List

Creating List

 # Creating a List

```
List = []

print("Blank List: ")

print(List)
```

 # Creating a List of numbers

```
List = [10, 20, 14]

print("\nList of numbers: ")

print(List)
```

 # Creating a List of strings and accessing using index

```
List = ["Geeks", "For", "Geeks"]

print("\nList Items: ")

print(List[0])

print(List[2])
```

#Creating a list with multiple distinct or duplicate elements

```
# Creating a List with
# the use of Numbers
# (Having duplicate values)
List = [1, 2, 4, 4, 3, 3, 3, 6, 5]
print("\nList with the use of Numbers: ")
print(List)

# Creating a List with
# mixed type of values
# (Having numbers and strings)
```

```
List = [1, 2, 'Geeks', 4, 'For', 6, 'Geeks']
print("\nList with the use of Mixed Values: ")
print(List)
```

Knowing the size of List

```
# Creating a List
List1 = []
print(len(List1))

# Creating a List of numbers
List2 = [10, 20, 14]
print(len(List2))
```

Adding Elements to a List

Using append() method

```
# Python program to demonstrate
# Addition of elements in a List

# Creating a List
List = []
print("Initial blank List: ")
print(List)

# Addition of Elements
# in the List
List.append(1)
List.append(2)
List.append(4)
print("\nList after Addition of Three elements: ")
print(List)

# Adding elements to the List
# using Iterator
for i in range(1, 4):
    List.append(i)
print("\nList after Addition of elements from 1-3: ")
print(List)
```

Using insert() method

```
# Python program to demonstrate
# Addition of elements in a List

# Creating a List
List = [1,2,3,4]
print("Initial List: ")
print(List)

# Addition of Element at
# specific Position
# (using Insert Method)
List.insert(3, 12)
List.insert(0, 'Geeks')
print("\nList after performing Insert Operation: ")
print(List)
```

#work with array module also..

```
import array

int_array = array.array('i', [])

print("Enter elemnts")

# using append()

for i in range(1,5):

    int_array.insert(int(input()),i)

for i in range(1,5):

    print(int_array[i-1], end=" ")
```

Using extend() method

```
# Python program to demonstrate
# Addition of elements in a List

# Creating a List
List = [1,2,3,4]
```

```
print("Initial List: ")
print(List)

# Addition of multiple elements
# to the List at the end
# (using Extend Method)
List.extend([8, 'Geeks', 'Always'])
print("\nList after performing Extend Operation: ")
print(List)
```

Accessing elements from the List

```
# Python program to demonstrate
# accessing of element from list

# Creating a List with
# the use of multiple values
List = ["Geeks", "For", "Geeks"]

# accessing a element from the
# list using index number
print("Accessing a element from the list")
print(List[0])
print(List[2])
```

Negative indexing

```
List = [1, 2, 'Geeks', 4, 'For', 6, 'Geeks', ‘malayalam’]

# accessing a element using
# negative indexing
print("Accessing element using negative indexing")

# print the last element of list
print(List[-1])

# print the third last element of list
print(List[-3])
```

Removing Elements from the List

Using remove() method

```
# Python program to demonstrate
# Removal of elements in a List

# Creating a List
List = [1, 2, 3, 4, 5, 6,
       7, 8, 9, 10, 11, 12]
print("Intial List: ")
print(List)

# Removing elements from List
# using Remove() method
List.remove(5)
List.remove(6)
print("\nList after Removal of two elements: ")
print(List)

# Removing elements from List
# using iterator method
for i in range(1, 5):
   List.remove(i)
print("\nList after Removing a range of elements: ")
print(List)
```

Using pop() method

```
List = [1,2,3,4,5]

# Removing element from the
# Set using the pop() method
List.pop()
print("\nList after popping an element: ")
print(List)

# Removing element at a
# specific location from the
# Set using the pop() method
List.pop(2)
print("\nList after popping a specific element: ")
print(List)
```

Slicing of a List

```
# Python program to demonstrate
# Removal of elements in a List

# Creating a List
List = ['G','E','E','K','S','F',
       'O','R','G','E','E','K','S']
print("Intial List: ")
print(List)

# Print elements of a range
# using Slice operation
Sliced_List = List[3:8]
print("\nSlicing elements in a range 3-8: ")
print(Sliced_List)

# Print elements from a
# pre-defined point to end
Sliced_List = List[5:]
print("\nElements sliced from 5th "
     "element till the end: ")
print(Sliced_List)

# Printing elements from
# beginning till end
Sliced_List = List[:]
print("\nPrinting all elements using slice operation: ")
print(Sliced_List)
```

Negative index List slicing

```
# Creating a List
List = ['G','E','E','K','S','F',
       'O','R','G','E','E','K','S']
print("Initial List: ")
print(List)

# Print elements from beginning
# to a pre-defined point using Slice
Sliced_List = List[:-6]
print("\nElements sliced till 6th element from last: ")
```

```
print(Sliced_List)

# Print elements of a range
# using negative index List slicing
Sliced_List = List[-6:-1]
print("\nElements sliced from index -6 to -1")
print(Sliced_List)

# Printing elements in reverse
# using Slice operation
Sliced_List = List[::-1]
print("\nPrinting List in reverse: ")
print(Sliced_List)

print(Sliced_List[::])
```

#Loop over list

```
testList = ["Canada", "Japan", "London", "Germany", "Africa"]

for item in testList:

    print(item)
```

#Check if item exists in List

```
testList = ["Canada", "Japan", "London", "Germany", "Africa"]

if  "Japan" in testList:

    print("Yes")
```

Questions:

1) Write a program to check how many Armstrong numbers are there in the given heterogeneous List?
2) Write a program to check how many strings are there in the given heterogeneous List?
3) Write a program to check how many palindrome strings are there in the given heterogeneous List?