Python - Basics & Beyond -Session 4

Functions(Decomposition and Abstraction), Dictionary and Set,Recursion, Some Programs

NullStack Technologies Pvt. Ltd.

SET

A set is a collection which is both *unordered* and *unindexed*. It *does not allow* duplicates.

Built-in Functions:

z = {3,7,4,2}

 # You cannot access items in a set by referring to an index or a key.

z.add()

z.remove(), z.discard() **# remove raises error, not discard**

z.clear()

z.union(y) **# set union operation**

z.intersection(y) **# set intersection operation**

z.isdisjoint()

z.issubset()

z.issuperset()

DICTIONARY

Dictionaries are used to store data values in key:value pairs.

A dictionary is a collection which is *ordered, changeable* and *does not allow* duplicates.

Examples:

person = {"*name*": "Nauman Arif", "*company*": "NullStack Technologies", "*designation*": "Developer"}

person[“name”]

person[“color”] = ”red”

person.pop(“color”)

person_2 = person.copy()

person.keys(), person.values()

FUNCTION

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function.

A function can return data as a result.

Examples:

```
def my_function():
  print("Hello from a function")

def my_function(fname, lname):
  print(fname + " " + lname)

def my_function(x):
  return 5 * x, 5 + x
```

EXERCISE 1

Print All Integers That Aren’t Divisible by Either 2 or 3 and Lie between 1 and 50.

Take an input from a user and do it in the minimum lines of code.

EXERCISE 2

Calculate nCr

Use Factorial Formula to fing nCr

Example -> 3C2 = 3

EXERCISE 3

FIbonacci Using Recursion

0,1,1,2,3,5,8…….

EXERCISE 4

Tower of Hanoi Problem

Using Recursion

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Resonate Ideas, Overreach Limits


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