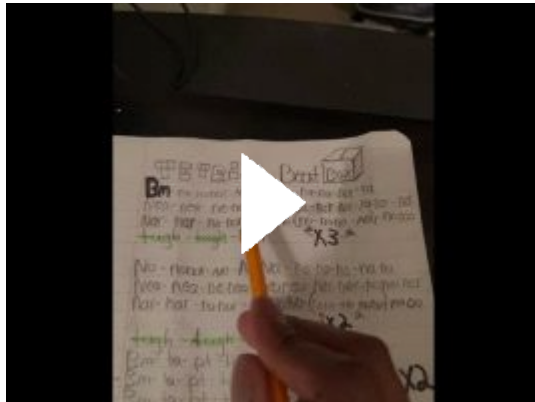


# L9 : While and Random

Sunday, January 23, 2022 11:28 PM

## [Tetris Beatbox Explained](#)



# A1 last questions on how it should work

Monday, October 10, 2022 11:25 AM

## A2 introduction

Sunday, October 9, 2022 6:22 PM

Run A - Soln 2 (w/ code hidden)

# Repetition & while

Tuesday, January 25, 2022 9:24 PM

Herb Thyme

game would be  
more interesting to play if ....  
(Type in chat)

Multiple turns!

How do we make things repeat  
in python?

Very important skill. one of the  
things code does very well is perfect,  
tedious, repetition. Computer never gets  
bored, never makes mistakes.  
Humans: Bad at it. Slow, errors, dislike  
it.

Lets show how bad!  
Say Pad Kid Poured Curd pulled Cool 10x

<https://www.naturalreaders.com/online/>

(load it with tongue twister. Txt)

Example:

NFT = \$1000  
looses 5% a day  
balance after 5 days?

2 min try to write that code

```
1 nft_value = 1000
2 nft_value = nft_value * .95
3 nft_value = nft_value * .95
4 nft_value = nft_value * .95
5 nft_value = nft_value * .95
6 nft_value = nft_value * .95
7
8 print(nft_value)
```

Sw. what if we wanted to do it  
until the value was 0?

... what if we wanted to do it until the value was 0?

while

NFT\_Val = 1000

days = 0

while NFT\_Val > 0:

NFT\_Val = NFT\_Val \* .95

days = days + 1

Indented code will run while condition evaluates to True.

```
1 nft_value = 1
2 days = 0
3
4 while nft_value > 0.01:
5     nft_value = nft_value * .95
6     days = days + 1
7     print(nft_value)
8
9 print(days)
```

Will this work? Yes/No/Maybe poll

A Yes  
B no  
C depends

If vs.

while

1. Evaluate Condition

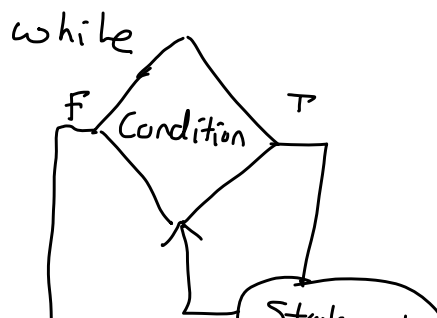
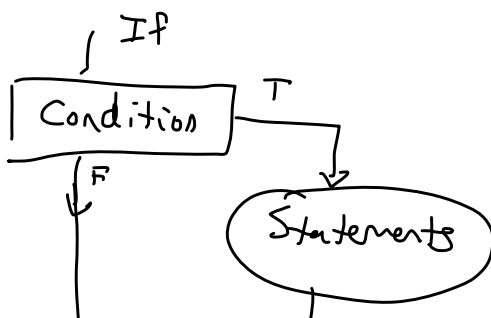
2. If true, execute body

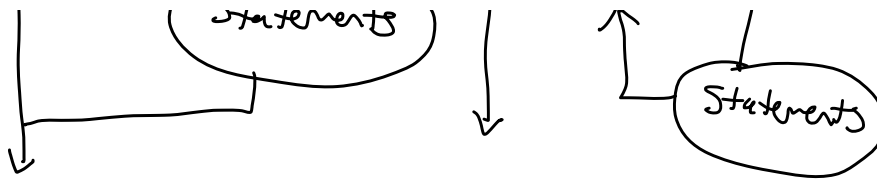
4. Move on

1. Evaluate Condition

2. If true, execute body

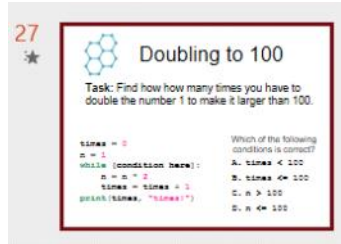
3. Go back to 1





**Task:** Find how many times you have to double the number 1 to make it larger than 100.

Breacout 100ms 3 min



ABCD  
to complete  
this solution

I have a joke! Who wants to play?  
Pete and Peat are on a boat. Peat  
Falls out. Who is left?

# In place operators

Tuesday, January 25, 2022 10:06 PM

Programmers like shortcuts!

Count = Count + 1    Count -= 1  
total = total + 1    total += 1  
also /=    //=    % =

```
1 #what if the condition is false to begin with?  
2 a = 4  
3 while a > 6:  
4     print("wheeeee")
```

(pause to predict, run)

```
1 #what if the condition is true and stays true?  
2  
3 b = 6  
4 while b < 8:  
5     print("Register to vote at Vote.Gov")  
6
```

(pause to predict, run)

```
1 #what if the condition is true and stays true?  
2  
3 user_sum = 0  
4  
5 while user_input >= 0:  
6     user_input = int(input("enter a number, negative to quit: "))  
7     user_sum += user_input  
8  
9 print(user_sum)
```

This wont work. why?  
(user\_input not defined)

```
4 user_input = 0
```

```
1 #count from 30 down to 10 by 3s
```

Breakout Room 5 3 min

Post code on slides 5+  
(show some)

```
3 b = 30
4 while b >= 10:
5     print(b)
6     b -= 3
```



# Random

Tuesday, January 25, 2022 10:30 PM

`import random`  
`num = random.randint(0, 10)`

function call

Module name

dot

we want an integer

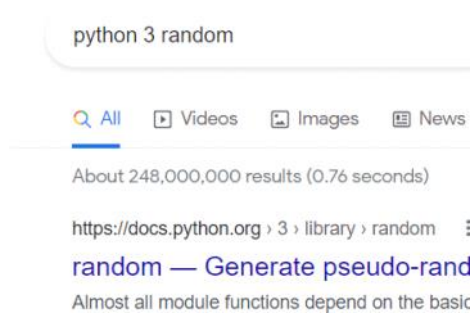
from 0

up to AND including

There's an AND in random

by convention put all imports at top of program

What does it do? JFGI  
(Google it)



lots of cool options. Read to learn!

```
5 # Pseudocode:
6 # - choose a random integer between 0 and 100
7 # - ask the user to guess a number
8 # - tell the user whether they won or not
```

Breakout rooms 3 min  
1 person share screen  
other person chat: help

Post code on slides 5+  
(show some)

```
10 import random
11
12 number = random.randint(0,100)
13
14 guess = int(input("guess a number: "))
15
16 while guess != number:
17     guess = int(input("guess a number: "))
18
19 print("Yay you won!")
```

Alternative way to import it:

```
10 from random import randint
11 number = randint(0,10)
12
```

Important Note:  
Don't name files in the same directory  
the code is in the names of things  
you want to import

```
import random
input("Rock, paper, scissors? - r p s: ")
print(random.choice(["You win", "You lose", "It's a draw"]))
```