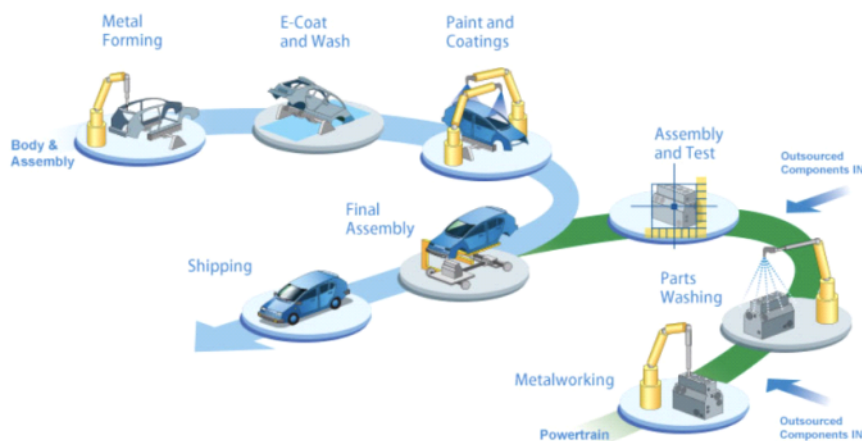


## Control Transfer Statement & Functions

## Session Objectives

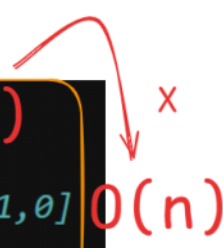
- ✓ What control transfer statements are
- ✓ How to use the break statement
- ✓ How to use the continue statement
- ✓ How to use the pass statement
- ✓ Understand what functions are and why we use them.
- ✓ Learn to define functions, with parameters and arguments.



```
for car in car_list:
    if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
        continue
    print(car, end = " ")
else:
    for car in car_list:
        if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
            pass # Placeholder [The Logic will be added in future]
        else:
            fav_car_list.append(car)
```

Nested :  $O(n^2)$

```
for i in range(outer_stop): # [0,1,2,3,4]  $O(n)$ 
    inner_stop = len(car_list[0]) # 4
    for j in range(inner_stop-1,-1,-1): # [3,2,1,0]  $O(n)$ 
        reverse_row_list.append(car_list[i][j])
```



```
for i in range(1,11): # [1,2,3,4,5....10]
    if i == 11:
        print()
        print("Hey! I'm going to terminate , Bye!!")
        break
    print(i , end = " ")
else:
    print()
    print("Loop Run Successfully ✓")
```

1,2,3,4,5,6,7,8,9,10

↓  
i  
↓  
Out of Range

Console:

```
1 2 3 4 5 6 7 8 9 10
Loop Run Successfully ✓
```

```
for i in range(1,11): # [1,2,3,4,5....10]
    if i == 6:
        print()
        print(f"Skipping : {i}")
        continue
    print(i , end = " ")
else:
    print()
    print("Loop Run Successfully ✓")
```

```
1 2 3 4 5
Skipping : 6
7 8 9 10
Loop Run Successfully ✓
```

```
for stud_key in _dict.keys():
    if stud_key == 'stud3':
        _dict[stud_key]['city'] = 'Banglore'
        _dict[stud_key]['state'] = 'Karnataka'
_dict['stud3']
```

```
{'name': 'Rajat',
 'age': 27,
 'gender': 'M',
 'city': 'Banglore',
 'state': 'Karnataka'}
```

```
_dict = {
    'stud1': {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'},
    'stud2': {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'},
    'stud3': {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'},
    'stud4': {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'},
    'stud5': {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'},
    'stud6': {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'},
    'stud7': {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}
}
```

```
for stud_key in _dict.keys():
    print(_dict[stud_key])
```

```
{'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}
{'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}
{'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'}
{'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'}
{'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}
{'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}
{'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}
```

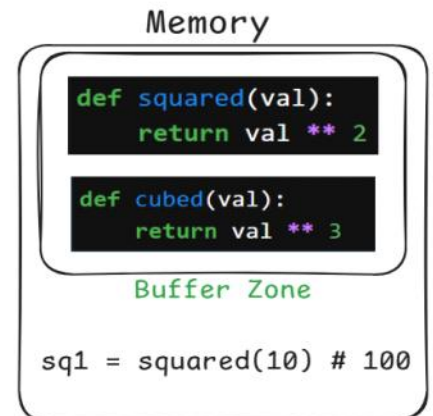
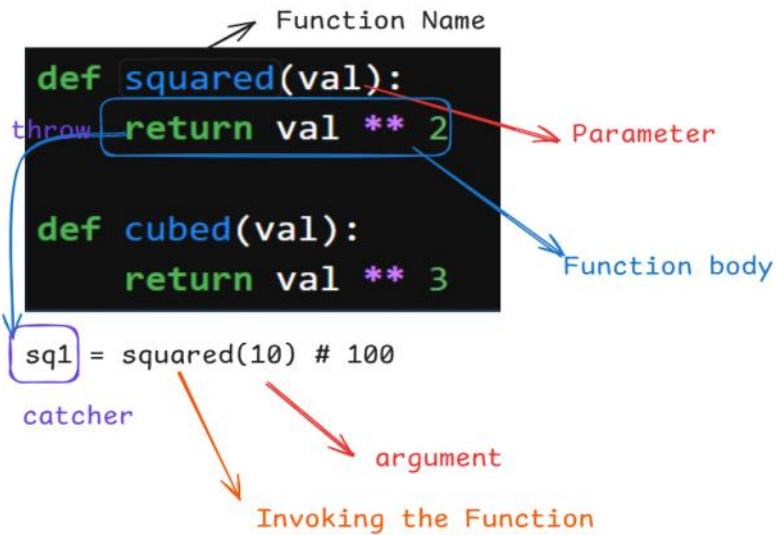
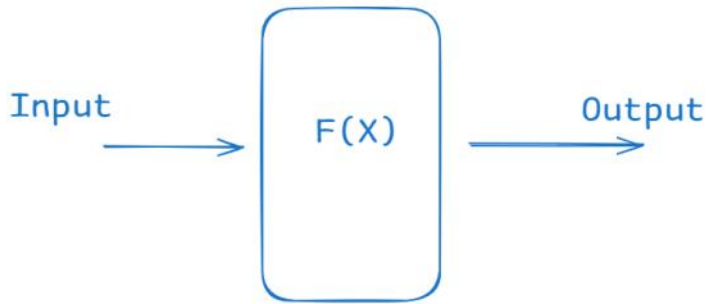
```
for student_code, stud_info in _dict.items():
    print(student_code, end = " : ")
    print(stud_info)
```

```
stud1 : {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}
stud2 : {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}
stud3 : {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'Bangalore', 'state': 'Karnataka'}
stud4 : {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'}
stud5 : {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}
stud6 : {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}
stud7 : {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}
```

```
for student_code, stud_info in _dict.items():
    print(student_code, end = " -> ")
    print()
    for person_key, person_detail in stud_info.items():
        print(end = "\t")
        print(person_key, end = " : ")
        print(person_detail)
```

```
stud1 ->
    name : Aryan
    age : 24
    gender : M
    city : Faridabad
    state : Haryana
stud2 ->
    name : Nishant
    age : 25
    gender : M
    city : Jaipur
    state : Rajasthan
```





```
# Control Transfer Statement : 'break' , 'continue' , 'pass'
car_list = ['Taigun','Creta','Slavia','Venue','Sierra','City','Curv',
            'Harrier','Safari','Lord Alto','Thar','Virtus','Defender',
            'Innova','Baleno','Legender','ScorpioN','Grand Vitara']
for car in car_list:
    if car == 'Virtus':
        break
    print(car, end = " ")
else:
    print("Loop Run Successfully ✅")

Taigun Creta Slavia Venue Sierra City Curv Harrier Safari Lord Alto Thar
```

```
# Control Transfer Statement : 'break' , 'continue' , 'pass'
car_list = ['Taigun','Creta','Slavia','Venue','Sierra','City','Curv',
            'Harrier','Safari','Lord Alto','Thar','Virtus','Defender',
            'Innova','Baleno','Legender','ScorpioN','Grand Vitara']
for car in car_list:
    if car == 'Innova':
        break
    print(car, end = " ")
else:
    print("Loop Run Successfully ✅")

print()
print("Hello Car Lovers :) ")

Taigun Creta Slavia Venue Sierra City Curv Harrier Safari Lord Alto Thar Virtus Defender
Hello Car Lovers :)
```

```
# Control Transfer Statement : 'break' , 'continue' , 'pass'
car_list = ['Taigun','Creta','Slavia','Venue','Sierra','City','Curv',
            'Harrier','Safari','Lord Alto','Thar','Virtus','Defender',
            'Innova','Baleno','Legender','ScorpioN','Grand Vitara']
for car in car_list:
    if (car == 'Innova') or (car == 'ScorpioN'):
        continue
    print(car, end = " ")
else:
    print()
    print("Loop Run Successfully ✅")

print("Hello Car Lovers :) ")
```

```
Taigun Creta Slavia Venue Sierra City Curv Harrier Safari Lord Alto Thar Virtus Defender Baleno Legender Grand
Vitara
Loop Run Successfully ✅
Hello Car Lovers :)
```

```
# Control Transfer Statement : 'break' , 'continue' , 'pass'
car_list = ['Taigun','Creta','Slavia','Venue','Sierra','City','Curv',
            'Harrier','Safari','Lord Alto','Thar','Virtus','Defender',
            'Innova','Baleno','Legender','ScorpioN','Grand Vitara']
fav_car_list = []
for car in car_list:
    if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
        continue
    print(car, end = " ")
else:
    for car in car_list:
        if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
            pass # Placeholder [The Logic will be added in future]
        else:
            fav_car_list.append(car)

print()
print(fav_car_list)
```

```
Taigun Creta Slavia Venue Sierra City Curv Harrier Safari Lord Alto Thar Virtus Defender Baleno Legender
['Taigun', 'Creta', 'Slavia', 'Venue', 'Sierra', 'City', 'Curv', 'Harrier', 'Safari', 'Lord Alto', 'Thar', 'Vi
rtus', 'Defender', 'Baleno', 'Legender']
```

```
# Control Transfer Statement : 'break' , 'continue' , 'pass'
car_list = ['Taigun','Creta','Slavia','Venue','Sierra','City','Curv',
            'Harrier','Safari','Lord Alto','Thar','Virtus','Defender',
            'Innova','Baleno','Legender','ScorpioN','Grand Vitara']
fav_car_list = []
for car in car_list:
    if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
        break
    print(car, end = " ")
else:
    for car in car_list:
        if (car == 'Innova') or (car == 'ScorpioN') or (car == "Grand Vitara"):
            pass # Placeholder [The logic will be added in future]
        else:
            fav_car_list.append(car)

print()
print(fav_car_list)
```

Taigun Creta Slavia Venue Sierra City Curv Harrier Safari Lord Alto Thar Virtus Defender  
[]

```
for i in range(1,11): # [1,2,3,4,5....10]
    print(i , end = " ")
    if i == 7:
        print()
        print("Hey! I'm going to terminate , Bye!!")
        break
else:
    print("Loop Run Successfully ✅")
```

1 2 3 4 5 6 7  
Hey! I'm going to terminate , Bye!!

```
for i in range(1,11): # [1,2,3,4,5....10]
    if i == 7:
        print()
        print("Hey! I'm going to terminate , Bye!!")
        break
    print(i , end = " ")
else:
    print("Loop Run Successfully ✅")
```

1 2 3 4 5 6  
Hey! I'm going to terminate , Bye!!



```

for i in range(1,11): # [1,2,3,4,5....10]
    if i == 11:
        print()
        print("Hey! I'm going to terminate , Bye!!")
        break
    print(i , end = " ")
else:
    print()
    print("Loop Run Successfully ✅")

```

1 2 3 4 5 6 7 8 9 10  
Loop Run Successfully ✅

```

for i in range(1,11): # [1,2,3,4,5....10]
    if i == 6:
        print()
        print(f"Skipping : {i}")
        continue
    print(i , end = " ")
else:
    print()
    print("Loop Run Successfully ✅")

```

1 2 3 4 5  
Skipping : 6  
7 8 9 10  
Loop Run Successfully ✅

```

# Spin the Wheel :
offer_list = {
    '0' : 'exit',
    '1' : '20% off using this code on the Lifestyle App: NY20',
    '2' : 'B2G1 Belavitta Perfumes',
    '3' : 'Dominos: Buy 7 Pizza @499',
    '4' : 'TRY20 - Try Traya 20% Discount Voucher',
    '5' : 'Buy 1 get 1 Free: @Adidas',
    '6' : 'Flat 50 off on 249 Shopping Zepto',
    '7' : 'Shpt @4999 and get 1500 Off: Reliance Digital',
    '8' : 'Minimalist B1G1',
    '9' : 'Skullcandy 70% off on purchase of 2499'
}
offer_keys = offer_list.keys()
offer_values = offer_list.values()
print(offer_keys)
print(offer_values)

```

dict\_keys(['0', '1', '2', '3', '4', '5', '6', '7', '8', '9'])  
dict\_values(['exit', '20% off using this code on the Lifestyle App: NY20', 'B2G1 Belavitta Perfumes', 'Domino  
s: Buy 7 Pizza @499', 'TRY20 - Try Traya 20% Discount Voucher', 'Buy 1 get 1 Free: @Adidas', 'Flat 50 off on 2  
49 Shopping Zepto', 'Shpt @4999 and get 1500 Off: Reliance Digital', 'Minimalist B1G1', 'Skullcandy 70% off on  
purchase of 2499'])

```
# Logic
chances = 3 # Start
reward_list = []
while chances > 0: # Stop
    offer_key = input("Enter the Lucky Number Between 0 to 9: ")
    if offer_list[offer_key] == 'exit':
        print("Better Luck Next Time 😞")
        break
    else:
        reward_list.append(offer_list[offer_key])
    chances-=1 # Step
print(reward_list)
```

Enter the Lucky Number Between 0 to 9: 7  
Enter the Lucky Number Between 0 to 9: 5  
Enter the Lucky Number Between 0 to 9: 9  
['Shpt @4999 and get 1500 Off: Reliance Digital', 'Buy 1 get 1 Free: @Adidas', 'Skullcandy 70% off on purchase of 2499']

```
# Logic
chances = 3 # Start
reward_list = []
while chances > 0: # Stop
    offer_key = input("Enter the Lucky Number Between 0 to 9: ")
    if offer_list[offer_key] == 'exit':
        print("Better Luck Next Time 😞")
        break
    else:
        reward_list.append(offer_list[offer_key])
    chances-=1 # Step
print(reward_list)
```

Enter the Lucky Number Between 0 to 9: 8  
Enter the Lucky Number Between 0 to 9: 0  
Better Luck Next Time 😞  
['Minimalist B1G1']



```

# Logic
chances = 3 # Start
reward_list = []
while chances > 0: # Stop
    offer_key = input("Enter the Lucky Number Between 0 to 9: ")
    if offer_list[offer_key] == 'exit':
        print("Better Luck Next Time 😞")
        break
    else:
        print(f"You have selected offer key {offer_key}: You got {offer_list[offer_key]}")
        reward_list.append(offer_list[offer_key])
    chances-=1 # Step
print(reward_list)

```

```

Enter the Lucky Number Between 0 to 9: 8
You have selected offer key 8: You got Minimalist B1G1
Enter the Lucky Number Between 0 to 9: 2
You have selected offer key 2: You got B2G1 Belavitta Perfumes
Enter the Lucky Number Between 0 to 9: 0
Better Luck Next Time 😞
['Minimalist B1G1', 'B2G1 Belavitta Perfumes']

```

```

# Spin the Wheel :
offer_list = {
    '0' : 'exit',
    '1' : 'You won 1 more chance ❤️',
    '2' : 'B2G1 Belavitta Perfumes',
    '3' : 'Dominos: Buy 7 Pizza @499',
    '4' : 'TRY20 - Try Traya 20% Discount Voucher',
    '5' : 'Buy 1 get 1 Free: @Adidas',
    '6' : 'Flat 50 off on 249 Shopping Zepto',
    '7' : 'Shpt @4999 and get 1500 Off: Reliance Digital',
    '8' : 'Minimalist B1G1',
    '9' : 'Skullcandy 70% off on purchase of 2499'
}
offer_keys = offer_list.keys()
offer_values = offer_list.values()
print(offer_keys)
print(offer_values)

```

```

dict_keys(['0', '1', '2', '3', '4', '5', '6', '7', '8', '9'])
dict_values(['exit', 'You won 1 more chance ❤️', 'B2G1 Belavitta Perfumes', 'Dominos: Buy 7 Pizza @499', 'TRY20 - Try Traya 20% Discount Voucher', 'Buy 1 get 1 Free: @Adidas', 'Flat 50 off on 249 Shopping Zepto', 'Shpt @4999 and get 1500 Off: Reliance Digital', 'Minimalist B1G1', 'Skullcandy 70% off on purchase of 2499'])

```

```

chances = 3 # Start
reward_list = []
while chances > 0: # Stop
    offer_key = input("Enter the Lucky Number Between 0 to 9: ")
    if offer_key == 'exit':
        print("Better Luck Next Time 😊")
        break
    elif offer_key == '1':
        print("Wohooo! You won 1 More Chance 🔥")
        chances+=1
    else:
        print(f"You have selected offer key {offer_key}: You got {offer_list[offer_key]}")
        reward_list.append(offer_list[offer_key])
    chances-=1 # Step
print(reward_list)

```

```

Enter the Lucky Number Between 0 to 9: 9
You have selected offer key 9: You got Skullcandy 70% off on purchase of 2499
Enter the Lucky Number Between 0 to 9: 1
Wohooo! You won 1 More Chance 🔥
Enter the Lucky Number Between 0 to 9: 2
You have selected offer key 2: You got B2G1 Belavitta Perfumes
Enter the Lucky Number Between 0 to 9: 8
You have selected offer key 8: You got Minimalist B1G1
['Skullcandy 70% off on purchase of 2499', 'B2G1 Belavitta Perfumes', 'Minimalist B1G1']

```

```

nested_num_list = [
    [11,22,33,44,55],
    [1,3,5,7,9],
    [10,20,30,40,50],
    [99,88,77,66,55],
    [81,72,63,54,45]
]
even_list = []
odd_list = []
for row in nested_num_list:
    for val in row:
        if val % 2 == 0: # even list
            even_list.append(val)
        else: # odd list
            odd_list.append(val)
else:
    print("Even_list : " , even_list)
    print("Odd_list : " , odd_list)

```

```

Even_list : [22, 44, 10, 20, 30, 40, 50, 88, 66, 72, 54]
Odd_list : [11, 33, 55, 1, 3, 5, 7, 9, 99, 77, 55, 81, 63, 45]

```

```

nested_num_list = [
    [11,22,33,44,55],
    [1,3,5,7,9],
    [10,20,30,40,50],
    [99,88,77,66,55],
    [81,72,63,54,45]
]
even_list = []
odd_list = []
for row in nested_num_list:
    for val in row:
        if val <= 10 or val >=80:
            pass # Placeholder [Future Logic]
        elif val % 2 == 0: # even list
            even_list.append(val)
        elif val % 2 == 1: # odd list
            odd_list.append(val)
else:
    print("Even_list : " , even_list)
    print("Odd_list : " , odd_list)

```

---

```

Even_list :  [22, 44, 20, 30, 40, 50, 66, 72, 54]
Odd_list :  [11, 33, 55, 77, 55, 63, 45]

```

```

nested_num_list = [
    [11,22,33,44,55],
    [1,3,5,7,9],
    [10,20,30,40,50],
    [99,88,77,66,55],
    [81,72,63,54,45]
]
even_list = []
odd_list = []
another_list = []
for row in nested_num_list:
    for val in row:
        if val <= 10 or val >=80:
            another_list.append(val) # pass # Placeholder
        elif val % 2 == 0: # even list
            even_list.append(val)
        elif val % 2 == 1: # odd list
            odd_list.append(val)
else:
    print("Another_list : " , another_list)
    print("Even_list : " , even_list)
    print("Odd_list : " , odd_list)

```

---

```

Another_list :  [1, 3, 5, 7, 9, 10, 99, 88, 81]
Even_list :  [22, 44, 20, 30, 40, 50, 66, 72, 54]
Odd_list :  [11, 33, 55, 77, 55, 63, 45]

```



```

_dict = {
    'stud1': {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'},
    'stud2': {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'},
    'stud3': {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'},
    'stud4': {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'},
    'stud5': {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'},
    'stud6': {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'},
    'stud7': {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}
}

_dict.keys()

dict_keys(['stud1', 'stud2', 'stud3', 'stud4', 'stud5', 'stud6', 'stud7'])

_dict['stud1'].keys()

dict_keys(['name', 'age', 'gender', 'city', 'state'])

```

```

_dict.values()

dict_values([{'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}, {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}, {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'}, {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'}, {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}, {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}, {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}])

_dict['stud1'].values()

dict_values(['Aryan', 24, 'M', 'Faridabad', 'Haryana'])

_dict.items()

dict_items([('stud1', {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}), ('stud2', {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}), ('stud3', {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'}), ('stud4', {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'}), ('stud5', {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}), ('stud6', {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}), ('stud7', {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'})])

```

```

_dict['stud1'].items()

dict_items([('name', 'Aryan'), ('age', 24), ('gender', 'M'), ('city', 'Faridabad'), ('state', 'Haryana')])

for stud_key in _dict.keys():
    print(_dict[stud_key])

{'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}
{'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}
{'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'North Delhi', 'state': 'Delhi'}
{'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharashtra'}
{'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}
{'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}
{'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}

```

```
for stud_key in _dict.keys():
    print(_dict[stud_key]['name'])
```

Aryan  
Nishant  
Rajat  
Paramjeet  
Omkar  
Rambo  
Aman

```
for stud_key in _dict.keys():
    print(_dict[stud_key]['city'])
```

Faridabad  
Jaipur  
North Delhi  
Pune  
Kolkata  
Amritsar  
Indore

```
for stud_key in _dict.keys():
    print(f"{_dict[stud_key]['name']} : {_dict[stud_key]['city']}")
```

Aryan : Faridabad  
Nishant : Jaipur  
Rajat : North Delhi  
Paramjeet : Pune  
Omkar : Kolkata  
Rambo : Amritsar  
Aman : Indore

```
for stud_key in _dict.keys():
    if stud_key == 'stud3':
        _dict[stud_key]['city'] = 'Banglore'
        _dict[stud_key]['state'] = 'Karnataka'
_dict['stud3']
```

```
{'name': 'Rajat',
 'age': 27,
 'gender': 'M',
 'city': 'Banglore',
 'state': 'Karnataka'}
```

```
for student_details in _dict.items():
    print(student_details) # Complete inner dictionary
```

```
('stud1', {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'})
('stud2', {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'})
('stud3', {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'Banglore', 'state': 'Karnataka'})
('stud4', {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharastra'})
('stud5', {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'})
('stud6', {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'})
('stud7', {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'})
```

```
for student_code, stud_info in _dict.items():
    print(student_code, end = " : ")
    print(stud_info)
```

```
stud1 : {'name': 'Aryan', 'age': 24, 'gender': 'M', 'city': 'Faridabad', 'state': 'Haryana'}
stud2 : {'name': 'Nishant', 'age': 25, 'gender': 'M', 'city': 'Jaipur', 'state': 'Rajasthan'}
stud3 : {'name': 'Rajat', 'age': 27, 'gender': 'M', 'city': 'Banglore', 'state': 'Karnataka'}
stud4 : {'name': 'Paramjeet', 'age': 22, 'gender': 'F', 'city': 'Pune', 'state': 'Maharastra'}
stud5 : {'name': 'Omkar', 'age': 21, 'gender': 'M', 'city': 'Kolkata', 'state': 'West Bengal'}
stud6 : {'name': 'Rambo', 'age': 30, 'gender': 'M', 'city': 'Amritsar', 'state': 'Punjab'}
stud7 : {'name': 'Aman', 'age': 29, 'gender': 'M', 'city': 'Indore', 'state': 'Madhya Pradesh'}
```

```

for student_code , stud_info in _dict.items():
    print(student_code , end = " -> ")
    print()
    for person_key , person_detail in stud_info.items():
        print(end = "\t")
        print(person_key , end = " : ")
        print(person_detail)

```

```

stud1 ->
    name : Aryan
    age : 24
    gender : M
    city : Faridabad
    state : Haryana
stud2 ->
    name : Nishant
    age : 25
    gender : M
    city : Jaipur
    state : Rajasthan
stud3 ->
    name : Rajat
    age : 27

```

## Functions:

Functions are reusable block of code that helps you:

1. Organize your code.
2. 'DRY' : Don't Repeat Yourself.
3. Makes your program easy to understand and debug.

Functions (Syntax):

```

def function_name :
    # Function Logic [Print Vs Return]

```

```

def greet(): # Non-Parameterized Function
    print("Hello World!")

```

```

greet()
greet()
greet()
greet()

```

```

Hello World!
Hello World!
Hello World!
Hello World!

```



```
def squared(val): # Parameterized Function
    return val ** 2

sq1 = squared(10) # 10 act as an argument
print(sq1)

100

sq2 = squared(11) # 11 act as an argument
print(sq2) # 121

121

sq3 = squared(9) # 9 act as an argument
print(sq3) # 81

81

def cubed(val): # Parameterized Function
    return val ** 3

cube1 = cubed(10) # 10 act as an argument
print(cube1) # 1000

1000
```

### Parameter VS Argument

```
INSERT INTO Table_NAME(col1,col2,col3,col4,col5) # Parameters
VALUES(val1,val2,val3,val4,val5) # Arguments
```

```
def squared(val):
    return val ** 2

def cubed(val):
    return val ** 3
```

### Types of Functions:

1. User Defined Functions:
  - Functions that we create with the help of 'def' keyword and perform any custom task.
2. Pre Defined Functions: (Built-In Functions):
  - print()
  - len()
  - input()
  - sum()
  - max()
  - min()
  - type()
  - count()
  - concat()

```
def greet(): # Non-Parameterized Function
    print("Welcome to the Python Course! ")

greet()
greet()

Welcome to the Python Course!
Welcome to the Python Course!
```

```
def Onboarding_Mail(name, designation , company = "Ninjas"): # Parameterized Function
    print(f"Welcome to the Team , {name}.....")
    print(f"You are working as a {designation}, Please connect with you Team.")
    print("With Regards,")
    print(f"{company}")
```

```
Onboarding_Mail('Shyam', 'Data Engineer' , 'PhonePe') # Arguments
```

```
Welcome to the Team , Shyam.....
You are working as a Data Engineer, Please connect with you Team.
With Regards,
PhonePe
```

```
Onboarding_Mail('Swinki', 'Data Analyst' , 'American Express') # Arguments
```

```
Welcome to the Team , Swinki.....
You are working as a Data Analyst, Please connect with you Team.
With Regards,
American Express
```

```
Onboarding_Mail('Aryan', 'Senior Analyst') # Arguments
```

```
Welcome to the Team , Aryan.....
You are working as a Senior Analyst, Please connect with you Team.
With Regards,
Ninjas
```