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

Program:

```
list1=["Articles","Newspapers","Comics","Journels","Books","Dictionaries"]
print("The given list:",'\n',list1)

print("\nLength of the list:",len(list1))

print("\repetition:",'\n',list1*3)

list1.append("Manuals")
print("\nThe list after applying append operation : ",'\n',list1)

list2=("Manuscript", "Periodicals")
list1.extend(list2)
print("\nThe list after applying expend operation : ",'\n',list1)

list1.insert(3,"Encyclopedia")
print("\nThe list after applying insert operation : ",'\n',list1)

list1.remove("Comics")
print("\nThe list after applying remove operation : ",'\n',list1)

list1.pop(4)
print("\nThe list after applying pop operation : ",'\n',list1)
```

```
print('\nIndexing:')
print(list1[3])
print(list1[-1])

print('\nSlicing:')
print(list1[:4])
print(list1[2:5])
print(list1[0:4:2])

print('\nnegative Indexing:')
print(list1[::-1])
```

Output:

```
The given list:
['Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries']

Length of the list: 6

Repetition:
['Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries', 'Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries', 'Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries']

The list after applying append operation:
['Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries', 'Manuals']
```

The list after applying expend operation:

['Articles', 'Newspapers', 'Comics', 'Journals', 'Books', 'Dictionaries', 'Manuals', 'Manuscript', 'Periodicals']

The list after applying insert operation:

['Articles', 'Newspapers', 'Comics', 'Encyclopedia', 'Journals', 'Books', 'Dictionaries', 'Manuals', 'Manuscript', 'Periodicals']

The list after applying remove operation:

['Articles', 'Newspapers', 'Encyclopedia', 'Journals', 'Books', 'Dictionaries', 'Manuals', 'Manuscript', 'Periodicals']

The list after applying pop operation:

['Articles', 'Newspapers', 'Encyclopedia', 'Journals', 'Dictionaries', 'Manuals', 'Manuscript', 'Periodicals']

Indexing:

Journals

Periodicals

Slicing:

['Articles', 'Newspapers', 'Encyclopedia', 'Journals']

['Encyclopedia', 'Journals', 'Dictionaries']

['Articles', 'Encyclopedia']

negative Indexing:

['Periodicals', 'Manuscript', 'Manuals', 'Dictionaries', 'Journals', 'Encyclopedia', 'Newspapers', 'Articles']

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

Program:

```
car=("Engine","Battery","Radiator","Brakes","Air filters","Axle","Supension")
print("The given tuple is ",'\n',car)

print("\nThe length of the tuple is",len(car))

print("\nRepetition: ",car[1]*3)
print("\nIndexing: ",car[3])
print("\nSlicing: ",car[2:4])

print("\nEngine in Car ",("Engine" in car))
print("\nBattery not in car ",("Battery" not in car))
```

Output:

The given tuple is

('Engine', 'Battery', 'Radiator', 'Brakes', 'Air filters', 'Axle', 'Supension')

The length of the tuple is 7

Repetition: BatteryBatteryBattery

Indexing: Brakes

Slicing: ('Radiator', 'Brakes')

Engine in Car True

Battery not in car False

>>>

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

Program:

```
lst=[]
n=int(input("\nEnter the number of elements in a list: "))
print("\n")
for i in range(0,n):
    ele=(input("Enter the value "))
    lst.append(ele)
print("\nThe created list with duplicate elements: ",lst)
s=set(lst)
print("\nThe set after removing duplicate elements: ",s)
```

Output:

Enter the number of elements in a list: 6

Enter the value vishwa

Enter the value 22

Enter the value cse

Enter the value b

Enter the value 61

Enter the value vishwa

The created list with duplicate elements: ['vishwa', '22', 'cse', 'b', '61', 'vishwa']

The set after removing duplicate elements: {'b', 'vishwa', '61', '22', 'cse'}

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

Program:

```
d= {"Operating system”: “Windows 10",
   "Microprocessor”: “Intel(R) Core (TM) i3",
   "System memory":"8 GB",
   "Graphic device”: “Intel(R) UHD Graphics",
   "Memory slot":"8GB Samsung 2667MHz"}

print("The defined Dictionary: ",'\n',d)

print("\nThe length of the dictionary: ",len(d))

print("\nRetrieving the value of \"Operating system\": ",d["Operating system"])

print("\nReassigning the value of \"Operating system\": ")
d["Operating system"]="Windows 10 Home Single Language 64-bit"
print("The Dictionary elements after reassigning ",d)

print("\nMembership Operator:")
print("Audio" in d)
print("Audio" not in d)

d["Audio"]="Realtek High Definition Audio"
print("\nThe Updated Dictionary Elements: ")
print(d)
```

```
del d["Memory slot"]
print('\nThe Dictionary elements after deleting \"Memory slot\" key:')
print(d)
```

Output:

```
The defined Dictionary:
 {'Operating system': 'Windows 10', 'Microprocessor': 'Intel(R) Core(TM) i3', 'System memory': '8 GB', 'Graphic device': 'Intel(R) UHD Graphics', 'Memory slot': '8GB Samsung 2667MHz'}

The length of the dictionary:  5

Retrieving the value of "Operating system":  Windows 10

Reassigning the value of "Operating system":
The Dictionary elements after reassigning  {'Operating system': 'Windows 10 Home Single Language 64-bit', 'Microprocessor': 'Intel(R) Core(TM) i3', 'System memory': '8 GB', 'Graphic device': 'Intel(R) UHD Graphics', 'Memory slot': '8GB Samsung 2667MHz'}

Membership Operator:
False
True

The Updated Dictionary Elements:
{'Operating system': 'Windows 10 Home Single Language 64-bit', 'Microprocessor': 'Intel(R) Core(TM) i3', 'System memory': '8 GB', 'Graphic
```

device': 'Intel(R) UHD Graphics', 'Memory slot': '8GB Samsung 2667MHz', 'Audio': 'Realtek High Definition Audio'}

The Dictionary elements after deleting "Memory slot" key:

{'Operating system': 'Windows 10 Home Single Language 64-bit', 'Microprocessor': 'Intel(R) Core (TM) i3', 'System memory': '8 GB', 'Graphic device': 'Intel(R) UHD Graphics', 'Audio': 'Realtek High Definition Audio'}

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