EM&CP BLK   Tuesday, January 25, 2022

9 week schedule
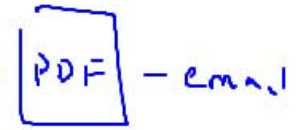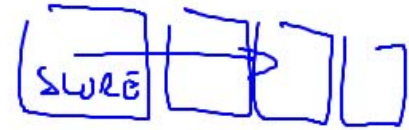
✓ programming ltw   ✓ bulk

mid term exam

Part.

(quiz)

mini project

Programming ltw ✓

Semester final

major project

(quiz)

multi-person project —TBT

NO GRADES ARE POSTED IN CANVAS

SURE

PDF — email

60   40   50   150 points
30   37   44   116

$\frac{116}{150} \Rightarrow \sim 77.3$

assignment

Can be changed — mutable

immutable

Cannot be changed
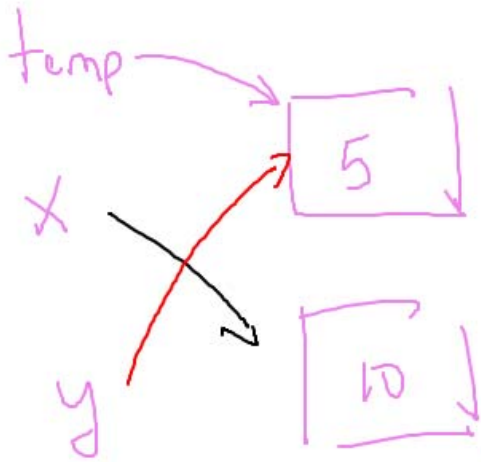

1900   1950   2000
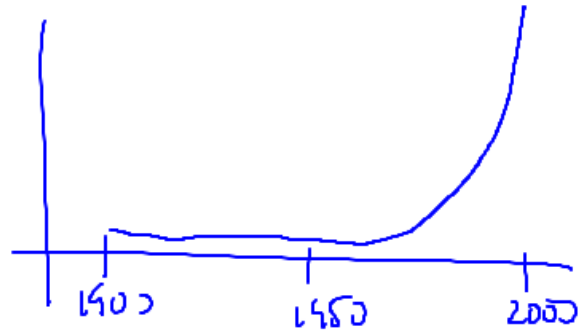
Python & Processing

immutable — constant (ints, floats)
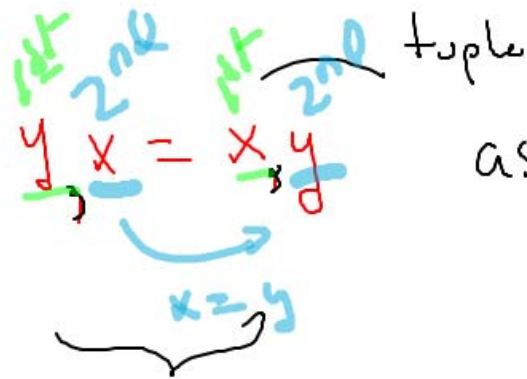
Strings

$X = 5$

$y = 10$

Want $x = 10, y = 5$

Swap

temp

5

x

y

10

$x = y$

$y = x$

both to

answer!

Python, processing

$+$

temp $= x$ ✓

$x = y$ ✓

$y = $ temp ✓

Swap

$x \longrightarrow \boxed{5}$

$y \longrightarrow \boxed{6}$

1st 2nd   1st 2nd   tuple

$y, x = x, y$
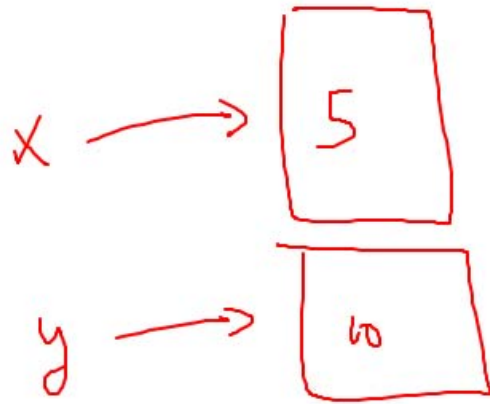
     assignment by position

$x = y$

unpacking a tuple

$X = 5$

$y = 10$

$z = 20$

$\underset{1}{z}, \underset{2}{y}, \underset{3^{rd}}{x} = \underset{1}{x}, \underset{2}{z}, y \; \overset{5}{\underset{}{}} \; \overset{20}{\underset{}{}} \; \overset{10}{\underset{3^{rd}}{}}$
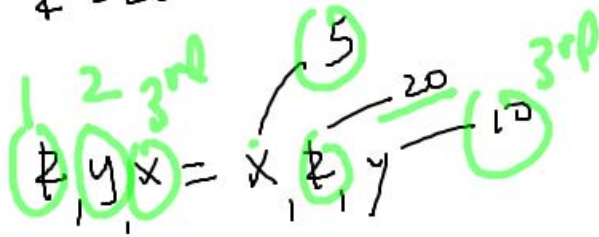
python only

$z = 5$

$y = 20$

$X = 10$

Happy BD to you
"   "   ''
"   "   "
"   "   ''

Happy BD dear Stars
Hpy BD to you

for Loop? — definite loop

Syntax: for <variable> in <sequence>:
            ⎡indents <body>⎤

body of for loop is identified by indent

Sequence: String
          list

for letter in "Tuesday"

① ② ③ ④ ⑤

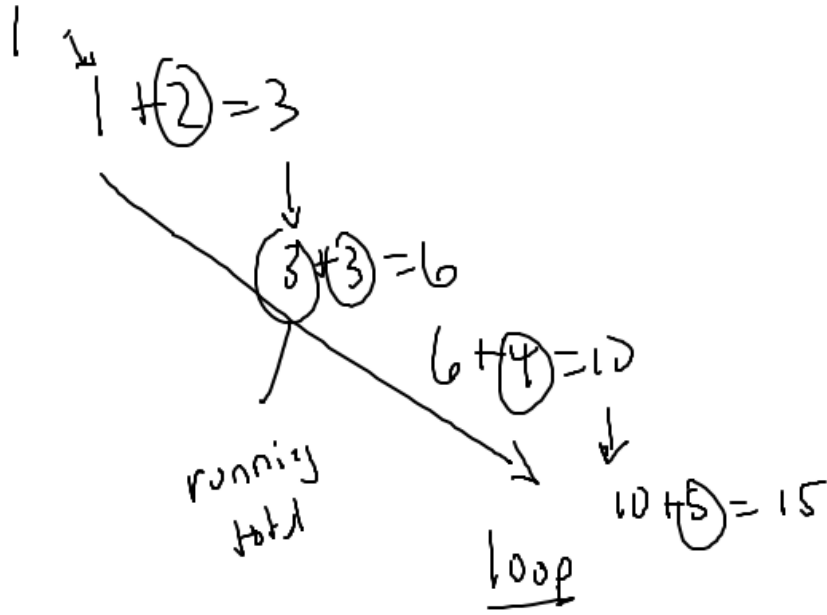1st 7th
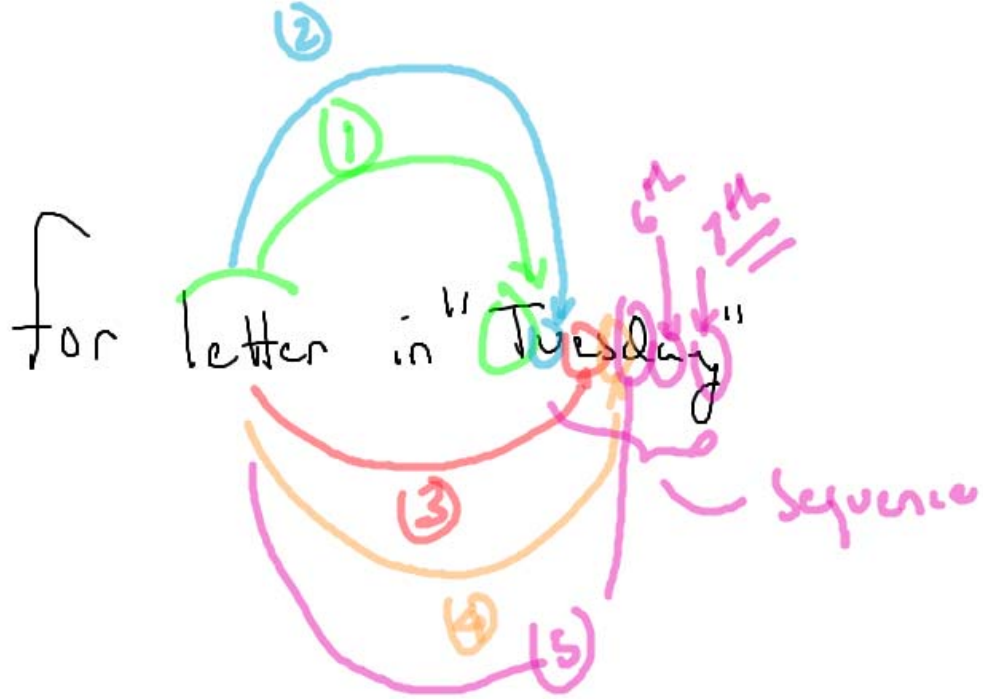
Sequence

Sequences: string

list $\longrightarrow$ [x, x, y, z]

Sum the first n natural numbers

$$\mathbb{N} = \{1, 2, 3, 4, 5, \ldots\}$$ ✓ in this class

$$\left(\mathbb{N} = \{0, 1, 2, 3, 4, 5, \ldots\}\right)$$

$\underline{n = 5}$ $\nearrow^{1st}$ $\nearrow^{2nd}$ $\nearrow^{3rd}$ $\nearrow^{4th}$ $\nearrow^{5th}$

want: $1 + 2 + 3 + 4 + 5 = \boxed{15}$

$1 + 2 + 3 + 4 + 5$

1

$1 + ② = 3$

$③+③ = 6$

$6 + ④ = 10$

running
total

loop

$10 + ⑤ = 15$

```
naturalNums=[1,2,3,4,5]
total=0
for number in naturalNums:
    total=total+number
print("The total is",total)
```

15

number

natural Nums = [1, 2, 3, 4, 5]
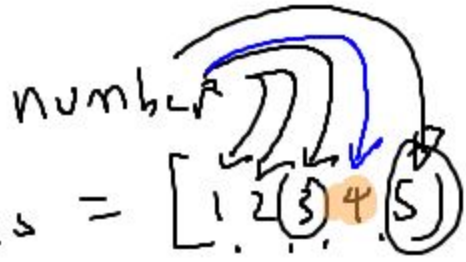
total = 0

number = 1

total = total + number   total = 1

number = 2

total = total + number   total = 3

total = total + number = 6 → total = 6

total = total + number   6+4 = 10 = total

total = total + number   10+5 = 15 = total

range $\longrightarrow$ generates an iterable sequence

string
list

for <var> in <seq>:

iterate

<body>

iterable sequence

range(5) $\longrightarrow$ 0, 1, 2, 3, 4

ends 1 less than 5

starts at zero

in general

range(n) $\longrightarrow$ 0, 1, 2, 3, 4, --- n-2, n-1