

CODING EXERCISES

WHILE LOOPS

Remember: You write a while loop like this: while *condition*:

The condition can be anything that evaluates to True or False. While loops often use a counter, such as this:

```
x = 0
```

```
while x<3:
```

```
    x = x+1
```

You can end a loop with a break statement.

Exercise 1: Create a simple countdown that displays the numbers 10 to 0 using a while loop.

Exercise 2: Let's make the countdown look more real by adding a 1 second pause between displaying each of the numbers! Inter the following before the first line of your code: import time

Then find the place where you want the execution of the program to wait for a second and enter the following code: time.sleep(1)

(1 is the number of seconds to wait – you can experiment with this value.)

Exercise 3: Let's create multiplication tables: Ask the user to choose a number between 1 and 9 and show the multiplication table using a loop. Example: Number chosen is 3, so display the result of 1x3, 2x3, 3x3, 4x3, 5x3, 6x3, 7x3, 8x3, 9x3, 10x3. Ideally, display every line like this: 1x3 = 3

LISTS

Remember: You define a list like this: myList = [1,2,3,4,5,6,7]

You can change list elements like this: myList[0] = 8 (This changes the element at position 0 to 8)

You can add a new element to the end like this: myList.add(21)

You can remove an element like this: myList.pop(6) or: myList.remove(7) (both would remove the 7 at the end; pop finds the indicated position, remove finds the value)

You can find the length of a list like this: myList.len()

Exercise 4: Let's go shopping! Create an empty list to hold prices. Create a loop in which you let users enter product prices until the users let you know they're done. Save all prices in a list. When the user is done, display the list and the total price.

Exercise 5: Create 2 lists of names. Create a program that takes each element from the first list and adds it to the end of the second list. However, we don't want to have any name twice, so check if the name exists before you add it. You can do that with the following if statement: if *myName* in *myList*:

Replace myName with the variable that holds the name you are looking for. Replace myList with the list you are searching through.

Exercise 6: Create a list of cooking ingredients. Build a program that lets the user check if an ingredient is available or not (either display "ingredient in stock" or "ingredient not available").