

ED5340 - Data Science: Theory and Practise

L3 - Strings

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Course web page: <https://ed.iitm.ac.in/~raman/datascience.html>

Moodle page: Available at <https://courses.iitm.ac.in/>

String a set of Unicode characters

- Representation of Strings
- Accessing string elements
- String properties (including immutability)
- String operations

String representation

- Single, double and triple quotes can be used
- Raw string
- multi-line strings

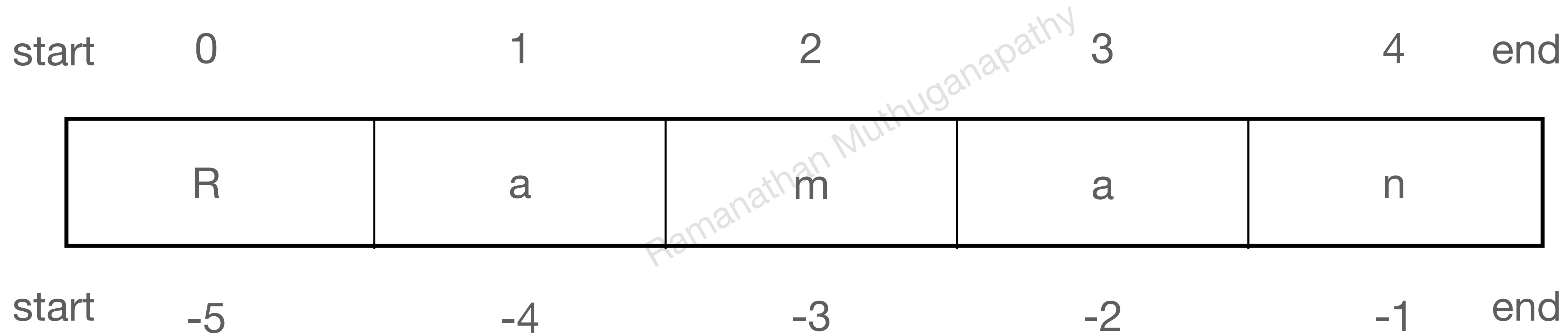
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Demo using L3_String_rep.py

Accessing string elements

arrays come into picture

- Str1 = "Raman"



- use `str1[i]` to access the characters in the string: `str1[0]` is R, `str1[-1]` is n and so on.
- -0 and 0 are same indices!

String slicing

you can derive substrings directly

- `str1[start : end]` - extracts from start to end-1
- `str1[start :]` - extract from start to end
- `str1[:end]` - extract from start to end - 1
- `str1[-start :]` - extract from -start to end
- `str1[:-end]` - extract from beginning to -end-1

Observation - The string starts from the first index (or beginning) but ends at end - 1 if there is an 'end' index

String properties - immutable

- mutable — —> changeable
- immutable — —> not changeable
- A string is not mutable
 - `str1 = "Kite"`
 - `str1[0] = 'L' # Error - string is not mutable, characters in a string cannot be changed`
 - `str1 = "Lite" #This is fine...`

Demo using
L3_String_acces_slice.py
L3_String_immutable.py

Other properties of strings

- String is an object
- Strings can be concatenated
- Strings can be replicated
- using 'in' for 'containment' checking

Demo using L3_String_properties.py

String operations

- syntax - string.function() #as string is an object and its member function can be called using function()
- Content test functions #isalpha(), #isdigit()
- conversion functions #upper(), lower().....
- search and replace #find(), #replace()
- str()
- chr() and ord() functions

Demo using L3_String_functions.py

- Q1: WAP to find out the working other functions: len(), rstrip(), partition(), str(), chr(), ord(), index() etc.'?
- Q2: Given a string, WAP to split them at the following: \, \\, blank space
- Q3: What is the difference between split() and partition() functions?

Console input and output

Input

- Input from the keyboard - it's a string
- use the `input()` function to get from keyboard
- use `split()` to split the input values
- use type conversion functions such as `int()`, `float()` etc.

Demo using L3_input.py

Output statement

Standard print s

- Default print st. -
- syntax - `print(objects, sep = ' ', end = '\n', file =sys.stdout, flush=false)`
- objects - can be of any datatype (**will be converted to string before print**)
- sep - separator symbol between various objects. Default is one blank space.
- end - specify what to print at the end. Default is '\n'
- file - Where to write. Default is sys.stdout (output screen)
- flush - output is flushed (True) or buffered (false)

Output statement

Formatted print

- Using formatted string literals
- Using the **format()** method

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Demo using L3_output.py