H/w
I.M

What is python ?
Python is a high-level, interpreted, interactive and obeject-oriented Scripting, programming language. [Dynamically - typed, Readable, Versatile]

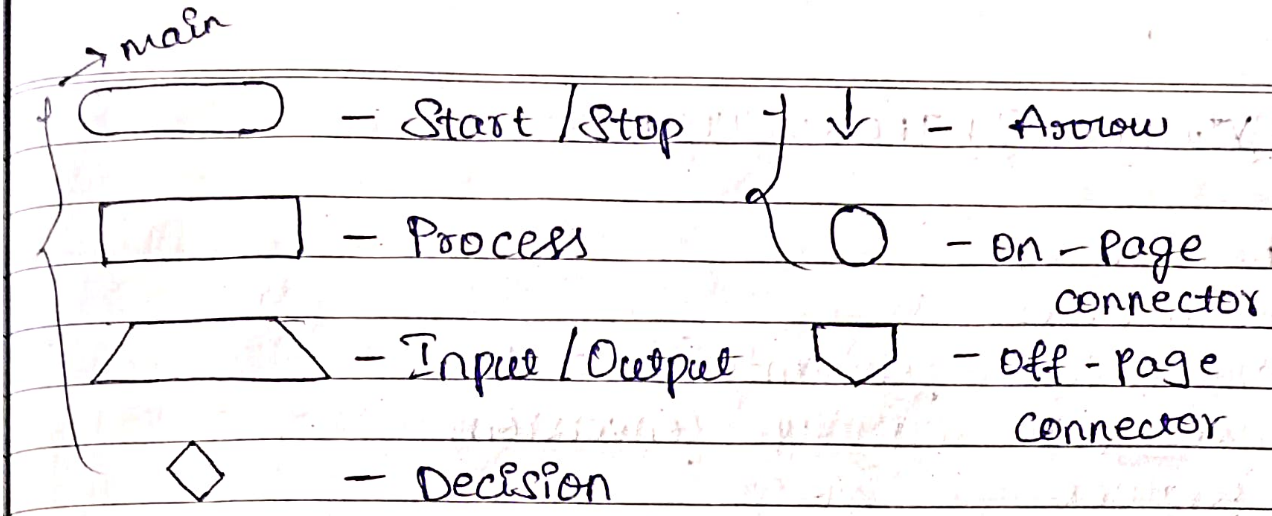
Application :-
It is used for :-
* Web development (Server-Side)
* Software development
* Machine Learning
* So on.......

Why Python ?
* Python has a Simple Syntax
- Software Development, Web Development & ML
- So many projects can be built

⇒ Print (" Hello World ")

⇒ What is programming ?
Programming is the process of writing a set of instructions, or code, that tells a computer what tasks to perform.

⇒ Flowcharts and Algorithms
✓ ⇒ 1. Flowcharts [Flowchart is a diagrammatic representation of sequence of logical steps of a program.]
✓ ⇒ 2. Algorithms
⇒ 3. Pseudocode
* ⇒ 4. Time and Space Complexity.



Area of a Rectangle

⇒ My Approach for getting idea:
INPUT → PROCESS → OUTPUT Strategy } 3-parts

⇒ Algorithms :

Algorithms is a Step-by-step procedure which defines a set of instructions to be executed in a certain order to get the desired output.

⇒ PYTHON INTRODUCTION :-

1. Keywords
2. Identifiers
3. Variables, Constants, Literals
4. Datatypes and Type Conversions
5. Operators
6. Comments

⇒ What you will learn ?

```
            a = 100              Literal
          int  a = 100 ;
Datatype       → Variable , identifer
```

⇒ 1. **KEYWORDS** :- Keywords in python are reserved words that have specific, predefined meanings and purposes within the language.

Ex :- if, def, else, for, True, False, ...etc

* We cannot use a keyword as a variable name, function name, or any other identifier.

⇒ 2. **IDENTIFIERS** :- Identifiers are the name given to variables, classes, methods, etc.

- Variable Identifiers

Ex :-
```
age = 25
name = "John"
Count = 0
```

⇒ 3. **VARIABLES** :- In programming, a variable is a container (storage area) to hold data.

Same ex

variable

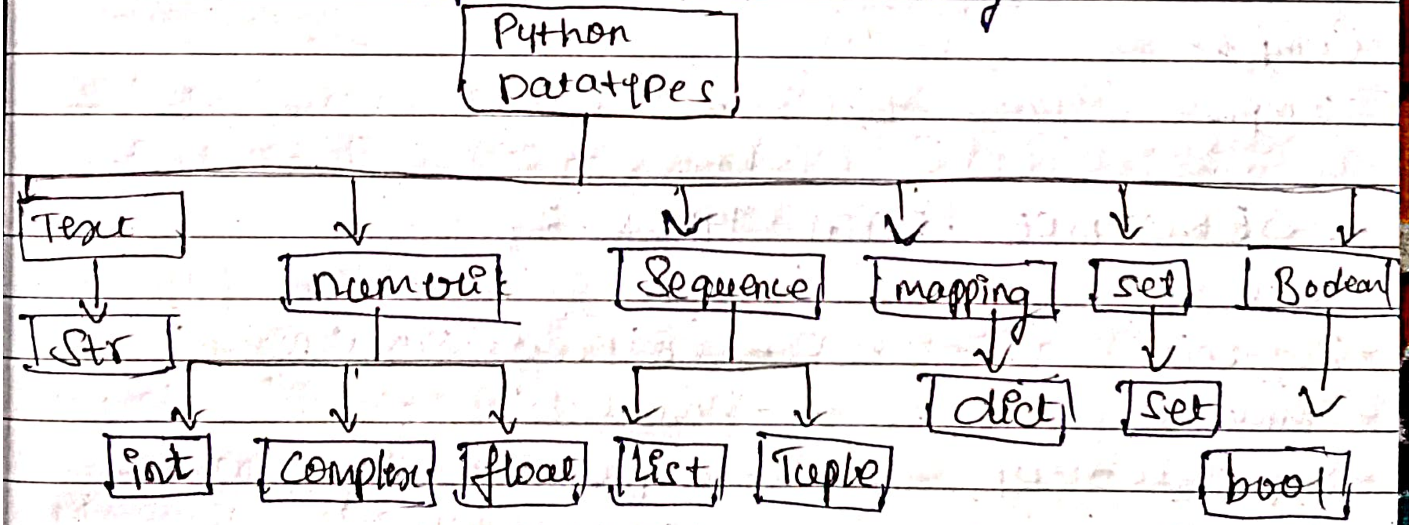
Ex :- int x → 22
String my_str → "hi"
float y → 2.275

Types of Literals

⇒ 4. Literals : Literals are representations of fixed values in a program. They can be numbers, characters, or strings etc.

Types :-

1. Numeric Literals
2. String Literals
3. Boolean -11-
4. None -11-
5. Bytes and Bytearray -11-
6. Raw String -11-
7. Numeric Separator -11-
8. Collection -11-
9. - List, Tuple, Set, Dictionary



⇒ Constants : A Constants is a Special type of variable whose value cannot be changed.

1. TEXT DATA TYPE :

STRING :

Str represents strings of characters, enclosed in single, double, or triple quotes.

Ex :- 'hello'
"world"
"""hello world"""

2. NUMERIC DATA TYPES :

INT

Represents integer values

Ex:- (1, -10, 100)

Float

Represents floating point or decimal values

Ex:- (3.14, -2.5)

Complex

Complex values ex (3.14j, 1-2i)

3. SEQUENCE DATA TYPES :

Tuple	List
- Ordered	- Ordered
- immutable	- mutable
- Separated by commas	- Separated by commas
- enclosed in parenthess	- enclosed in square brackets
Ex: (1, 2, 3)	Ex: [1, 2, 3]

4. MAPPING DATA TYPES :

dict

Represents unordered collections of key-Value pairs, enclosed in curly braces.

Ex: { 'name': 'John', 'age': 30 }....

5. SET DATA TYPES :

Set

Represents unordered collections of unique elements, enclosed in curly braces

Ex :- { 1, 2, 3 }

6. BOOLEAN DATA TYPES :

bool

bool represents boolean values, which can be either True or False. Often used for logical operations and control flow.

Ex: True , False.

7. NONE DATA TYPES :

None

Represents a Special object that indicates the absence of a value or a "null" value.

⇒ 4. TYPE CONVERSIONS : In programming, type Conversion is the process of converting data of one type to another.

For Ex : Converting int data to Str.

⇒ Built-in type conversion functions :

- int() : Converts to an integer
- float () : Converts to a floating-point number.
- str() : Converts to a string
- bool() : Converts to a boolean
- list () : Converts to a list
- tuple() : Converts to a tuple
- set() : Converts to a set
- dict () : Converts to a dictionary.
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