**LIST**

* List in python can be changed, and it stores the data of various different datatypes
* It is changeable (mutable).
* list1 = [9 , 4 ,["apple , banana", "i love you"]]
* print(list1[1])

**TUPPLE**

* List in python cannot be changed
* It cannot be changeable (immutable).

tuple1 = ("loin", ("tiger , banana"),("bear , fox"))

print(tuple1)

**Dictionary**

Collection of Key Value Pairs.

dict1 ={"name":"fahad", "age":22 ,"canVote":True}

print(dict1["name"])

* python mein har cheez ek object hota hai like OOP mein class wagera jo hoti hain wo

**TypeCasting**

A= 10

B = "20"

print(int(A)+int(B))

**Len()**

child="shahmeer son of, fahad"

length= len(child)

print(length)

print(child[0:8])

**Len() with 0 : -3**

print(child[:-7])

**Upper & Lower case**

mothername = "Lutfia"

print("length of mother name is ",len(mothername))

print("length of mother name in lower case ", mothername.lower())

print("length of mother name in upper case ", mothername.upper())

**.rstrip()**

* Remove the repated last values

brother = "!!khizar !!!!!!!!!!!"

print(brother)

print(brother.rstrip("!"))

**.split()**

* Changes the string into List
* print(brother.split(" "))

**.endswith()**

print(brother.endswith("!!!!!"))

str1 = "welcome to fahad are you fine? "

print(str1.endswith("to",4 ,10))

**.find()**

Gives the first occurance of a letter in a string

print(str1.find("o"))

**.index()**

Raised the error , that the substring not found

#index()

print(str1.index("lo"))

**. isalpha & isalnum()**

1. Isalnum Returns true only when A-Z , a-z , 0-9 are present in a string , otherwise gives false
2. Isalpha Returns true only when A-Z , a-z are present in a string , otherwise gives false
3. They both gives true when there is no gap in the string

.

str2  = "MuhammadFahad"

print(str2.isalnum())

str3 = "MyBikewasStolenByTheft"

print(str3.isalpha())

.**swapcase()**

Turns the lower case into upper case

* Python is a dynamic language, it prompts an error when given print(“2”+1) it prompts typed error.

Python implicitly converts data types into meaningful datatype.

* + - In JS due to weak typed language where as in JavaScript it will convert both into strings and gives the answer as 21 by converting the integer 1 into string then add both.
* Static data type are checked before the execution.
* Dynamic data type are check during the execution.

Django:

* Static web and dynamic web banata hai
* Static se sirf prh skty hai like Wikipedia (can be made only by using HTML CSS)
* Dynamic mein functions perform kr skty hain like signup pages , youtube (API , backend)
* Django is better then flask because it bears the load of higher application and is fast then flask.
* frame work helps to enhance the filing of the documents ,
* Django ka architectural patteren MVT hai.
* M means model -> mein har tareeeqy ka database kaam hoga
* V view -> mein har trh ka logic hoti hai
* T Template -> mein saara HTML , CSS
* Django mein HTML se pehly % use krty hain
* Django apna default server deta hai , wahan sab dekh skty hain models wagera sahi horha hai
* Django Restful API use krta hai
* API -> end point button mein hai and Wo api urls ka request lekr aya hai ussy views.py pr connect krdeyga. Then Django ki https library k thorough browser ko bhej dega.
* http response ek library hai jis k through backend se front end pr aati hai
* Rest API python mein dic ki trh data send krti hai
* APP in Django have models, urls.py , views , templates
* CSRF Cross-Site Request Forgery (CSRF) is an attack that forces authenticated users to submit a request to a Web application against which they are currently authenticated.
* DRF (Django rest framework) rest framework hai , uss mein alag se API bana skty hain.
* API (Application Programing Interface)
* Django-admin startproject <project name>
* Python manage.py startapp <app name>
* Server ko start krny k liye command “python manage.py runserver”

**Backend:**

* + - Javascript use hoti inner html page mein at a time functionalities k liye use hoti hai.
    - Node JS backend
    - Express JS backend
    - React JS Frontend
    - Vue JS frontend
    - Next JS frontend

**Database:**

**1. Relational**

* MYsql
* Row and column ki form mein store krta hai
* Structured data ko store krta hai efeective way mein
* Name , enrolment , roll num
* Hospital db , car db , office db
* Iski language sql hoti hai

**2. Non Relational**

* Mongo DB
* Python dictionary ki form mein save krta hai in a form of document
* Structured as well as un structured data ko rkhbleta hai
* But is mostly used for unstructured DB
* Non structured = “song , images , dataset ”
* Iski language mql hoti hai

**OOP:**

* Object oriented programing
* Real life problem ko solve krna programing k phase mein
* Python , php , java , javascript , C , C# , C++
* Class , object
* inheritance
* polymosphism
* data abstracion
* encapsulation

**Object** -> attributes and member function object mein aatey hain

* Class Hamza

Hamza ki age , job , address ye sab attributes hain

Hamza koi bhi action perform kryga functions isko hum member function kahengy

**Object ->** obj ko hum create baad mein krty hain , class batati hai k object k attributes

Ek class k zariye multiple objects bana skty hain , but ek objects se multiple class nahin bana skty

**Inheritance ->**

Parent class se attributes share krty hain child class mein

**Constructor ->** object ko banaty hain to ye hamarey data member OR attribute and member function ko object mein pass krta hai

**Destructor ->** garbage collector speed slow hojaati ussy clear krta hai

**Data Encapsulation**

Binding of code and data together in a single unit is known as encapsulation

* OOP mein ek class data and member functions ko bind krta hai and bahir k interference se safe rkhta hai
* Encapsulation mein ek class ka data doosri class k data se chupa rehta hai , issy hum data hiding bhi kehty hain.
* Access specifiers are :
* Private (class k data member private hotey hain taa k doosri class unhain accesss nahin kr sky)
* Public (class k member function publically visible hotey har class k liye taa k in se functionality use ki jaaye)
* protected

E.g. Bank detail

**Abstraction**

Normal world mein jese hum mobile & camera use krty hain , in mein internally kiya horha hai iska hamain nahin pata hota , same as abstraction ismein jo member function hotey wo hum use tou krlety hain but inki logic nahin pata krskty , jo non essential and complex features hain ussy hum hide krskty hain.

**Inheritance**

Ismein parents child ka relation hota hai , parents ki class k data members and member functions child bhi use krskta hai , is se code reusability brh jaati hai ,

One object acquires the properties and behaviors of a parent object.

**Polymorphism**

* Polymorphism Means having many forms
* Jesa k insssano k alag alag blood groups hotey hain like (A, O , B , AB)
* We achieve polymorphism by using:

**1. Method Overloading**

**2. Method Overriding**

**1. Method Overloading:**

Method overloading is a feature in Java that allows a programmer to define multiple methods in a class with the same name, but with different parameters

e.g:

findArea(int radius) ----------------------🡪 for circle

findArea(int length,int breadth) ----------------------🡪 for Rectangle

**2. Method OverRiding:**

Parent class k member function ko child class reuse bhi krskyi hai and ushi name ka member OWN function bhi bana skti hai through the concept of polymorphism.

**Odoo:**

* ODOO stands for On Demand Open Object. , issy pehly OPEN ERP(Enterprise resource planning) kaha jaata tha
* Used to grow business
* Business accounting
* Business resources
* ODOO Business management platform hai jo business ko apny operations ziyada behtar tareeqy se krny mein help krta hai
* Ye ensure krna k data different groups mein securely share kiya gaya hai
* 2M se ziyada users hain iss k
* Startup companies hon ya large enterprises sab hi iska use krty hain
* Odoo uses the programming language python mainly, and xml for views related things and js for dynamic things.
* Ye open source hota hai issy koi bhi use krskta hai
* Iska use organizations apna day to day business activities ko manage krny k liye use krti hain like : Acounting ,Project Management , Risk management
* ODDO CRM(Customer relationship management) , Sales Management , E-commerce , WareHouse Management , Purchase Management ka large collection hai
* Odoo k pass is k app store mein 14k se ziyada 3rd party apps ya plugins Available hain
* ODOO ek fully integrated customized and open source business management software hai
* Organization ko apny har dept ko ek jagah se manage krny ki facility deta hai