String Functions and Methods

Programming and Algorithms

Lecture by

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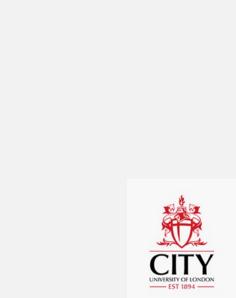
```
Hello World!
Hello World!
Hello World!
```

What will we Cover?

- Working with the string data type

- Using string methods

Checking the String I

- `isalpha()` – used to check if all characters in the string are alphabetic

- `isnumeric()` – used to check if all characters in the string are numeric

Example	Result
`str1 = "Hello World!"` `print(str1.isalpha())`	`False`
`str2 = "Hello World!"` `print(str2.isnumeric())`	`False`

Checking the String II

- `islower()` – used to check if all characters in the string are lowercase letters
- `isupper()` – used to check if all characters in the string are uppercase letters

Example	Result
str3 = "Hello World!" print(str3.islower())	False
str4 = "Hello World!" print(str4.isupper())	False

Examples I

Is lower?

```python
str1 = "lowercase"
print(str1.islower())
```

```
True
```

Is upper?

```python
str2 = "UPPERCASE"
print(str2.isupper())
```

```
True
```

Is lower empty?

```python
str3 = ""
print(str3.islower())
```

```
False
```

Is upper empty?

```python
str4 = ""
print(str4.isupper())
```

```
False
```

Examples II

Is alphabetic?

```
str5 = "abc"
print(str5.isalpha())
```

```
True
```

Is numeric?

```
str6 = "123"
print(str6.isnumeric())
```

```
True
```

Is alphabetic empty?

```
str7 = ""
print(str7.isalpha())
```

```
False
```

Is numeric empty?

```
str8 = ""
print(str8.isnumeric())
```

```
False
```

Modifying the String I

- `lower()` – used to change all characters in the string to lowercase

- `upper()` – used to change all characters in the string to uppercase

Example	Result
`str5 = "Hello World!"` `print(str5.lower())`	`"hello world!"`
`str6 = "Hello World!"` `print(str6.upper())`	`"HELLO WORLD!"`

Modifying the String II

- `capitalize()` – used to change the first character in the string to uppercase
- `split()` – used to split a string at a specified character

Example	Result
`str7 = "hello world!"` `print(str7.capitalize())`	`"Hello world!"`
`str8 = "Hello World!"` `print(str8.split(' '))`	`['Hello', 'World!']`

Examples III

To lowercase

```python
str9 = "January"
print(str9.lower())
```

```
january
```

To uppercase

```python
str10 = "January"
print(str10.upper())
```

```
JANUARY
```

Capitalise

```python
str11 = "monday"
print(str11.capitalize())
```

```
Monday
```

Split

```python
str12 = "r2d2"
print(str12.split('2'))
```

```
['r', 'd', '']
```

Try It Yourself

Write a program to display three countries' names entered by the user in alphabetical order

Note: remember that for strings comparison is case sensitive, so strings should first be turned to lowercase.

However, the country names printed should be capitalised again.