

Processing Strings

Programming and Algorithms

Lecture by
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```
n = 3  
for i in range(1,n+1):  
    print("Hello World!")
```

Hello World!
Hello World!
Hello World!

What will we Cover?

- Comparing strings
- Repeating strings
- Concatenating strings

Comparing Strings I

- `==` operator used to check whether two strings are identical
- `!=` operator used to check whether two strings are different

Example	Result
<pre>check1 = "string" == "string" print(check1)</pre>	True
<pre>check2 = "string" != "string" print(check2)</pre>	False

Comparing Strings II

Note: comparison of strings is case sensitive (i.e., lowercase 'a' is not equal to uppercase 'A')

Example	Result
<pre>check1 = "String" == "string" print(check1)</pre>	False
<pre>check2 = "String" != "string" print(check2)</pre>	True

Repeating Strings

- * operator used to multiply the contents of the string a specified number of times

Example	Result
<pre>repeat1 = "&" * 5 print(repeat1)</pre>	<pre>"&&&&&"</pre>
<pre>repeat2 = "Hello" * 3 print(repeat2)</pre>	<pre>"HelloHelloHello"</pre>

Examples I

Empty string

```
str1 = ' '  
str2 = ''  
print(str1 == str2)
```

False

Quotation marks

```
str3 = '"Good"'  
str4 = 'Good'  
print(str3 != str4)
```

True

Repetition

```
str5 = "a1"  
print(str5 * 3)
```

a1a1a1

Repetition with a space

```
str6 = "a1 "  
print(str6 * 3)
```

a1 a1 a1

Concatenating Strings

- + operator used to combine two strings into one

Example	Result
<pre>s1 = "Hello " s2 = "World!" s3 = s1 + s2 print(s3)</pre>	<pre>"Hello World!"</pre>

Examples II

Note: concatenation will not add spaces, like the `print()` function

```
str7 = "Python" + "is" + "fun"  
print(str7)
```

Pythonisfun

Spaces are part of the string

```
str8 = "Python " + "is " + "fun"  
print(str8)
```

Python is fun

Common Errors in Python

It is not possible to concatenate a string and a non-string together.

```
str9 = "string " + 1.0  
print(str9)
```

Error location

TypeError

Traceback (most recent call last)

~\AppData\Local\Temp\ipykernel_1836\3473237794.py in <module>

----> 1 str9 = "string " + 1.0

2 print(str9)

Error type

Error description

TypeError: can only concatenate str (not "float") to str

Examples III

Compare concatenation with itself and replication twice

```
str10 = "String"  
str11 = str10 + str10  
str12 = str10 * 2  
if(str11 == str12):  
    print("Strings are the same")  
else:  
    print("Strings are not the same")
```

Strings are the same

Try It Yourself

Write a program that compares two strings entered by the user

- If the strings are the same, only the first one is printed
- If the strings are different, the strings are concatenated, and the new string is printed