FUNDAMENTALS OF PROGRAMMING

Week 2

More on strings

STRING INDEXES

- Each string's character corresponds to an index number, starting from 0

I		l	o	v	e		c	o	d	e	!
0	1	2	3	4	5	6	7	8	9	10	11

```
text = "I love code!"
text[0]
'I'
text[7]
'c'
text[13]
Traceback (most recent call last):
  File "<pyshell#9>", line 1, in <module>
    text[13]
IndexError: string index out of range
```

NEGATIVE INDEX

- The characters can also be accessed from the opposite direction, starting from -1
- This is useful, when you have a long string and want to operate the end of it

I		l	o	v	e		c	o	d	e	!
-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

```
text = "I love code!"
text[-1]
'!'
text[-9]
'o'
```

STRINGS ARE IMMUTABLE

```
my_string = "QWERTY"
my_string[1] = "N"
Traceback (most recent call last):
  File "<pyshell#16>", line 1, in <module>
    my_string[1] = "N"
TypeError: 'str' object does not support item assignment
```

- Immutable means that you cannot change a character in a string
- But you can always just change the entire string to something else

```
my_string = "QWERTY"
my_string = "ASDFG"
my_string
'ASDFG'
```

SLICING STRINGS

- sring[start:stop] # from start to stop-1
- string[start:] # from start to the rest of the string
- string[:stop] # from the beginning to stop-1
- string[:] # a copy of the whole string
- string[start:stop:step] # from start to stop-1 by step

- *These slices are actually new strings!*
- File: example4.py

MODIFYING A STRING USING SLICING

- Even though strings are immutable (we cannot change the characters in one string), we can make changes by slicing the strings and adding them to a new string.

```
word = "progsamming" # We have a typo
begin = word[:4] # 'prog'
end = word[5:]   # 'amming'
new_word = begin + "r" + end
new_word
'programming'
```

- File: Example5.py