2. Strings(cont.)

```
S = 'Spam Index'
```

```
print(len(S))
S[len(S)-1]
```

```
10
'x'
```

```
S[:] #All of S as a top-level copy (0:len(S))
```

```
'Spam Index'
```

```
S + 'xyz' # Concatenation
```

```
'Spam Indexxyz'
```

```
S # S is unchanged
```

```
'Spam Index'
```

```
S= S +'xyz'
S
```

```
'Spam Indexxyz'
```

```
S * 8 # Repetition
```

```
'Spam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpa
m IndexxyzSpam Indexxyz'
```

```
S[0] = 'z' # Immutable objects cannot be changed
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-11-d6107d812b2e> in <cell line: 1>()
----> 1 S[0] = 'z' # Immutable objects cannot be changed

TypeError: 'str' object does not support item assignment
```

```
S = 'z' + S[1:] # But we can run expressions to make new objects
```

```
S
```

```
'zpam Indexxyz'
```

```
S * 8 # Repetition
```

```
'Spam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpam IndexxyzSpa
m IndexxyzSpam Indexxyz'
```

```
S[0] = 'z' # Immutable objects cannot be changed
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-11-d6107d812b2e> in <cell line: 1>()
----> 1 S[0] = 'z' # Immutable objects cannot be changed

TypeError: 'str' object does not support item assignment
```

```
S = 'z' + S[1:] # But we can run expressions to make new objects
```

```
S
```

```
'zpam Indexxyz'
```

```
S.find('pa') # Find the offset of a substring
```

```
1
```

```
S ='Spapam'
S.find('pa')
```

```
1
```

```
S.replace('pa', 'XYZ')
```

```
'SXYZXYZm'
```

```
S
```

```
'Spam'
```

```
S = 'spam'
S.upper()
```

```
'SPAM'
```

```
S.isalpha()
```

```
True
```

```
'zpam Indexxyz'
```

```
S.find('pa') # Find the offset of a substring
```

```
1
```

```
S ='Spapam'
S.find('pa')
```

```
1
```

```
S.replace('pa', 'XYZ')
```

```
'SXYZXYZm'
```

```
S
```

```
'Spam'
```

```
S = 'spam'
S.upper()
```

```
'SPAM'
```

```
S.isalpha()
```

```
True
```