Course content:

Python for beginners:

-Introduction

-Print function

-Indentation, and comments

-Variables and datatypes

-Operators

-Input and Output

-string

-Conditional Statements

-Loops

-is, in, break, continue, pass

-List

-Tuples

-Sets

-Dictionary

-function and recursion

-File handling

Python for intermediates

-Methods of list, tuples

-Method of set and dictionary

-Method of string

-Lambda and some other functions

-Args and Kwargs

-Walrus operator

-Higher order function

-Function to variable

-Iterators

-List and Dictionary comprehensive

-main == \_\_name\_\_

-Zip function

Python for masters

Generators

Exception handling

Collection module

Itertools module

Decorators

Random module

Json module

Datetime module

Time module

Calendar module

Math module

Logging module

Os module

Object oriented python

Introduction, need of oop

Class and objects

Constructor

Encapsulation and private attributes

Getter and setter method

Reference variable

Self and object as an argument

Static attributes and static method

First practice set

1. WAP to print That’s his car ->

2. WAP to print Newton’s third law

3. WAP to print a multiple lines paragraph of a song

Second practice set

1. WAP to find the remainder when 90 is divided by 17

2. Check the type of variable assigned using input() function

3. Use comparison operator to find a=90 is greater than b=45

4. What is the output of following code:

A = input(“Enter first number:”)

B = input(“Enter second number:)

Print(“The sum is “,A+B)

5. Find the average of three numbers entered by the user

6. Print the square and cube of the number entered by user using concatenation of string

Third practice set

1. Find the greatest of three numbers

2. Take input of 5 subject marks in physics, chemistry, math, biology, computer and calculate total percentage and print the corresponding division/distinction

3. Check year is whether leap or not

4. Check whether the person can vote or not, criteria for voting are should be above 18, native to the country, should have citizenship card, should have voter card

5. Check whether the string is palindrome or not (use the concept of slicing)

Fourth practice set

1. Print the multiplication table of 12

2. WAP to check whether a number is prime or not

3. Calculate factorial of a number and sum to that natural number

4. Print the given pattern

//Programming \* \* \* \* \* \* \*

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//a

Fifth practice set

1. Write a program that stores the marks of student entered by the user in 5 subjects

2. Sum the marks received, calculate percentage and print it

3. WAP to count the no of ones in the given tuple

A = (1, 2, 1, 9, 1, 4, 3, 1, 1, 11)

Sixth practice set

1. WAP to input 8 numbers from the user and display all the unique numbers

2. What is the output of the following set ?

S = {1, “1”, 1.0}

Print(S)

3. Create empty dictionary with key = country and pair = capital and display it

4. What happens i) When two keys are same?

ii) When two pairs are same?

5. Can list be stored in a set?

Seventh practice set

1. WAP to find the sum and factorial of nth term using function

2. WAP to print multiplication table using function

3. WAP to find the sum and factorial of nth term using recursion

Eight practice set

1. WAP to read the text from a given file poem.txt and find out whether it contains the word twinkle

2. WAP to read the score from the highscore.txt and update it score > highscore

3. A file contains a sentence containing fool multiple times, rewrite the sentence when every fool word is replace by ####

Nineth practice set

1. Turn every item of the list into its square

2. Get the sum of square of n natural number stored in list

3. Create a tuple with only 1 element

4. Why tuple over list ?

5. WAP to add element to the tuple

6. Store list in tuple and tuple in list

7. WAP to check whether a element is present in tuple or not

8. WAP to reverse the tuple

Tenth practice set

1. WAP to add a key to a dictionary

2.  WAP to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x\*x).

3.  Write a Python program to print all unique values in a dictionary.  Sample Data : [{"V":"S001"}, {"V": "S002"}, {"VI": "S001"}, {"VI": "S005"}, {"VII":"S005"}, {"V":"S009"},{"VIII":"S007"}]

4.  Write a Python program to find the key of the maximum value in a dictionary

5. Write a Python program to combine two lists into a dictionary, where the elements of the first one serve as the keys and the elements of the second one serve as the values. The values of the first list need to be unique and hashable.

6. Write a Python program to invert a dictionary with unique hashable values,

values should be keys and keys should be values

Eleventh practice set

1. WAP to print the sum of two numbers in different formatting style.

2. Write a Python program to count the number of characters (character frequency) in a string and construct dictionary.

3. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.

4.  Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead.

5. Write a Python program to change a given string to a new string where the first and last chars have been exchanged.

6.  Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form.

7. Write a Python function to convert a given string to all uppercase if it contains at least 2 uppercase characters in the first 4 characters.

Twelfth practice set

1. Write a Python program to sort a list of tuples using Lambda.

2.  Write a Python program to sort a list of dictionaries using Lambda

3. Write a Python program to count the even, odd numbers in a given array of integers using Lambda.

4. Write a Python program to square and cube every number in a given list of integers using Lambda

5. Write a Python program to find if a given string starts with a given character using Lambda.

6. Write a Python program to rearrange positive and negative numbers in a given array using Lambda.

Thirteen practice set

1. compare the size of list iterable object and list iterator.

2. print the element of list using iter and next method.

3. check if the following are iterator or iterable :

List, tuple dictionary, set, a=2, range

4. create your own for loop.

5. create your own range function.

Fourteen practice set

1. Create a class which shows current date, time, calendar. You can use modules

2. create a new data type in python which is fraction(a/b) and basics operation should be perform.

3. Create a basic Library management system where student have to log in first and he can return, withdraw available books.

Nine practice set

1. WAP to illustrate the working program of banking system using class, the program must contain two class: user and bank, bank class is inherited from the user and contain all important function of bank whereas user detail should be in the user class

2. WAP to illustrate the working program of library management system using class, the program must contain two class: student and library, library class contains the important library functions like: display\_book, return\_book, lend\_book, updatebook whereas student class contain student profile, request\_book and return\_book

3. WAP of conversion calculator of binary, decimal, octal using class and object