String Manipulation

Strings are a bunch of characters "strung" together. Operations on strings are different than operations on numbers. There are three types of strings in Python:

```
"Sorta Standard"


'you see this one a lot in Python'


"""This one is
for multiple lines"""
```

Adding Strings Together (called concatenation)

```
food = "Butter"
bug = "fly"
prettyBug = food + bug
print (prettyBug)
```

Multiplying Strings

Although `-`, `/` and `**` do not work on strings, oddly enough `*` does.

`print("="*40)` Try it!

Getting at parts of string (slices or substrings)

```
school = "blakeLock highschool"
print (school[1])
print (school[0])        # positions start at zero
print (school[-1])       # can count from the end
print (school[-2])
print (school[0:3])      # positions are seen as between letters
print (school[2:])
print (school[6:10])
```

YOU CAN NOT CHANGE STRING SLICES (strings are immutable)

```
school[2] = 'X'          # will give an error
```

String Length

```
print (len(school))
```

String Methods

A method is mildly different from a function (which is the next document). Methods belong to individual objects. To invoke a string method we use the *<string name>.<method name>* e.g.

Try these:

```
print (school.upper())
print (school.replace('i','x'))
print (school.find(' '))
print (school.find("Ma"))
print (school.count("s"))
```

None of these methods change the original string. They only return a value with the changes.

Some of the more useful methods are given below and can be used with any string.
Note: We are using school = "`blakelock highschool`" in our examples.

COMMAND	EXAMPLE	OUTPUT
capitalize()	school.capitalize()	`Blakelock highschool`
count("string")	school.count("oo")	`1`
endswith("string")	school.endswith("ary") school.endswith("ool")	`False` `True`
find("string")	school.find("blake") school.find("hello")	`1` `-1`
isalpha()	school.isalpha()	`False`
isdigit()	school.isdigit()	`False`
islower()	school.islower()	`True`
isupper()	school.isupper()	`False`
replace("orig", "new")	school.replace("oo","uu")	`blakelock highschuul`
swapcase()	school.swapcase()	`BLAKELOCK HIGHSCHOOL`
upper()	school.upper()	`BLAKELOCK HIGHSCHOOL`
lower()	school.lower()	`blakelock highschool`

String Exercises

1. Ask the user for their first name and last name in two separate prompts. Display as one string with the initial of the first name, followed by a . and a space, then the last name.

   For example: Billy Smith would be displayed as B. Smith

2. Get the user's full name with **one** `input` and display the name as `LAST, first`

3. Get a file name from the user and display just the extension (e.g. for `hello.py`, `.py` is the extension).

4. Get a sentence from the user and display it back with one word per line.

5. Get a number from the user (n) and create an n x n box of "X"s on the screen. e.g. If they entered 12:

```
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
```