## Python 1st code

• LETS WORK WITH NUMBER

```
In [1]: 10+5
 Out[1]: 15
 In [2]: 10-5
 Out[2]: 5
 In [3]: 10*5
 Out[3]: 50
 In [4]: 10/5
 Out[4]: 2.0
 In [5]: 10//5
 Out[5]: 2
 In [6]: 5+(5*5)
 Out[6]: 30
 In [7]: (5+5)*5
 Out[7]: 50
 In [8]: _ + 3
 Out[8]: 53
 In [9]: import sys
         sys.version
 Out[9]: '3.12.7 | packaged by Anaconda, Inc. | (main, Oct 4 2024, 13:17:27) [MSC v.1929 6
         4 bit (AMD64)]'
In [10]: 1+1
         2+1
         3+1
Out[10]: 4
```

```
In [11]: print(1+1)
          print(1+2)
          print(1+3)
        3
        4
In [12]: a=10
          b=20
          c=a+b
          print(c)
        30
In [13]: print(a)
          print(b)
          print(c)
        10
        20
        30
In [14]: num1=20
          num2=30
          add=num1+num2
          print(add)
         #print('the addition of ',num1,'and',num2,'is=',add)
        50
In [15]: num1=20
          num2=30
          add=num1+num2
          print('the addition of--',num1,'and',num2,'is==',add)
        the addition of-- 20 and 30 is== 50
In [16]: 22nd oct
          Cell In[16], line 1
            22nd oct
        SyntaxError: invalid decimal literal
          python variable concept=pythonidentifier concept .syntax of define variable //(variable
          name=variable value)// (identifier=value)
 In [ ]: NIT=15
          NIT
 In [ ]: NIT=20
```

```
NIT
In [ ]: V=15
In [ ]: print(V)
        print(NIT)
In [ ]: NIT
In [ ]: Nit
In [ ]: v
In [ ]: V
In [ ]: 1var=20
        1var
In [ ]: var$=56
        var$
In [ ]: var=67
        var
In [ ]: x_train, x_test=80,20
        print(x_train)
        print(x_test)
In [ ]: a,b,c,d=10,20,30,40
        print(a)
        print(b)
        print(c)
        print(d)
In [ ]: 'e'=45
In [ ]: aaaaaaaaaaaaaaa=78
In [ ]: ABC=100
        abc
In [ ]: nit_=50
        nit_
        python identifier is completed
In [ ]: | 1nit=20
        1nit
```

```
In [ ]: python identifier completed
        *******TYPE CASTING************************* Type casting-converting each og data type to
        other data types Integer-covert
In [ ]: 1.Integer-converts float, boolean, and string, (only if string is a number) to but d
        (if string is word it doesnot accept)and compare
        2.Float -converts int, string (only if string is a number) and boolean, but
        3.Boolean-converts into all data types
        4.Complex-converts into int, float, boolean, and string (only if string is a number
        5.String -converts into all data types
In [ ]: 1.INTEGER-Other data types to int
In [ ]: int(5.3) #float to int
In [ ]: int(True)
In [ ]: int('NIT')
                       #string to int doesnot work
In [ ]: int('10')
                       #complex to int does not work
In [ ]:
        int(20+30j)
In [ ]: 2.FLOAT -Converting other data types to float
In [ ]: float(5)
In [ ]: float(True)
In [ ]: float('NIT')
                        # string to float doesnot work
In [ ]:
       float('10.6')
In [ ]: float(10+20j) #cmplex to float does not work
In [ ]: 3.BOOLEAN-Converting other data types
In [ ]: a.bool()-False
        a.bool of non zero is True
In [ ]: |bool(1)
In [ ]: bool(0) #int to bool
In [ ]: bool()
```

```
bool(1.5)
In [ ]:
In [ ]: bool('NIT')
In [ ]: bool(10+20j) #complex to bool
In [ ]: 4.COMPLEX
        a.In complex first value is taken as a and 2nd value as b
        complex(1)
In [ ]:
In [ ]:
        complex(2.5)
In [ ]: complex(True,False) #boolean to complex
        complex(False)
In [ ]:
        complex(4,2.3)
In [ ]:
        complex ('NIT')
In [ ]:
In [ ]:
        complex('10')
       5.STRING
In [ ]:
In [ ]:
       str(1)
In [ ]:
        str(3.5)
In [ ]:
        str(True)
In [ ]: str(10+20j)
        PYTHON DATA STRUCTURES
In [ ]:
In [ ]: 1.LIST
In [ ]: list=[]
        list
In [ ]: print(type(list))
In []: |list1=[10,20,30]
        list1 #list is an integer
In [ ]: list2=[10,73,30,66,60,76]
        list2
```

```
In [ ]: list3=['one','two','three']
        list3 # list of strings
In [ ]: list4=['Asif',25,[54,86],[150,90]]
        list4 #nested lists
In [ ]: list5=[100, 'Asif', 17.59]
        list5 #list of mixed data type
In [ ]: list6=['Asif',25,[50,100],[150,90],{'john','david'}]
        list6
In [ ]: len(list6)
In [ ]: |list2
In [ ]: LIST INDEXING
In [ ]: |list2[0]
In [ ]: list3[0]
In [ ]: |list3[0][0]
In [ ]: |list3[-1]
In [ ]: list4[-1]
In [ ]: LIST SLICING
In [ ]: mylist=['one','two','three','four','five','six','seven','eight']
        mylist
In [ ]: mylist[0:3]
In [ ]: mylist[2:5]
In [ ]: mylist[:2]
In [ ]: mylist[-3:]
In [ ]: mylist[-2:]
In [ ]: mylist[-1]
In [ ]: mylist[:]
In [ ]: ADD, REMOVE&CHANGES ITEMS
```

```
In [ ]: mylist
In [ ]: mylist.append('nine')
        mylist
In [ ]: mylist.remove('nine')
        mylist
In [ ]: mylist.insert(1, 'one')
        mylist
In [ ]: mylist.remove('one')
        mylist
In [ ]: mylist.pop()
        mylist
In [ ]: mylist.pop(7)
        mylist
In [ ]: del mylist[5]
        mylist
In [ ]: mylist[0]=1
        mylist[1]=2
        mylist[2]=3
        mylist
In [ ]: mylist.clear()
        mylist
In [ ]: COPYLIST
In [ ]: mylist=['one','two','threee','four','five','six','seven','eight','nine']
        mylist
In [ ]: mylist1=mylist
In [ ]: id(mylist),id(mylist1)
In [ ]: mylist2=mylist.copy()
In [ ]:
        id(mylist2)
In [ ]: mylist[0]=1
In [ ]: mylist
In [ ]: mylist1
```

```
In [ ]: mylist2
                   JOIN LISTS
In [ ]:
In [ ]: list1=['one','two','three','four']
        list1
In [ ]: list2=['five','six','seven','eight']
        list2
In [ ]: list1.extend(list2)
        list1
In [ ]: LIST MEMBERSHIP
        list1
In [ ]:
        'one'in list1
In [ ]:
        'ten' in list1
In [ ]:
In [ ]: if 'three' in list1:
            print('three is present in the list')
            print('three is not present in the list')
In [ ]: if'eleven' in list1:
            print('eleven is present in the list')
        else:
            print('eleven is present in the list')
In [ ]: REVERSE AND SORT LIST
In [ ]: | list1
In [ ]: list1.reverse()
        list1
In [ ]: mylist3=[9,5,2,99,12,88,34]
        mylist3.sort()
In [ ]: mylist3
In [ ]: mylist3=[9,5,2,99,12,88,34]
        mylist3.sort(reverse=True)
        mylist3
```

```
In [ ]: mylist4=[88,65,33,21,11,98]
        sorted(mylist4)
In [ ]: mylist4
In [ ]: loop through a list
In [ ]: | list1
In [ ]: for i in list1:
            print(i)
In [ ]: for i in enumerate (list1):
            print(i)
In [ ]: list10=['one','two','three','four','one','one','two','three']
        list10
In [ ]: list10.count('one')
In [ ]: list10.count('two')
In [ ]: All/Any
In [ ]: | 11=[1,2,3,4,0]
        11
In [ ]: all(l1)
In [ ]: any(11)
In [ ]: 12=[1,2,3,4,True,False]
In [ ]: all(12)
In [ ]: any(12)
In [ ]: 2.TUPLE
        tup1=() # empty tuple
In [ ]: tup2=(10,20,30)
        tup2 # tuple of integer number
In [ ]: tup3=(10.5,23.5,30.5)
        tup3 # tuple of float number
In [ ]: tup4=('one','two','three')
        tup4
```

```
In [ ]: tup5=('Asif',24,(50,100),(150,90))
        tup5 # nested tuple
In [ ]: tup6=(200, 'Asif', 17.98)
              # tup with mixed data type
        tup6
In [ ]: | tup7=('Asif',35,[50,100],[150,100],{'John','David'},(99,22,33))
        tup7
In [ ]: len(tup7)
In [ ]: Tuple indexing
In [ ]: tup2[0]
In [ ]:
       tup4[0]
In [ ]: tup4[-1]
In [ ]: tup5[-1]
In [ ]: Tuple slicing
In [ ]: mytuple=('one','two','three','four','five','six','seven','eight')
        mytuple
In [ ]: mytuple[0:3]
In [ ]: mytuple[2:5]
In [ ]: mytuple[:3]
In [ ]: mytuple[:2]
        mytuple[-3:]
In [ ]: mytuple[-2:]
In [ ]: mytuple[-1:]
In [ ]: mytuple[:]
In [ ]: mytuple
        Remove&change items
In [ ]:
In [ ]: mytuple
```

```
In []: del mytuple[0] # tuple are immutable which means we can't delete tuple items
In [ ]: mytuple[0]=1 #tuple are immutable which means we can't change tuple items
In [ ]: del mytuple #Deleting entire tuple object is possible
In [ ]: loop through a tuple
In [ ]: for i in mytuple:
            print(i)
In [ ]: mytuple
In [ ]: for i in enumerate (mytuple):
            print(i)
In [ ]: Tuple membership
In [ ]: mytuple
In [ ]: 'one' in mytuple # check if 'one' exist in the list
In [ ]: 'ten' in mytuple
                          #check if 'ten' exists in the list
In [ ]: if 'three' in mytuple: #check if 'three' exists in the tuple
            print('three is present in the tuple.')
        else:
            print('three is not present in the tuple.')
In [ ]: if 'eleven' in mytuple:
            print('Eleven is present in the mytuple.')
            print('Eleven is not present in mytuple.')
In [ ]: index position
In [ ]: mytuple
In [ ]: mytuple.index('one') #index of first element equal to 'one'
In [ ]: mytuple.index('five')
In [ ]: mytuple1=('one','two','three','four','one','one','two','three')
In [ ]: mytuple1
In [ ]: mytuple1.index('three')
In [ ]: mytuple.index('three') #repetation of element in tuple, index always print
```

```
Sorting
In [ ]:
In [ ]: mytuple2=(789,89,2,35,789,10,40)
        mytuple2
In [ ]: sorted(mytuple2)
In [ ]: sorted(mytuple2, reverse=True)
In [ ]:
        Tuple count
In [ ]:
        mytuple1
In [ ]: mytuple1.count('one')
In [ ]: mytuple1.count('two')
In [ ]: mytuple.count('three')
        mytuple.count('four')
In [ ]:
In [ ]:
        3.SET
In [ ]: myset={1,2,3,4,5}
        myset
        len(myset)
In [ ]: myset={1,1,2,2,3,4,5,5}
        myset
In [ ]: myset1={1.79,2.8,3.99,4.56,5.45}
        myset1
In [ ]: myset2={'ASIF','JOHN','TYRION'}
        myset2
In [ ]: myset3={10,20,"Hola",[11,22,32]}
        myset3
In [ ]: myset4=set()
        print(type(myset4))
In [ ]: myset5=set(('one','two','three','four'))
        myset5
In [ ]: myset={'one','two','three','four','six','seven','eight'}
        myset
```

```
In [ ]: for i in myset:
            print(i)
In [ ]: for i in enumerate (myset):
            print(i)
In [ ]: set membership
In [ ]: myset
        'one' in myset
In [ ]:
        'ten' in myset
In [ ]:
In [ ]: if 'three'in myset:
            print('three is present in the set')
            print('three is not present in the set')
In [ ]: if 'eleven'in myset:
            print('eleven is present in the set')
        else:
            print('eleven is not present in the set')
In [ ]: add &remove items
In [ ]: myset={'eight','four','one','seven','six','three','two'}
        myset
In [ ]: myset.add('NINE')
        myset
In [ ]: myset.update(['TEN''ELEVEN','TWELVE'])
        myset
In [ ]: myset.remove('NINE')
        myset
In [ ]: myset.discard('ten')
        myset
In [ ]: myset.clear()
In [ ]: myset
In [ ]: del myset
In [ ]: myset
```

```
In [ ]: copy set
In [ ]: myset= {'one','two','three','four','five','six','seven','eight'}
        myset
In [ ]: myset1=myset
In [ ]: myset1
In [ ]: id(myset1),id(myset)
In [ ]: myset2=myset.copy()
In [ ]: myset2
In [ ]: id(myset2)
In [ ]: myset.add('nine')
        myset
In [ ]: myset1
In [ ]: myset2
In [ ]: set operation
In [ ]: a={1,2,3,4,5}
        b={4,5,6,7,8}
        c = \{8, 9, 10\}
In [ ]: a b
In [ ]: a.union(b)
In [ ]: a.union(b,c)
In [ ]: a.update(b,c)
In [ ]: a
In [ ]: a=\{1,2,3,4,5\}
        b={4,5,6,7,8}
In [ ]: a&b
In [ ]: a.intersection(b)
In [ ]: a.intersection_update(b)
```

```
In [ ]: a
In [ ]: a={1,2,3,4,5}
        b={4,5,6,7,8}
In [ ]: a-b
In [ ]: a.difference(b)
In [ ]: b.difference(a)
In [ ]: b.difference_update(a)
In [ ]: b
In [ ]: a={1,2,3,4,5}
        b={4,5,6,7,8}
In [ ]: a^b
In [ ]: a.symmetric_difference(b)
In [ ]: a.symmetric_difference_update(b)
In [ ]: a
In [ ]: a={1,2,3,4,5,6,7,8,9}
        b={3,4,5,6,7,8}
        c=\{10,20,30,40\}
In [ ]: b.issubset(a)
In [ ]: b.issuperset(a)
In [ ]: a.issuperset(b)
In [ ]: a.isdisjoint(b)
In [ ]: a.isdisjoint(c)
In [ ]: b.isdisjoint(c)
In [ ]: other built in function
In [ ]: a
In [ ]: sum(a)
```

```
In [ ]: max(a)
In [ ]: min(a)
In [ ]: list(enumerate(a))
In [ ]: d=sorted(a,reverse=True)
In [ ]: sorted(a)
In [ ]: sorted(d)
In [ ]: 4.dictionary
In [ ]: d=dict()
In [ ]: print(type(d))
In [ ]: d={}
In [ ]: d={1:'one',2:'two',3:'three'}
In [ ]: d=dict({1:one',2:'two',3:'three')}
In [ ]: d
In [ ]: d1={'A':'one', 'B':'two', 'C':'three'}
In [ ]: d2={1:'one','A':'two',3:'three'}
In [ ]: d2.keys()
In [ ]: d2.values()
In [ ]: d2.items()
In [ ]: d4={1:'one',2:'two','A':['asif','john','Maria'],'B':('Bat','Cat','hat')}
In [ ]: keys={'a','b','c','d'}
        d5=dict.fromkeys(keys)
        d5
```

```
In [ ]: keys={'a','b','c','d'}
        values=10
        d6=dict.fromkeys(keys, values)
        d6
In [ ]: keys={'a','b','c','d'}
        value=[10,20,30]
        d6=dict.fromkeys(keys,value)
In [ ]: value.append(40)
In [ ]: Accessing items
In [ ]: d1
        d1['A']
In [ ]:
In [ ]: d1.get('A')
In [ ]: d7={'Name':'Asif','ID':74123,'DOB':1991,'job':'Analyst'}
In [ ]: d7['Name']
In [ ]: d7.get('job')
In [ ]: add,remove&change items
In [ ]:
       d7
In [ ]: d7['DOB']=1992
        d7['job']='developer'
        d7
In [ ]: d8={'D0b':1995}
        d7.update(d8)
In [ ]: d7['Address']='hyderabad'
In [ ]: d7.pop('job')
In [ ]: del[d7['Address']]
In [ ]: d7
```

```
In [ ]: d7.clear()
In [ ]: del d7
In [ ]: copy dictionary
In [ ]: d7={'Name':'Asif','ID':74123,'DOB':1991,'job':'Analyst'}
In [ ]: d8=d7
In [ ]: id(d7),id(d8)
In [ ]: d9=d7.copy()
In [ ]: d9
In [ ]: id(d9)
In [ ]: d7['job']='developer'
        d7
In [ ]: d8
In [ ]: d9
In [ ]: loop through dictionary
In [ ]: d8={'Name':'Asif','ID':74123,'DOB':1991,'job':'developer'}
In [ ]: for i in d8:
            print(d8)
In [ ]: for i in d8:
            print(d8[i])
In [ ]: for i in d8:
            print(i,':',d8[i])
In [ ]: Dictionary membership
In [ ]: d7
In [ ]:
        'Name' in d7
In [ ]: 'Asif' in d7
```

```
'ID' in d7
In [ ]:
         'Address' in d7
In [ ]: Any&All
In [ ]:
        d7
In [ ]: d7[0]='mark'
        d7
In [ ]:
        any(d7)
In [ ]: all(d7)
In [ ]: 4 types of data structures completed
In [ ]: STRING
        Escape character
In [2]: print("Hello there!\nHow are you?\nI\'m doing fine.")
       Hello there!
       How are you?
       I'm doing fine.
In [ ]: row string
In [3]: print(r"Hello there!\nHow are you?\'m doing fine.")
       Hello there!\nHow are you?\'m doing fine.
In [ ]: multiline string
In [4]: print(
            """ Dear Alice,
            Eve's cat has been arrested for catnapping,
             cat burglary, and extoration.
            scicerely,
            Bob"""
        Dear Alice,
           Eve's cat has been arrested for catnapping,
            cat burglary, and extoration.
           scicerely,
           Bob
In [ ]: indexing&slicing
```

```
In [5]: spam='Hello world!'
 In [6]: spam
 Out[6]: 'Hello world!'
 In [7]: spam[0]
 Out[7]: 'H'
 In [8]: spam[4]
 Out[8]: 'o'
 In [9]: spam[-1]
 Out[9]: '!'
 In [ ]: slicing
In [10]: spam[0:5]
Out[10]: 'Hello'
In [12]: spam[:5]
Out[12]: 'Hello'
In [14]: spam[6:-1]
Out[14]: 'world'
In [15]: spam[::-1]
Out[15]: '!dlrow olleH'
In [16]: spam[:-1]
Out[16]: 'Hello world'
In [ ]: the in & not operator
In [17]: 'hello' in 'hello world'
Out[17]: True
In [18]: 'HELLO' in 'hello world'
Out[18]: False
In [19]: 'cat' not in 'cat and dog'
```

```
Out[19]: False
 In [ ]: upper(),lower(),title()
In [20]:
Out[20]: 'Hello world!'
In [21]: spam.upper()
Out[21]: 'HELLO WORLD!'
In [22]: spam.lower()
Out[22]: 'hello world!'
In [23]: spam.title()
Out[23]: 'Hello World!'
 In [ ]: is upper()&is lower()methods
In [24]: spam='Hello world'
         spam
Out[24]: 'Hello world'
In [25]: spam.isupper()
Out[25]: False
In [26]: spam.islower()
Out[26]: False
In [27]: spam.istitle()
Out[27]: False
In [28]: 'HELLO'.isupper()
Out[28]: True
In [29]: 'hello'.islower()
Out[29]: True
In [ ]: startswith&endswith
In [30]: 'hello world!'.startswith('hello')
```

```
Out[30]: True
In [31]: 'hello world!'.endswith('with')
Out[31]: False
In [32]: 'abc123'.startswith('abcde')
Out[32]: False
In [ ]: join()split()
In [33]: ''.join(['my', 'name', 'is', 'gudu'])
Out[33]: 'mynameisgudu'
In [34]: ' '.join(['my', 'name', 'is', 'gudu'])
Out[34]: 'my name is gudu'
In [35]: ' abc '.join(['my', 'name', 'is', 'gudu'])
Out[35]: 'my abc name abc is abc gudu'
In [36]: 'my name is gudu.'.split()
Out[36]: ['my', 'name', 'is', 'gudu.']
In [37]: 'my abc name abc is abc gudu'.split('abc')
Out[37]: ['my ', ' name ', ' is ', ' gudu']
In [38]: 'my name is gudu'.split('m')
Out[38]: ['', 'y na', 'e is gudu']
In [ ]: rjust(),ljust(),center()
In [39]: 'hello'.rjust(10)
Out[39]: ' hello'
In [41]: 'hello'.ljust(10)
Out[41]: 'hello
In [42]: 'hello'.center(10)
Out[42]: ' hello '
In [43]: 'hello'.center(20,'*')
```

```
Out[43]: '******hello*******
 In [ ]: removing & white space
         strip(),rstrip()&lstrip()
                  hello world! '
In [44]: spam='
         spam
Out[44]: ' hello world! '
In [45]: spam.strip()
Out[45]: 'hello world!'
In [46]: spam.lstrip()
Out[46]: 'hello world! '
In [47]: spam.rstrip()
Out[47]: ' hello world!'
In [ ]: count method
In [49]: spam='one sheep two sheep three sheep four'
Out[49]: 'one sheep two sheep three sheep four'
In [50]: spam.count('e')
Out[50]: 9
In [51]: spam.count('sheep')
Out[51]: 3
In [52]: spam.count('e',6)
Out[52]: 8
In [ ]: replace method
In [53]: text="Hello worldl"
         text
Out[53]: 'Hello worldl'
In [54]: text.replace("worldl","planet")
Out[54]: 'Hello planet'
```

```
In [55]: fruits='apple,banana,cherry,apple'
          fruits
Out[55]: 'apple,banana,cherry,apple'
In [56]: fruits.replace('apple','orange',1)
Out[56]: 'orange, banana, cherry, apple'
In [57]: sentence= "I like apples, Apples are my favourite fruit"
          sentence.replace("apples", "oranges")
Out[57]: 'I like oranges, Apples are my favourite fruit'
 In [ ]: string assignment completed
 In [ ]:
 In [ ]:
```

Ιr	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
	n [ ]:	
	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
Tr	n [ ]:	
Ιr	n [ ]:	
Ir	n [ ]:	
Ir	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	
Ιr	n [ ]:	