Gaurav Gupta

Loops

- While Loop

- Break and continue

- List Comprehension

tuteur.py@gmail.com

Gaurav Gupta

While Loop

- Syntax :
  while *<condition>:*
  > *statements1*
  else: *# optional*
  > *statements2*

- *Statements2* is executed when condition becomes false (but not in case of break)

- WAP to print first 10 natural numbers. Update the program to print their sum

- WAP to count vowels in a string input by user.

- WAP to print all multiples of **3** till **N** (input N from user).

tuteur.py@gmail.com

Gaurav Gupta

Break and Continue

- **break** statement is used to terminate the current loop

- On execution, **continue** statement skips the statements below it in the current loop and forces next iteration of the loop.

- Update the **rolling dice** program to ask user to roll again or exit(break).

- Update the **rolling dice** program to also check for invalid inputs(continue)

tuteur.py@gmail.com

Gaurav Gupta

Iterating Sequences Python way

- Simple For loop

- Range based for loop

tuteur.py@gmail.com

Gaurav Gupta

For loop

- Use **for** loop:

  for *<variable>* in *<sequence type>*:

      # operations using **<variable>**

- Printing a List

  Print Square of elements

  Print length of words in sentence

  Sum elements in a list

  Input a sequence of number separated by spaces and convert it into a list of numbers

tuteur.py@gmail.com

Gaurav Gupta

Range

- Represents **immutable sequence** of numbers.

- **range()** method returns a **range object** in python 3

  range(start [,end [, step size]])

- Employed in range based for loops

- Ex:

  ```
  range(10)          # returns object with values 0 till 9
  range(5,10)        # 5 till 9
  range(20,100, 5)   # 20 till 95 with step size of 5
  ```

tuteur.py@gmail.com

Gaurav Gupta

Practice

- Print Whole numbers till N

- Sum numbers till N

- Print Square of numbers till N

- WAP to print 5 random numbers

- WAP to put 5 random numbers in a list

tuteur.py@gmail.com

Gaurav Gupta

List Comprehension : For loop

- Syntax:
  [expression(*<variable>*) **for** *<variable>* **in** *<sequence type>*   *[if <condition>]*   ]
      condition is optional

- WAP to generate list of first 10 natural numbers (Generate a list of their squares also).

- WAP to count vowels using list comprehension

- WAP to find sum of the squares of first 10 even numbers
      4 + 9 + 16 + 25 ....

tuteur.py@gmail.com