Ex 7 Real time Applications using List, Tuple, set & Dictionaries

1.Create a list for Items present in a Library and and do all the operations on it .

Program:

```
books=['book1','book2','book3','book4','book5']

edition=[2000,2001,2002,2003,2004]

print(books)

print(len(books))

books.append('book6')   # adding element using append function

print(books)

print(books[0])

print(books[-1])

print(edition)

books.extend(['book7','book8'])     # using extend function

print(books)

books.insert(8,'book9')       # using insert function

print(books)

edition[0]=1999

print(edition)

print(edition[1:4])

edition.remove(2004)

print(edition)

books.pop()

print(books)

del edition[2:4]

print(edition)

edition.clear()

print(edition)
```

output:

```
['book1', 'book2', 'book3', 'book4', 'book5']
5
['book1', 'book2', 'book3', 'book4', 'book5', 'book6']
book1
book6
[2000, 2001, 2002, 2003, 2004]
['book1', 'book2', 'book3', 'book4', 'book5', 'book6', 'book7', 'book8']
['book1', 'book2', 'book3', 'book4', 'book5', 'book6', 'book7', 'book8', 'book9']
[1999, 2001, 2002, 2003, 2004]
[2001, 2002, 2003]
[1999, 2001, 2002, 2003]
['book1', 'book2', 'book3', 'book4', 'book5', 'book6', 'book7', 'book8']
[1999, 2001]
[]
```

2. Create a tuple for components of a Car and show all the operations

```
car_component=()
print(car_component)
car_component=('engine','break','gear','steering','battery')
print(car_component)
print(len(car_component))
print(type(car_component))
car_components='clutch','bonnett','horn'
x,y,z=car_components
print(x)
print(car_component+car_components)    #add element
print(car_component[0])
print(car_component[1:4])              #slicing a tuple
print(car_component[-1])
print((car_component)+('tire','windshield'))
print(('car')*5)
print('break' not in car_component)
print(max(car_component))
print(min(car_component))
print(sorted(car_components))
print(tuple("car"))
for i in car_component:
    print(i)
print('gear' in car_component)
print('engine' not in car_component) #using membership operator
print(car_component.count('battery'))
```

output:

```
()
('engine', 'break', 'gear', 'steering', 'battery')
5
<class 'tuple'>
clutch
('engine', 'break', 'gear', 'steering', 'battery', 'clutch', 'bonnett', 'horn')
engine
('break', 'gear', 'steering')
battery
('engine', 'break', 'gear', 'steering', 'battery', 'tire', 'windshield')
carcarcarcarcar
False
steering
battery
['bonnett', 'clutch', 'horn']
('c', 'a', 'r')
engine
break
gear
steering
battery
True
False
1
```

3. Create a set to accept more values and print the elements after removing the duplicate contents.

Program:

```
set={}
print(set)
set={1,2,3,'a','b','c',1,2,'a'}
print(set)
set.add('d')
print(set)
for i in set:
    print(i)
print(len(set))
print(type(set))
set.remove('a')
print(set)
set.pop()
print(set)
set.clear()
print(set)
s1={1,2}
s2={2,4}
print(s1|s2)
print(s1&s2)
print(s1-s2)
print(s1^s2)
```

output:

```
{}
{1, 2, 'c', 3, 'a', 'b'}
{1, 2, 'c', 3, 'd', 'a', 'b'}
1
2
c
3
d
a
b
7
<class 'set'>
{1, 2, 'c', 3, 'd', 'b'}
{2, 'c', 3, 'd', 'b'}
set()
{1, 2, 4}
{2}
{1}
{1, 4}
```

4. Write a program to print the specifications of the laptop using dictionary with its operations.

Program:

```
dict1={}
```

```
dict1={'memory':'8 GB RAM','processor':'intel i7','os':'windows 11','harddrive':'500GB','internet':'wireless internet'}

print(dict1)

dict1['SSD storage']='512GB'

print(dict1)

dict1.pop('SSD storage')

print(dict1)

print(dict1.get('memory'))

print(dict1['processor'])

print(dict1['os'])

print(dict1.get('internet'))

print(dict1.keys())

print(dict1.values())

print(dict1.items())

for i in dict1:

    print(i)

if "memory" in dict1:

    print("yes,'memory in dict'")

print(len(dict1))

print(type(dict1))

dict1.update({"battery life":'50 h'})

print(dict1)

dict1.clear()

print(dict1)
```

output:

```
{'memory': '8 GB RAM', 'processor': 'intel i7', 'os': 'windows 11', 'harddrive': '500GB', 'internet': 'wireless internet'}

{'memory': '8 GB RAM', 'processor': 'intel i7', 'os': 'windows 11', 'harddrive': '500GB', 'internet': 'wireless internet', 'SSD storage': '512GB'}

{'memory': '8 GB RAM', 'processor': 'intel i7', 'os': 'windows 11', 'harddrive': '500GB', 'internet': 'wireless internet'}

8 GB RAM

intel i7

windows 11

wireless internet

dict_keys(['memory', 'processor', 'os', 'harddrive', 'internet'])

dict_values(['8 GB RAM', 'intel i7', 'windows 11', '500GB', 'wireless internet'])

dict_items([('memory', '8 GB RAM'), ('processor', 'intel i7'), ('os', 'windows 11'), ('harddrive', '500GB'), ('internet', 'wireless internet')])

memory

processor

os

harddrive

internet

yes,'memory in dict'

5

<class 'dict'>

{'memory': '8 GB RAM', 'processor': 'intel i7', 'os': 'windows 11', 'harddrive': '500GB', 'internet': 'wireless internet', 'battery life': '50 h'}

{}
```