In [2]:
```
print("Danish") ## Print is for printing
```

```
Danish
```

In [3]:
```
type (print("Danish")) ## Type is for datatype
```

```
Danish
```

Out[3]:
```
NoneType
```

In [4]:
```
a=5
```

In [5]:
```
type(a)
```

Out[5]:
```
int
```

In [6]:
```
b=45.53
```

In [7]:
```
type(b)
```

Out[7]:
```
float
```

In [2]:
```
num1= int (input("enter first number "))
num2= int (input("enter Second number "))
```

In [3]:
```
result=num1+num2
print(result)
```

```
120
```

In [6]:
```
sum_num= num1 + num2
diff_num= num1 - num2
mult_num= num1 * num2
div_num= num1 / num2
mod_num= num1 % num2
Quot_num= num1 // num2
```

In [7]:
```
print("Sum of two numbers",num1, "and",num2, "is",sum_num)
print("Diff of two numbers",num1, "and",num2, "is",diff_num)
print("Multiple of two numbers",num1, "and",num2, "is",mult_num)
print("Divide of two numbers",num1, "and",num2, "is",div_num)
print("Mode of two numbers",num1, "and",num2, "is",mod_num)
print("Quotient of two numbers",num1, "and",num2, "is",Quot_num)
```

```
Sum of two numbers 100 and 20 is 120
Diff of two numbers 100 and 20 is 80
Multiple of two numbers 100 and 20 is 2000
Divide of two numbers 100 and 20 is 5.0
Mode of two numbers 100 and 20 is 0
Quotient of two numbers 100 and 20 is 5
```

Range Function

In [8]:
```
    range(10) ## print list of values from 0 to n-1
```

Out[8]:
```
range(0, 10)
```

In [9]:
```
print(range(10))
```

```
range(0, 10)
```

In [10]:
```
list(range(10)) ### print list of values from 0 to n-1
```

Out[10]:
```
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [11]:
```
list(range(3,10))  ## Print numbers from 3 till 9
```

Out[11]:
```
[3, 4, 5, 6, 7, 8, 9]
```

In [12]:
```
list(range(3,10,2))  ## Print numbers from 3 till 9 by skipping one number in be
```

Out[12]:
```
[3, 5, 7, 9]
```

In [13]:
```
list(range(3,20))
```

Out[13]:
```
[3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

In [14]:
```
list(range(3,20,3))  ## Print numbers from 3 till 19 by skipping two number in b
```

Out[14]:
```
[3, 6, 9, 12, 15, 18]
```

In [15]:
```
list(range(2,21.2,32.2)) ## Range doesn't work for float
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[15], line 1
----> 1 list(range(2,21.2,32.2))

TypeError: 'float' object cannot be interpreted as an integer
```

In [19]:
```
list(range(2,int(21.2),int(2.1))) ## Range doesn't work for float
```

Out[19]:
```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
```

In [20]:
```
list(range(45,3,-3))
```

Out[20]:
```
[45, 42, 39, 36, 33, 30, 27, 24, 21, 18, 15, 12, 9, 6]
```

In [21]:
```
list(range(3,45,-3)) ## there is no syntax error but it will give empty list
```

Out[21]:
```
[]
```

In [22]:
```
name= "India"
```

In [23]:
```
type(name)
```

Out[23]:
```
str
```

In [24]:
```
len(name)
```

Out[24]:
```
5
```

In [25]:
```
list(range(len(name)))
```

Out[25]: [0, 1, 2, 3, 4]

In [27]:
```
list_items = [] ## Sqare bracket stand for list
```

In [28]:
```
print(list_items)
```

```
[]
```

In [30]:
```
list_item = ["Danish", 3, 2.1, "Delhi", True, False]
```

In [31]:
```
print(list_item)
```

```
['Danish', 3, 2.1, 'Delhi', True, False]
```

In [32]:
```
len_list = len(list_item)
```

In [33]:
```
print(len_list)
```

```
6
```

In [34]:
```
type(list_item)
```

Out[34]: list

In [37]:
```
print(list_item)
```

```
['Danish', 3, 2.1, 'Delhi', True, False]
```

In [38]:
```
list_item[2] ## accessing the 3 element from list
```

Out[38]: 2.1

In [43]:
```
list_item[2:] ## item from the list from 3rd onwards
```

Out[43]: [2.1, 'Delhi', True, False]

In [40]:
```
list_item[:] ## give all the items
```

Out[40]: ['Danish', 3, 2.1, 'Delhi', True, False]

In [41]:
```
list_item[:5] ## item from the list upto 5th
```

Out[41]: ['Danish', 3, 2.1, 'Delhi', True]

In [44]:
```
list_item[2:5] ## item from the list from 3rd to 5th excluding 5th
```

Out[44]: [2.1, 'Delhi', True]

In [48]:
```
list_item
```

Out[48]: ['Danish', 3, 2.1, 'Delhi', True, False]

In [45]:
```
list_item[::-1] ## Reverse elements inside the list but original list will not c
```

Out[45]: [False, True, 'Delhi', 2.1, 3, 'Danish']

In [51]:
```
list_item[2:5:1]
```

Out[51]: [2.1, 'Delhi', True]

In [52]:
```
[1,2,20.25,"Danish"] + "Malik" ## We cannot do the concatenate of list and str
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[52], line 1
----> 1 [1,2,20.25,"Danish"] + "Malik"

TypeError: can only concatenate list (not "str") to list
```

In [53]:
```
[1,2,20.25,"Danish"] + ["Malik", 90, 6.5] ## List should be concatenated with li
```

Out[53]: [1, 2, 20.25, 'Danish', 'Malik', 90, 6.5]

Append Function

In [54]:
```
list_item
```

Out[54]: ['Danish', 3, 2.1, 'Delhi', True, False]

In [55]:
```
print(list_item) ## either above or we can use this both will five the same outp
```

```
['Danish', 3, 2.1, 'Delhi', True, False]
```

In [56]:
```
Name = "Danish"
```

In [58]:
```
Name[len(Name)-2]
```

Out[58]: 's'

In [59]:
```
Name[len(Name)-2] = "o" ## str is immutable
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[59], line 1
----> 1 Name[len(Name)-2] = "o"

TypeError: 'str' object does not support item assignment
```

In [60]:
```
list_item
```

Out[60]: ['Danish', 3, 2.1, 'Delhi', True, False]

In [61]:
```
list_item.append("Malik") ## Adding items at end
```

In [62]:
```
list_item
```

Out[62]: ['Danish', 3, 2.1, 'Delhi', True, False, 'Malik']

In [65]:
```
list_item.append(["India",90]) ## it will add list inside list
```

In [66]:
```
list_item
```

Out[66]: ['Danish', 3, 2.1, 'Delhi', True, False, 'Malik', ['India', 90]]

In [68]:
```
list_item[7][0] ##to access elements from list inside list use double square bra
```

Out[68]:
```
'India'
```

Insert() Function

In [69]:
```
list_item
```

Out[69]:
```
['Danish', 3, 2.1, 'Delhi', True, False, 'Malik', ['India', 90]]
```

In [73]:
```
list_item.insert(3,"India") # insert at 3rd position and other elements get shif
```

In [74]:
```
list_item
```

Out[74]:
```
['Danish',
 3,
 2.1,
 'India',
 'India',
 'India',
 'Delhi',
 True,
 False,
 'Malik',
 ['India', 90]]
```

In [75]:
```
list_item.insert(5,[12,"Data"]) # insert at 3rd position and other elements get
```

In [76]:
```
list_item
```

Out[76]:
```
['Danish',
 3,
 2.1,
 'India',
 'India',
 [12, 'Data'],
 'India',
 'Delhi',
 True,
 False,
 'Malik',
 ['India', 90]]
```

In [77]:
```
list_item[5][1]
```

Out[77]:
```
'Data'
```

Replace() Function

In [78]:
```
list_item.replace(3,"Danish") ## Replace funtion is not available for list in py
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[78], line 1
----> 1 list_item.replace(3,"Danish")

AttributeError: 'list' object has no attribute 'replace'
```

Extend() Function

In [79]:
```
s = [1,2,12.2, "Danish"]
```

In [80]:
```
s
```

Out[80]:
```
[1, 2, 12.2, 'Danish']
```

In [84]:
```
s.append(["Malik",23])
```

In [85]:
```
s
```

Out[85]:
```
[1, 2, 12.2, 'Danish', 'Malik', ['Malik', 23]]
```

In [88]:
```
s.extend(["Delhi", 11, 0.1] )## add elements individually and not together unlik
```

In [90]:
```
s
```

Out[90]:
```
[1, 2, 12.2, 'Danish', 'Malik', ['Malik', 23], 'Delhi', 11, 0.1]
```

In [93]:
```
s.index('Danish')
```

Out[93]:
```
3
```

Reverse() Function

In [110…
```
list_item
```

Out[110…
```
['Danish',
 3,
 2.1,
 'India',
 'India',
 [12, 'Data'],
 'India',
 'Delhi',
 True,
 False,
 'Malik',
 ['India', 90]]
```

In [111…
```
list_item_copy = list_item.copy()
```

In [112…
```
list_item_copy.reverse() ## it will reverse the elements inside the list and ori
```

In [113…
```
list_item_copy
```

Out[113…
```
[['India', 90],
 'Malik',
 False,
 True,
 'Delhi',
 'India',
 [12, 'Data'],
 'India',
 'India',
 2.1,
 3,
 'Danish']
```

Sort() Funtion

In [114…
```
list_item2 = ["Danish", "Malik", "Delhi"]
```

In [119…
```
list_item2_sorted = sorted(list_item2) ## sorted can be use for re-assigning ana
```

In [120…
```
list_item2_sorted
```

Out[120…
```
['Danish', 'Delhi', 'Malik']
```

In [121…
```
list_item2
```

Out[121…
```
['Danish', 'Malik', 'Delhi']
```

In [115…
```
list_item2_copy = list_item2.copy()
```

In [116…
```
list_item2_copy.sort() ## it will sort the lsit
```

In [117…
```
list_item2_copy
```

Out[117…
```
['Danish', 'Delhi', 'Malik']
```

In [118…
```
list = ['d','a','c','b']
```

In [103…
```
list.sort() ## For ascending order
```

In [104…
```
list
```

Out[104…
```
['a', 'b', 'c', 'd']
```

In [105…
```
list.sort(reverse = True) ## for descending order use (reverse = True)
```

In [106…
```
list
```

Out[106…
```
['d', 'c', 'b', 'a']
```

In [125…
```
list_item_number= [1,6,3,51,25,63,93,62]
```

In [127…
```
list_item_number_sort_asc = sorted(list_item_number)
list_item_number_sort_dsc = sorted(list_item_number, reverse=True)
```

In [131…
```
print(list_item_number_sort_asc)
print(list_item_number_sort_dsc)
```

```
[1, 3, 6, 25, 51, 62, 63, 93]
[93, 63, 62, 51, 25, 6, 3, 1]
```

In [136…
```
list_item_number
```

Out[136… [1, 6, 3, 51, 25, 63, 93, 62]

In [ ]: