

Extra practice problems are for beginning programmers who are finding some aspect of the homework challenging. They will break some of the homework problems into smaller pieces and solutions are provided. Try to answer each question yourself before checking against the (provided) answers. There will often be more than one way to accomplish each task. Again, the goal of the homework is to force you to practice thinking through programming problems yourself. Extra practice practice problems are for your own use, and do not need to be turned in.

Problem 1 -

Start with  $y=1000$ . Each cycle in a loop,  $y$  should be reduced to 95% of its previous value. Print the sequence number and the value of  $y$  for each step until the value falls below 1.0

Problem 2 -

The user types a string, which may or may not contain the substring "at", and may have more than one copy of "at". Write a script to find the SECOND "at" in the string and print the list index where it occurs (or -1 if it doesn't occur). Test your program on the word "ratatattat"

Problem 1 -

Start with  $y=1000$ . Each cycle in a loop,  $y$  should be reduced to 95% of its previous value. Print the sequence number and the value of  $y$  for each step until the value falls below 1.0

Answer:

```
y=1000
```

```
i=1
```

```
while y>1.0:                # the loop continues until y falls below 1
    print i,y                # obvious
    i+=1                     # increment the loop counter
    y*=0.95                  # modify y
```

Problem 2 -

The user types a string, which may or may not contain the substring "at", and may have more than one copy of "at". Write a script to find the SECOND "at" in the string and print the list index where it occurs (or -1 if it doesn't occur).

Answer:

There are several ways to accomplish this. A simple way that you already have the knowledge to implement is:

```
word=raw_input()
idx=word.find("at")
if idx>-1 :
    idx2=word[idx+1:].find("at")
    if idx2!=-1 : print idx+idx2+1
    else: print -1
else: print -1
```

Now that you've seen this example, can you think of a cleverer way to do it? There are several...