

CSE 20 11-20-20

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Page: ext 2 more days

more lists....

the concatenation operator +
works on lists (also on tuples)

Ex.

$$A = [1, 2, 3]$$

$$B = [4, 5, 6]$$

$$C = A + B \neq [1, 2, 3, 4, 5, 6]$$

$$C += A$$

Can also use * on lists (and
tuples.)

$D = 3 * A$ # same as $A + A + A$

$E = A * 3$ # same thing.

also slices work same way as strings

$D[3:7] \neq D = [1, 2, 3, 1, 2, 3, 1, 2, 5]$
 $\neq [1, 2, 3, 1]$

$D[2] = 5 \neq [1, 2, 5, 1, 2, 3, 1, 2, 5]$
 $D[3:7] = [] \neq [1, 2, 5, 2, 3]$

can alter lists with slices.
 (not str & tuples)

hav del operator

$\text{del } D[3] \neq [1, 2, 5, 3]$

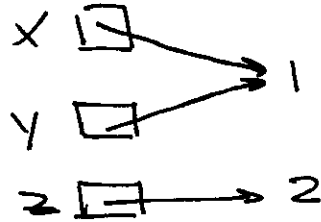
$\text{del } E[1:5] \neq [1, 3, 1, 2, 3]$

objects: is operator:

$x = 1$

$y = 1$

$z = 2$



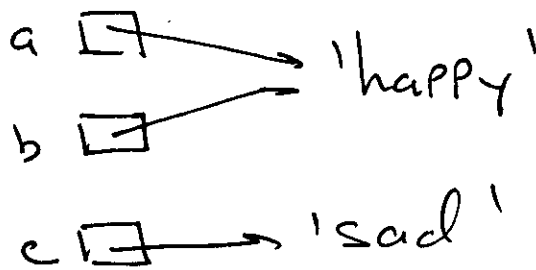
$x \text{ is } y \neq \text{True}$ (same as $x == y$)

$x \text{ is } z \neq \text{False}$ (" " $x == z$)

$a = \text{'happy'}$

$b = \text{'happy'}$

$c = \text{'sad'}$



$a \text{ is } b \neq \text{True}$ (same as $a == b$)

$a \text{ is } c \neq \text{False}$ (" " $a == c$)

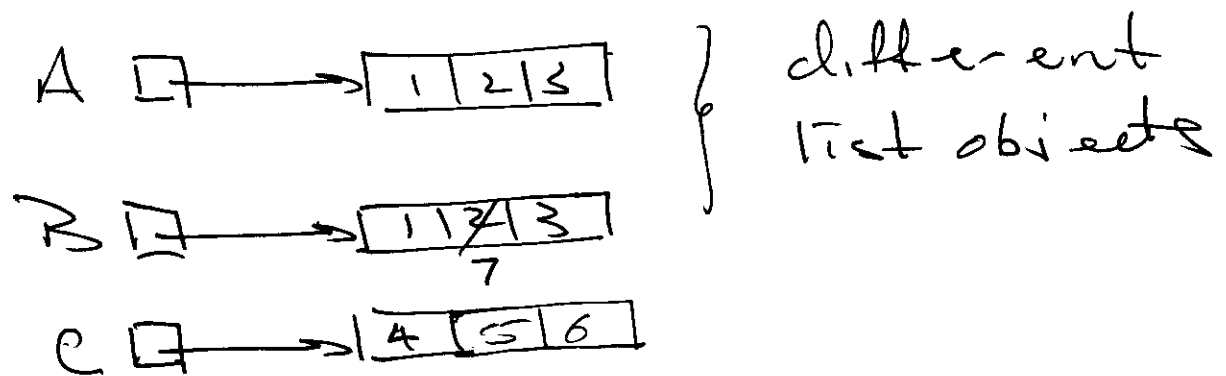
$$A = [1, 2, 3]$$

$$B = [1, 2, 3]$$

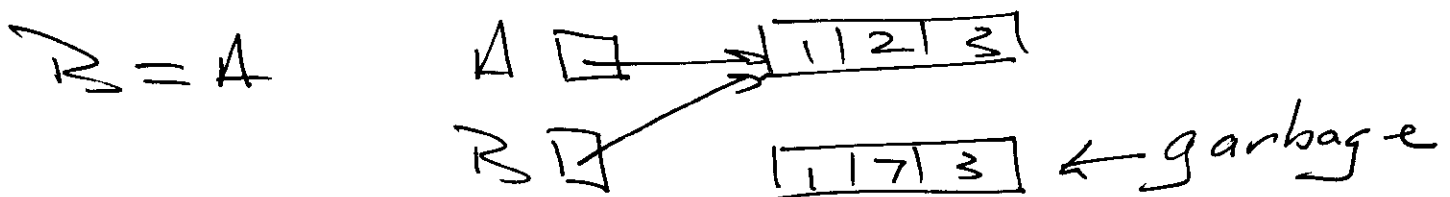
$$C = [4, 5, 6]$$

$$A \text{ is } B \neq \text{False} \quad (A == B \text{ True})$$

$$A \text{ is } C \neq \text{False} \quad (A == C \text{ False})$$



$$B[1] = 7$$



$$A \text{ is } B \neq \text{True}$$

- `is` compare addresses of objects
- `==` compare data in objects

Sometimes we want a clone,
new object with same data

$$A = [1, 2, 3]$$

$$B = A[:]$$

another way

$$B = \text{list}(A)$$

$$A \text{ is } B \neq \text{False}$$

$$A == B \neq \text{True}$$

Recall $\text{swap}(L, i, j)$

Ex. ReverseList.py

Ex. ReverseSequence.py

Quiz + Review Problems

write one that

① concatenate 2 lists
(pretend you don't have +)

② interleave 2 lists

$$\begin{array}{l} [1 \ 2 \ 3] \\ [4 \ 5 \ 6] \end{array} \longrightarrow [1 \ 4 \ 2 \ 5 \ 3 \ 6]$$

③ reverse list, return reversal.

④ all of above on tuples.