

OH TWITTER!
STRINGS

ANNOUNCEMENT

- Please come to office hours!

STRINGS IN PYTHON

Lecture Notes modeled after: <http://www.openbookproject.net/>
<http://www.pythontutor.com/index.html>

What are some of the
data types we've seen so far?

int, float, bool, str

Strings are made of smaller pieces:
characters

The **String** is considered as a **compound** data type: that is, you can treat it as a single thing, or you can access its parts

The bracket operator: selects a single character from a string

```
fruit = "apple"
```

```
letter = fruit[0]
```

```
print letter
```

```
letter = fruit[1]
```

```
print letter
```

```
letter = fruit[2]
```

```
print letter
```


р р а

```
# Length of a string, indexing
fruit = "strawberry"
fruit_len = len(fruit)
print fruit_len
print fruit[0]
print fruit[fruit_len-1]
print fruit[-1]
print fruit[-2]

print fruit[fruit_len]
```

10

s

y

y

r

IndexError: string index out of range

String Traversal

```
fruit = "strawberry"
```

```
index = 0
```

```
while index < len(fruit):
```

```
    letter = fruit[index]
```

```
    print letter,
```

```
    index += 1
```

strawberry

```
fruit = "strawberry"
```

```
for char in fruit:  
    print char,
```

strawberry


```
# create names for a group of ducks  
prefixes = "JKLMNOPQ"  
suffix = "ack"
```

```
for letter in prefixes:  
    print letter + suffix
```

Jack

Kack

Lack

Mack

Nack

Oack

Pack

Qack

A substring of a string is called a **slice**.

```
# Select a slice
```

```
s = "Monday Tuesday and Wednesday"
```

```
print s[0:6]
```

```
print s[7:14]
```

```
print s[16:20]
```

Monday
Tuesday
nd W

```
fruit = "banana"  
print fruit[:3] #start at the beginning  
print fruit[3:] #go to the end  
print fruit[:]
```

```
alphabet="abcdef"  
print alphabet[0:2]  
print alphabet[:3]  
print alphabet[2:]  
print alphabet[:]
```

ban

ana

banana

ab

abc

cedef

abcdef

String Comparison


```
# Using == to compare strings
fruit = raw_input('Enter your favorite fruit: ')

if fruit == "peach":
    print "Yes, we like peach too!"
else:
    print "Your favorite fruit is", fruit
```

Enter your favorite fruit: peach
Yes, we like peach too!

```
# lexicographical order
```

```
fruit = raw_input('Enter your favorite fruit: ')
```

```
if fruit < "banana":
```

```
    print "Your fruit, " + fruit + ", comes before banana."
```

```
elif fruit > "banana":
```

```
    print "Your fruit, " + fruit + ", comes after banana."
```

```
else:
```

```
    print "Yes, we have no bananas!"
```

Enter your favorite fruit: apple
Your fruit, apple, comes before banana.

Strings are **immutable**: can't change a character in the string

```
greeting = "Hello"  
print greeting  
greeting[0] = 'w'      # ERROR!
```

Hello

TypeError: 'str' object does not support item assignment

```
greeting = "Hello"  
new_greeting = 'W'+ ' '+greeting  
print greeting  
print new_greeting
```


Hello
W Hello

The **in** operator tests if one string is a **substring** of another.

```
print 'p' in 'apple'  
print 'i' in 'apple'  
print 'ap' in 'apple'  
print 'app' in 'apple'  
print 'ab' in 'apple'
```

```
print 'a' in 'a'  
print 'apple' in 'apple'
```

True
False
True
True
False
True
True

```
def remove_vowels(s):  
    vowels = "aeiouAEIOU"  
    s_without_vowels = ""  
    for letter in s:  
        if letter not in vowels:  
            s_without_vowels += letter  
    return s_without_vowels  
  
user_input=raw_input('Please enter your word:')  
print remove_vowels(user_input)
```

Please enter your word:banana
bnn

#Eureka traversal: as soon as we find what we are looking for,
#we can cry Eureka! and stop looking

```
def find(string, ch):  
    index = 0  
    while index < len(string):  
        if string[index] == ch:  
            return index  
        index += 1  
    return -1
```

```
user_input=raw_input('please enter your word:')  
print find(user_input, 'a')
```

please enter your word:banana

1

Counting in String

```
fruit = "banana"  
count = 0  
for char in fruit:  
    if char == 'a':  
        count += 1  
print count
```

3

COMING UP NEXT:
ANALYZING TWITTER
DATA



THANKS!

Any questions?

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<http://www.sci.utah.edu/~beiwang/teaching/cs1060.html>

CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)
- Photographs by [Unsplash](#)