```
#Q1: how tuples are different from the list [theory type question]
print("List has mutable nature means list can be changed or modified
after its creation according to needs whereas tuple has immutable
nature means tuple can't be changed or modified after its creation")
```

```
List has mutable nature means list can be changed or modified after
its creation according to needs whereas tuple has immutable nature
means tuple can't be changed or modified after its creation
```

```
#Q2: Write a Python program to create a tuple
mytuple=("oranges",3,"banana","appel","oranges")
print("My Tuple values are",mytuple)
```

```
My Tuple values are ('oranges', 3, 'banana', 'appel', 'oranges')
```

```
#one item tuple
tuple=("apple",)
print("My Tuple values are",tuple)
```

```
My Tuple values are ('apple',)
```

```
#Q3:Write a Python program to create a tuple with different data types
tup1 = ("apple", "banana", "cherry")
tup2 = (1, 5, 7, 9, 3)
tup3 = (True, False, False)
tup4 = ("abc", 34, True, 40, "male")

print("My tuple 1 values", tup1)
print("My tuple 2 values", tup2)
print("My tuple 3 values", tup3)
print("My tuple 4 values", tup4)
```

```
My tuple 1 values ('apple', 'banana', 'cherry')
My tuple 2 values (1, 5, 7, 9, 3)
My tuple 3 values (True, False, False)
My tuple 4 values ('abc', 34, True, 40, 'male')
```

```
#Q4:Write a Python program to create a tuple with numbers and print
one item
tupno=(1,2,4,6,78,70,34)
print(tupno[3])
```

```
6
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#Q5:Write a Python program to add an item in a tuple
tpcity=("mumbai","noida","delhi")
y=("kolkata","bangluru")
tpcity+=y
print(tpcity)
```

```
('mumbai', 'noida', 'delhi', 'kolkata', 'bangluru')
```

```python
#Q6:Write a Python program to get the 4th element and 4th element from the last of tuple
tup=("water","fire","air","soil","earth","heart")
print("4th element",(tup[3]))
print("4th element from last",(tup[-4]))
```

```
4th element soil
4th element from last air
```

```python
#Q7:Write a Python program to check whether an element exists within a tuple.

fruittuple = ("apple", "banana", "cherry")
if "apple" in fruittuple:
  print("Yes, 'apple' is in the fruits tuple")
```

```
Yes, 'apple' is in the fruits tuple
```

```python
#Q8:Write a Python program to remove an item from a tuple

print("We cannot remove items in a tuple.")
print("We need to convert tuple into list then remove item and again convert list into tuple")

print("example:-")

fruittuple = ("apple", "banana", "cherry")
y = list(fruittuple)
y.remove("apple")
print("List:", y)

fruittuple = (*y,)
print("Tuple:",fruittuple)
```

```
We cannot remove items in a tuple.
We need to convert tuple into list then remove item and again convert list into tuple
example:-
List: ['banana', 'cherry']
Tuple: ('banana', 'cherry')
```

```python
#Q9:Write a Python program to slice a tuple

NewTuple = (2, 5, 8, 1, 9, 3, 7, 4)
print("Tuple before sliced: ", NewTuple)
print("Sliced tuple:", NewTuple[slice(4)])
```

```
Tuple before sliced:  (2, 5, 8, 1, 9, 3, 7, 4)
Sliced tuple: (2, 5, 8, 1)
```

```
#Q10:Write a Python program to find the length of a tuple
mytuple=("oranges",3,"banana","appel","oranges")
print("My tuple lenght is :", len(mytuple))
```

```
My tuple lenght is : 5
```

```
#Q10:Write a Python program to print a tuple with string formatting.
tuple1 = (100, 200, 300)
print("Tuple type before : ", type(tuple1[0]))
str1 = str(tuple1)
print ("Tuple after converted into string: ",str1)
print("Tuple type after ",type(str1))
```

```
Tuple type before :  <class 'int'>
Tuple after converted into string:  (100, 200, 300)
Tuple type after  <class 'str'>
```

```
#Q1:Write a Python program to create a set.
numberset={1,23,45,67,89,25 }
print(numberset)
```

```
{1, 67, 23, 89, 45, 25}
```

```
#Q2:Write a Python program to iteration over sets.
veggiset={"potato","tomato","onion"}
for x in veggiset:
    print(x)
```

```
potato
tomato
onion
```

```
#Q3:Write a Python program to add a member(s) in a set.
myfamily={"mom","dad","sister","brother"}
print( "befor adding member")
print(myfamily)
print("after adding members")
myfamily.add("husband")
myfamily.add("son")
print(myfamily)
```

```
befor adding member
{'dad', 'mom', 'sister', 'brother'}
after adding members
{'dad', 'mom', 'son', 'sister', 'brother', 'husband'}
```

```
#Q4:Write a Python program to remove item(s) from a given set.
veggiset={"potato","tomato","onion"}
veggiset.remove("onion")
veggiset.remove("potato")
print("items after removing:", veggiset)
```

```
items after removing: {'tomato'}
```

```
#Q5:Write a Python program to remove an item from a set if it is
present in the set
veggiset={"potato","tomato","onion","cherry","fenugreek"}
print("Before : ",veggiset)
veggiset.discard("cherry")
print("After : ",veggiset)
```

```
Before :  {'cherry', 'onion', 'potato', 'fenugreek', 'tomato'}
After :  {'onion', 'potato', 'fenugreek', 'tomato'}
```

```
#Q6:Write a Python program to find the maximum and the minimum value
in a set.
numberset={2,5,8,1,9,4,3}
print("Set: ", numberset)
print("maximum value",max(numberset))
print("minimum value",min(numberset))
```

```
Set:  {1, 2, 3, 4, 5, 8, 9}
maximum value 9
minimum value 1
```

```
#Q7:Write a Python program to find the length of a set.
numberset={2,5,8,1,9,4,3}
print("Set: ", numberset)
print("lenth of set",len(numberset))
```

```
Set:  {1, 2, 3, 4, 5, 8, 9}
lenth of set 7
```

```
#Q8
numberset={2,5,8,1,9,4,3}
print("Set Values : ", numberset)
value=5

if value in numberset:
    print("Value is present",value)
else:
    print("Value is not present")
```

```
Set Values :  {1, 2, 3, 4, 5, 8, 9}
Value is present 5
```

```
#Q1: Write a Python script to add a key to a dictionary.
#Sample Dictionary : {0: 10, 1: 20}
#Expected Result : {0: 10, 1: 20, 2: 30}


Newdict = {
  0 : 10,
  1 : 20
}                 #dictionary define
```

```python
Newdict[2] = 30   #ading the item to dictionary
print("Result: ", Newdict)
```

```
Result:  {0: 10, 1: 20, 2: 30}
```

```python
#Q2: Write a Python script to check whether a given key already exists
in a dictionary

Car = {
  "brand": "KIA",
  "model": "2022",
  "year": 2021
}
if "model" in Car:
  print ("Yes, 'model' is one of the keys in the Car dictionary")
```

```
Yes, 'model' is one of the keys in the Car dictionary
```

```python
#Q3: Write a Python program to remove a key from a dictionary


Car = {
  "brand": "KIA",
  "model": "2022",
  "colour": "White",
  "year": 2021
}
print ("Dictionary Before removing item:", Car)
Car.pop("colour") #removes the item
print ("Dictionary After removing item :", Car)
```

```
Dictionary Before removing item: {'brand': 'KIA', 'model': '2022',
'colour': 'White', 'year': 2021}
Dictionary After removing item : {'brand': 'KIA', 'model': '2022',
'year': 2021}
```

```python
#Q4: Write a python program
#Step1: declare an empty dictionary
#Step2:add as many keys as you want
Car = {
  }   # defined empty dictionary

Car["color"] = "red"  #ading item to car dictionary
Car["Year"] = 2022  #ading item to car dictionary
Car["brand"] = "KIA"  #ading item to car dictionary

print(Car)
```

```
{'color': 'red', 'Year': 2022, 'brand': 'KIA'}
```

```
#Q5: Create a dictionary and store different keys with values and
after creation and new key value
#pairs to that dictionary
Car = {
  "brand": "KIA",
  "model": "2022",
  "colour": "White",
  "year": 2021,
  "country": "India"
}
print ("Dictionary Before ading new item:", Car)
Car["country"] = "paris"   #Changing key value of country
print ("Dictionary After ading new item :", Car)
```

```
Dictionary Before ading new item: {'brand': 'KIA', 'model': '2022',
'colour': 'White', 'year': 2021, 'country': 'India'}
Dictionary After ading new item : {'brand': 'KIA', 'model': '2022',
'colour': 'White', 'year': 2021, 'country': 'paris'}
```

```
#Q6: create a dictionary and print all the keys() using print function
car = {
"brand": "KIA",
"model": "SONET",
"year": 2021
}

x = car.keys()       #it help to retrive key of dictionaries

print(x) #before the change

car["color"] = "white"

print(x) #after the change
```

```
dict_keys(['brand', 'model', 'year'])
dict_keys(['brand', 'model', 'year', 'color'])
```

```
#Q7:create a dictionary and print all the values
#Q6: create a dictionary and print all the keys() using print function
car = {
"brand": "KIA",
"model": "SONET",
"year": 2021
}

x = car.values()     #it help to retrive values of dictionaries

print(x) #before the change

car["color"] = "white"
```

```
print(x) #after the change
```

```
dict_values(['KIA', 'SONET', 2021])
dict_values(['KIA', 'SONET', 2021, 'white'])
```

```
#Q8: Create a dictionary where for one key multiple values are present
#Ex: {‘stdnames’ : [‘pravar’,’mahesh’,’prakash’]}
#Taking the above example create different dictionaries have number of
keys and values
#present but each key belongs to number of values
student = {
"stdnames": ['pravar','mahesh','prakash'],
"stdclass": 10,
"studfees": 500
}

for x, y in student.items():
  print(x, y)
```

```
stdnames ['pravar', 'mahesh', 'prakash']
stdclass 10
studfees 500
```