__/__/____

Machine Learning with python.

→ what is programming ? -
it is a process of giving instruction to a Computer to perform a specific task or Solve problem

*) there are 3 Levels of programming

1) Low Level / Machine Level.
2) Assembly Level
3) High Level (C, C+ ....)

*) types of programming Language :-

1) procedural programming L:-
ex:- C, pascal - - - - -

2) object oriented programming :-
ex:- C++, Java, python

3) fuetional programming :-
ex:- haskell, Scala, python

4) Stuctural programming :-
ex :- C, python, pascal

5) Scripted programming :-
ex :- python, Java Script, Shell Script

6) Event driven programming :-
ex :- Java Script, C (GUI Apps)

*) Declarative programming :-

__/__/____

Libraries :- pandas
Numpy
Matplotlib
Plotly
Seaborn
Sklearn (Scikit Learn)

for data Science :-
All this with Tensorflow
Keras
pytorch

→ Comments :-

Comments are the part of programming but not a part of execution they are used to explain the flow of program writing.

* there are two types of Comments :-
1) Single Line Comments :- #
2) MultiLine Comments :- ''' ''' or """ """

→ first programm :-

```
print("Hello world")
```

o/p = Hello world

```
print("Good morning")
```

o/p = Good morning.

→ Input and output function :-

```
name = input("enter your name")        In = Prajwal
place = input("enter your city")       In = Sirsi
print("my name is", name, "My home town is", place)
```

o/p = Myname is prajwal, My ~~name~~ home town is Sirsi

or - the print can be writen in this formate also.

```
print("my name is {}, My home town is {}".
                    formate(name, place))
```

Same.

→ o/p =

→ Direct instalization :-

```
x = 12.
y = 15
print(x+y)      o/p = 27
```

→ Input

```
x = int(input("enter a number"))          In = 12.
y = int(input("enter the Second number")) In = 15.
print(y+x)
```

o/p = 27

__/__/__

→ if we dont use int in the numric input or addiation then the give input will add Side by Side.

Ex:- x = input("enter a number") In = 12
y = input("enter Second number") In = 15
print (x+y)

o/p 1215

→ print(Type()) = it is used to decler the data type of the give input.

→ Ex:- print(Type(x), Type(y))

o/p = <class 'str'> <class 'str'>

→ if we use the 'int' in the input question then

o/p = <class 'Int'> <class 'Int'>

__/__/____

→ Variables :-

it holds the value.

*) Valid variable declaration :-

n = 6

G1 = 6

num16 = 23

Student_id = 123

Student_name = "prajwal gk"

_Stu_name = "prajwal gk"

STU_NAME_ = "prajwal gk"

*) Invalid variable declaration :-

12num = 12 X

Stu name = "prajwal gk"

→ data type :-

Define about what kind of data it is.

*) Single valued variable :-

int

float

bool

Str

Complex

*) Multi valued variable :-

data Structures

List, Tuple, set, Dictonery

__/__/____

ex:- SQL, HTML, CSS

8) Concurrent / Parallel programming :-
ex:- Java, python.

→ what is python :-
python is a general purpose, interpreted, high level, object oriented, indented programming language

* features of python :-

*) open source
*) platform independed.
*) easy to learn (Simple Syntex)
*) high computation power.
*) Rich in libraries.
*) Dynamically typed.

→ Developer of python :-
"Guido vaan Rossum"
(Rossum)

Different python version

python 1 = 1989 / 1991 feb
python 2 = 2000 oct
python 3 = 2008 dec

__/__/____

→ Applications of python:-

*) Data Analysic
*) Data Science
*) AI
*) Web App development
*) Mobile App development
*) desktop App development
*) GUI development
*) Gamming App development
*) IOT
*) Graphics
*) Cyber Security ------ etc.

→ Python Syllabus for 'data Science' and 'Analysis':-

Introduction
Commands.
Variables.
Keywords.
Data types.
input/output function
Conditional & Statements.
Loops.
functions

Data Structure :- List
tuple
Set
Dictionary
file handling
error & exception handling.

__/__/____

→ work :-

write a program to Calculate the area of Circle & Square by taking input from user :-

code

```
Square = float (input("enter a number"))        In = 10
Circle = float (input("enter the radius"))      In = 10
area_Square = Square * Square.
area_Circle = 3.142 * Circle ** 2
print (area_Square)
print (area_Circle)
```

o/p = 100 (area_Square)
314.2 (area_Circle)

→ work :-

write a program to read the details of student id, name, email, 3 subject marks out of 100 Calculate total marks & percentage., print all details.

```
Stu_id = input ("enter Student id")              In = 452
name = str(input ("enter Student name"))         In = Prajwal g k
email = input ("enter Student email"))           In = prajwalgk2307@
Subject 1 = int(input("enter kannada Marks:"))   In = 89
Subject 2 = int(input("enter Maths Marks"))      In = 76
Subject 3 = int(input("enter Science Marks"))    In = 79
total = Subject 1 + Subject 2 + Subject 3
percentage = Total / 300 * 100
print (f"id = {Stu_id} \n name = {name} \n email id = {email} \n
    kannada Marks = {Subject 1} \n Science Maths Marks = {Subject 2} \n
    Science Marks = {Subject 3} \n total Marks = {total} \n
    your percentage = {percentage}")
```

__/__/__

o/p = id = 452.
name = prajwal gk.
email id = prajwalgk2307@gmail.com
Kannada Marks = 89
Maths Marks = 76
Science Marks = 79
total Marks = 244
your percentage is 81.333.

→ Work :-

write a program to Calculate the final amount based on given invested principle amount rate of intrest & period of time & display the detail properly :-

```
principle = int(input("enter the invest amount"))   In = 1000
interest = float(input("enter the Rate of Intrest")) In = 10.0
time = int(input("enter the number of years"))       In = 10
main_principle = principle * Time
Simple_intrest = principle * intrest * Time / 100
final_amount = main_principle + Simple_Intrest
print(f"Amount Invested = {principle}\n Rate_of_Intrest = {Intrest}\n
    period_of_Time = {Time}\n Total_invested = {Main_principle}\n
    Total_Intrest = {Simple_Intrest}\n Total Amount = {finalAmount}
```

Amount Invested = 1000 (monthly yearly)

o/p: Amount Rate of Intrest = 10.0
period of Time = 10
Total Invested = 10000
Total Intrest = 1000
Total Amount = 11000.0