Strings

Our Hello World program actually dealt with a lot of strings

Consider strings to be a sequence of 'char' s

```
>>> a = "hello"
>>> a
'hello'
>>> a = "Hello" + " World"
>>> a
'Hello World'
>>> a += " Again"
>>> a
'Hello World Again'
```

```
# convert with str
>>> a = str(3) + 's'
>>> a
'3s'

# now try a = a * 5
>>> a = a * 5
>>> a
'3s3s3s3s3s'
```

Strings – access through index

Consider strings to be a sequence of 'char' s
Can we extract characters?

```
>>> a = "Hello Bangalore"
>>> a[1]
'e'
>>> a[20]
Traceback (most recent call last):
  File "<pyshell#202>", line 1, in
<module>
    a[20]
IndexError: string index out of
range
```

```
>>> a[-2]
'r'
>>> a[-1]
'e'
>>> a[0]
'H'
>>> len(a)
15

# try changing the char at index 0
a[0]="h"
```

Strings - Slicing

➢Slicing a String with a start, end and step
- ➢To extract a substring
- ➢[start:end:step]
- ➢If a is a string then a[0:3] gives a substring
  - ➢which contains a[0], a[1], a[2] characters
  - ➢It is a lot forgiving in terms of index checks. Try with "out of bound" indices

Strings

```
>>> a='0123456789'
>>> a[0:9]
'012345678'
>>> a[0:10]
'0123456789'
>>> a[0:100]
'0123456789'
>>> a[-3:-1]
'78'
>>> a[-1:3]
''
```

```
>>> a[-1:3:1]
''
>>> a[-1:3:-1]
'987654'
>>> a[-1:-8:-1]
'9876543'
```

Strings

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```

Strings – summarizing slice movement

String	a	b	c	d	e	f	g	h	i	j
+ve index	0	1	2	3	4	5	6	7	8	9
-ve index	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

```
>>> a[-1:3]
''
>>> a[-1:3:-1]
'jihge'
```

Strings - challenge

```
>>> a='0123456789'
# Challenge 1 : Print the reverse of the string using slice
# Challenge 2 : Print only the even number indices
# Duration : 3 minutes
```

Strings – lots of string functions

```
a.startwith('0')
a.endswith('9')
a.find('a')
# funny thing with "find". Returns -1 to say it did not find
a.count('0')
a.isalnum()
a = "the discovery of india"
a.title()
a.capitalize()
a.lower()
a.upper()
```

🐍 Strings – now check this

```
>>> a ="the discovery of india"
>>> a.split()
['the', 'discovery', 'of', 'india']
>>> a.split(" ")
['the', 'discovery', 'of', 'india']

# any guesses which movie has this star cast?

>>> b = 'Samuel Jackson, John Trovolta, Bruce Wills, Uma Thurman'
>>> b.split(',')
['Samuel Jackson', ' John Trovolta', ' Bruce Wills', ' Uma Thurman']
```