Data Types and Operations

- Numeric types
- Boolean types
- Strings
- None types

Numeric 2+2.5 = 4.5

- int, float, complex types
- Operations
  Logic : >, >=, <, <=, ==, !=
  Arithmetic : +, -, *, **, /, //, %
  Bit Operation: |, ^, &, <<, >>, ~
- ****** - power; -4**2 and (-4)**2 WAP to input X and Y and find x^y
- **//** - int division; -10//3 and 10//3
- **%** - modulus; 10%3, 10%-3

trainer.cpp@gmail.com

Boolean

- Only **True** and **False** values
- **True** and **False** are singleton objects
- **True** and **False** map to integers **1** and **0** respectively
- Any number other than **0** is treated as **True.**

- Test the outputs of the following commands on the prompt or in a script:

```
print(bool(0));          print(bool(10));   print(bool(-1))
print(int(True));        print(int(False))
```


Str '2'+'2.5' = '22.5'

- Strings are **immutable sequence** of characters
- Ex:

  ' simple string'

  "double quotes"

  """ triple quotes"""

String methods and operations

- len() : **len(<string object>)** # return length of the string
- upper() : **<string object>.upper()** # returns in upper case
- Lower() isdigit() isalpha() isspace() isalnum() islower() isupper()
- count() : # counts occurrence of a string in other
  <string object>.count(<search string>, [start, [end]])
- find() : # finds index of first occurrence, else returns -1
  <string object>.find(<search string>, [start, [end]])

String methods and operations

- Slicing and Indexing:
  <str>[index]
  <str>[start:end:step]
- replace() : # replaces all occurrence of **old** with **new count** no of times
  <string object>.replace(old , new [, count])
- split() : # splits a *string object* in multiple strings, using the *split string*
  <string object>.split(<split string>)
- join() : # joins the *list of strings* using the *join string*
  <joining string>.join(<list of strings>)

None type

- **None** represents null or empty
- Often returned by some methods, to mark no return value.

Questions

- WAP to reverse a string (slicing).
- WAP to find no of vowels in a string
- Rewrite vowels program to use a for loop (sneak peek into iteration).
- WAP to input 2 numbers and print their mean

Slicing and Indexing Questions

- Guess output of each slice :
  s='Python is Object Oriented'

  1. s[-1] 2. s[::-1] 3. s[:-1] 4. s[1:1] 5. s[4:10]

- What error do you see for following statements:
  s=''
  print(s[1])

- Do you get any error for the following code, if not give the output:
  S='Gaurav'
  print(s[1])

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Output Questions

- s='a b cd'
  print(len(s))
  print(s[::2])
  print(len(s[::2]))

- s='a#b#c#d#'
  print(s.split())
  print(s.split('#'))
  l=s.split('#')
  s='$'.join(l)
  print(s)

- S='Gaurav'
  S=S[::-2][::-2]
  print(S)

- print(1>2)

- print(4%2, 5%2, 2%5, sep=', ')

- s='abcba'
  s.upper()
  print(s)
  print(s.count('A'))
  print(s.count('A', 2,4))
  print(s.count('a', 2,4))

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Questions

- WAP to print all methods(functions/operations) available in a string (Hint : dir())
- View the help of any of the methods available above (Use the help builtin)
- Write a program to input temperature in Celcius(C) and print it in Fahrenheit (F)
  F = (9/5)C + 32
  ex: if input is C=2, output should be F=35.6
- Wap to print quotient and remainder of 2 numbers
- WAP to **store** the following patterns in a **string variable** and then print them: