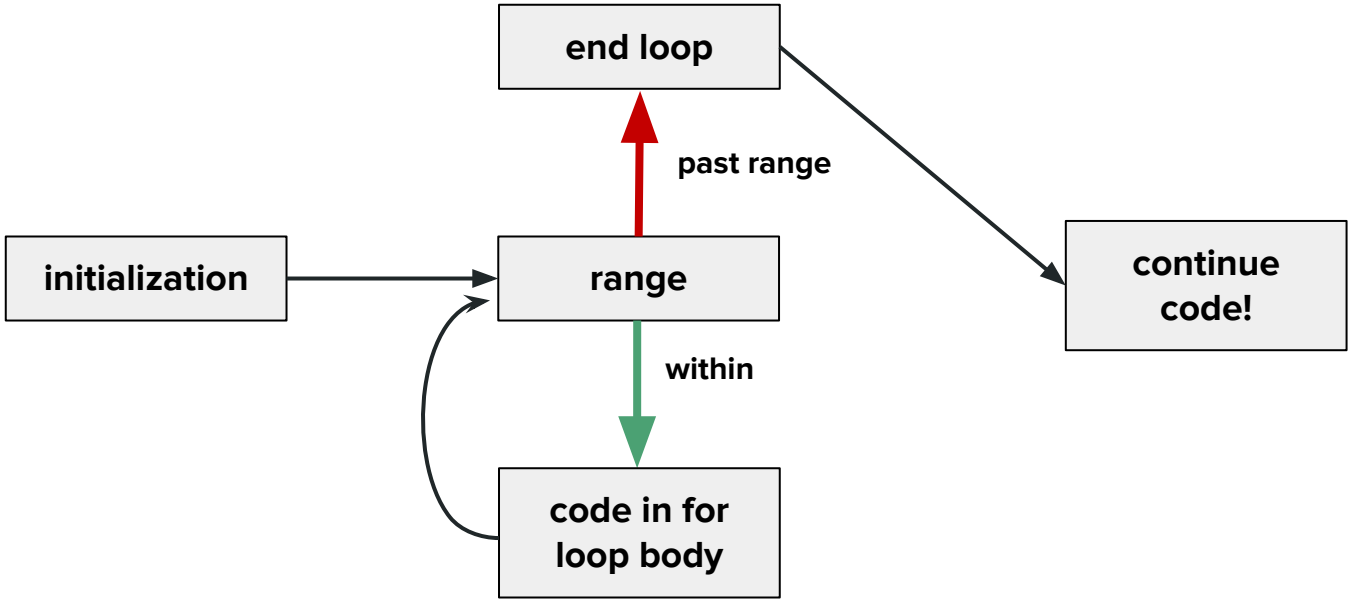
```
a=0

while a<10
    a=a+1
        if (a==5)
        continue
        end
        disp(a)
end
```

Common Bugs

you will write a loop which goes forever! everyone does it at least once.

you will also write loops which never start! sometimes you might even want this! (can you think of a reason?)

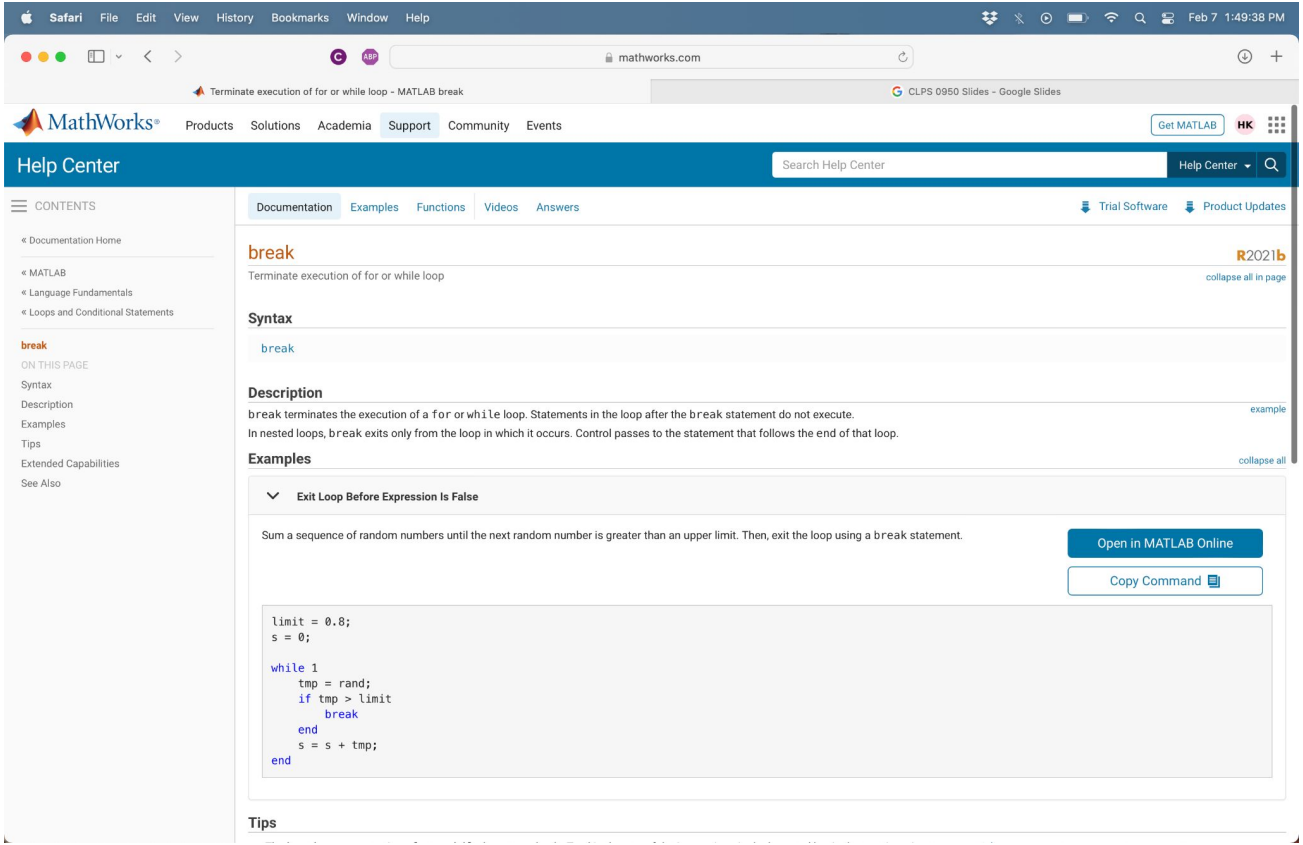
FOR loops


end loop
past range
initialization
range
continue
code!
within
code in for
loop body

when might you use a for loop? while loop?

- example from my research of combining them:

break statements




```
limit = 0.8;
s = 0;

while 1
    tmp = rand;
    if tmp > limit
        break
    end
    s = s + tmp;
end
```

Function rem(x,y)

This function checks for a remainder when dividing x by y:

rem(x,y)

Ex: rem(x,3) will check if the value of x is divisible by 3, because if it is the result should be 0.