Python Program Practical Report File – Term 1

Practical Report File covering Class XI Term 1 Python Programming curriculum.

TASK 01: WAPP to display Hello World! on the screen.

TASK 02: WAPP to demonstrate concatenation and repetition of strings.

TASK 03: WAPP to demonstrate floor division and modulus operators.

TASK 04: WAPP to read the age of a person and check whether the person can vote or not.

TASK 05: WAPP to calculate area of different geometrical figures based on User's Menu.

TASK 06: WAPP to solve a quadratic equation and also display the nature of roots.

TASK 07: WAPP to read a year and check whether the year is a Leap year or not.

TASK 08: WAPP to read 3 sides and angles of a triangle and display the Nature of triangle.

TASK 09: WAPP to demonstrate all methods applicable on strings.

TASK 10: WAPP to demonstrate all methods available in math module.

TASK 11: WAPP to demonstrate all methods available in random module.

TASK 12: WAPP to input annual income of a person and calculate the payable income tax based on the table given below:

New Income Tax Slabs & Rates : FY 2020-21 (AY 2021-22)	
Income Slabs	**Income Tax Rates**
Upto Rs. 2,50,000	Nil
Rs. 2,50,001 to Rs. 5,00,000	5%
Rs. 5,00,001 to Rs. 7,50,000	10%
Rs. 7,50,001 to Rs. 10,00,000	15%
Rs. 10,00,001 to Rs. 12,50,000	20%
Rs 12,50,001 to Rs 15,00,000	25%
Above Rs. 15,00,000	30%

Domestic Electricity LT Tariff Slabs and Rates for all states in India in 2019			
STATES	**UNITS**		**Rate Per Unit**
	From	**To**	
Delhi (As per tariff order dated 28th March 2018)	0	200	3
	201	400	4.5
	401	800	6.5
	801	1200	7
	1201	above	7.75

TASK 13: WAPP to input eclectic consumption (present reading – previous reading) of a house and calculate total electric bill based on the above table. (Note: Bill upto 200 units is ZERO.)

TASK 14: WAPP to input two natural numbers and display all the EVEN NUMBERS between those.

TASK 15: WAPP to input a natural number and display the MULTIPLICATION TABLE of that number.

TASK 16: WAPP to input a natural number N and display first N FIBONACCI numbers.

TASK 17: WAPP to input a natural number and display all the FACTORS of that number.

TASK 18: WAPP to input a natural number and display the SUM OF all its proper FACTORS.

TASK 19: WAPP to input a natural number and check whether the number is a PERFECT or not.

TASK 20: WAPP to input two natural numbers and check whether those numbers are AMICABLE or not.

TASK 21: WAPP to input a natural number and check whether the number is a PRIME or not.

TASK 22: WAPP to input a natural number N and display the first N PRIME numbers.

TASK 23: WAPP to input a number N and display all PRIME numbers less than equals to N.

TASK 24: WAPP to input a natural number N and display the sum of all PRIME numbers less than equals to that number N.

TASK 25: WAPP to input two natural numbers and calculate and display their HCF/GCD

TASK 26: WAPP to input two natural numbers and check whether they are CO-PRIME or not.

TASK 27: WAPP to input two natural numbers and calculate and display their LCM

TASK 28: WAPP to input a natural number and display the SUM OF all its DIGITS.

TASK 29: WAPP to input a natural number and check whether the number is a ARMSTRONG number or not.

TASK 30: WAPP to input a natural numbers and display the same but after REVERSING its digits.

TASK 31: WAPP to input a natural numbers and check whether the number is PALINDROMIC or not.

TASK 32: WAPP to input an amount of money and display MINIMUM CURRENCY NOTES (out of 2000/500/200/100/50/20/10/5/2/1) required to have that money.

TASK 33: WAPP to input 3 numbers and display those in ASCENDING/DESCENDING order.

TASK 34: WAPP to input a natural number N and calculate & display the FACTORIAL of N.

Write Python programs to input a floating number x and a natural number n and calculate and display the sum of the following series:

TASK 35: $1 \pm x + x2 \pm x3 + \ldots\ldots\ldots\ldots \pm x^{n}$

TASK 36: $1 + \frac{x}{1!} \frac{x2}{2!} + \frac{x3}{3!} + \quad + x^{n}$ [ex : exponential series]

TASK 37-A / 37-B: $1 \pm \frac{x^2}{2!} \frac{x^4}{4!} \pm \frac{x^6}{6!} + \quad \pm \frac{x^{2n}}{(2n)!}$ [cos(x) : cosine series]

TASK 38-A / 38-B: $x \pm \frac{x^3}{3!} + \frac{x^5}{5!} \pm \frac{x^7}{7!} + \quad \pm \frac{x^{2n+1}}{(2n+1)!}$ [sin(x) : sin series]

Write Python programs to input a natural number N (if N=4) and display the following PATTERNS:

TASK 39-A:
```
*
* *
* * *
* * * *
```

TASK 39-B:
```
1
1 2
1 2 3
1 2 3 4
```

TASK 40-A:
```
   *
  * * *
 * * * * *
* * * * * * *
```

TASK 40-B:
```
      1
    1 2 1
  1 2 3 2 1
1 2 3 4 3 2 1
```

TASK 41: WAPP to illustrate the difference between append() vs insert() methods and pop() vs remove() methods when applied on a Python LIST

TASK 42: WAPP to process menu based following operations on a Python LIST having numbers.

[Create / Append / Display / Search / Modify / Delete]

TASK 43: WAPP to read a LIST of numbers and illustrate a methods available in Statistics module.

TASK 44: Create a Python List ‘STACK’ storing names. Add a name at the end of the List ‘STACK’ [PUSH]. Remove a name from the end of the List ‘STACK’ [POP]. Display all names stored in the List ‘STACK’.

TASK 45: Create a Python List ‘ARR’ = [2,4,1,3,6,1,3,5,1,4] storing int type data. Count & Display the no. of even and odd integers stored in the List ‘ARR’. Display the Sum, Max, Min, Average of the no.s stored in the List ‘ARR’. In List ‘ARR’, increase all odd no.s by 1 & decrease all even no.s by 1. Create 2 lists ‘EVEN’ & ‘ODD’ storing even & odd no.s from the List ‘ARR’. Interchange 1st and 2nd elements, 3rd & 4th, 5th & 6th & so on.

Task 46: Create a Python Tuple ‘STACK’ storing names. Add a name at the end of the Tuple ‘STACK’ [PUSH]. Remove a name from the end of the Tuple ‘STACK’ [POP]. Display all names stored in the Tuple ‘STACK’.

Task 47: Create a Python Tuple ‘STACK’ storing numbers. Add a no at the TOP of the Tuple ‘STACK’ [i.e. at index 0] [PUSH]. Remove a no from the TOP of the Tuple ‘STACK’ [i.e. at index 0] [POP]. Display all numbers stored in the Tuple ‘STACK’.

Task 48: Create a Tuple ‘ARR’ = [2,4,1,3,6,1,3,5,1,4] storing int type data. Count & Display the number of even and odd integers sored in the Tuple ‘ARR’. Display the Sum, Max, Min, Average of the no.s stored in the Tuple ‘ARR’. In Tuple ‘ARR’, increase all odd no.s by 1 and decrease all even no.s by 1. Create 2 Tuples ‘EVEN’ & ‘ODD’ storing even and odd no.s from the Tuple ‘ARR’. Interchange 1st & 2nd elements, 3rd & 4th, 5th & 6th and so on.

Task 49: Create a Python Dictionary ‘RESULT’ storing RollNo (as Key) and Marks (as Values). Add a Student whose RollNo and Marks are entered by the user. Remove a Student whose RollNo is entered by the user. Display all students stored in the Dictionary ‘RESULT’. Display the average marks scored by all students.

Task 50: Create a Python Dictionary ‘DIRECTORY’ storing PhoneNo (as Key) and Name (as Values). Search for a person whose PhoneNo is entered by the user. Modify an item whose PhoneNo/Name is entered by the user.

Task 51: Read a sentence from the user. Count and Display the frequency of each characters in the sentence. Display total numbers of words. Display total numbers of digits. Display total numbers of alphabets, lower case alphabets and upper case alphabets. Display total numbers of Special Characters.

TASK 52: WAPP to read a string and display the following pattern if the string is 'INDIA'.

TASK 52-A:

```
I
I N
I N D
I N D I
I N D I A
```

TASK 52-B:

```
        I
      I N
    I N D
  I N D I
I N D I A
```

TASK 53: WAPP to read a name and display the. Initial as M.K.G,

TASK 54: WAPP to read a name and display the. Initial as M.K.Gandhi

TASK 55: WAPP to read a string and check whether the string is a PALINDROME or not.

TASK 56: WAPP to read a sentence and display the same by reversing characters of all words without changing the sequence of the words.

TASK 57: WAPP to read a sentence and check whether that sentence contains a word entered by the user..

TASK 58: WAPP to read a Python List having 10 Country names and display only those which are 6 or more characters long.

TASK 59: WAPP to read a List having 10 names and display only those which begin with vowels.

TASK 60: WAPP to read a List having 10 names and display only those which ends with consonants.

TASK 61: WAPP to process QUEUE (FIFO) operations on a Python LIST of names

Special Python Program (at least ONE):

TASK 62: Number Guessing Games [Dice]

TASK 63: Number Guessing Games [Bigger/Smaller]

TASK 64: Cross N Knot

TASK 65: Stone / Paper / Sizer

TASK 66: Quiz [Nested LIST]