**Slicing**

list1 = [10,20,30,40,50,60,70]

print (list1[1])

print (list1[0:3])

print (list1[-1])

print (list1[-4])

print (list1[-4 : -2])

print (list1[-4 : ])

**Concatenation**

list2 = [100,110,120]

print (list1+list2+[50,51,52])

**Repeat**

print (list2 \* 3)

**Member ship**

print (150 in list2)

**Delete from List (Del , Remove , Pop)**

list1 = ['John','Sam','Rick', 'Jim']

del (list1[1])

print (list1)

Del on row

list1 = ['John','Sam','Rick', 'Jim']

del (list1[0:])

print (list1)

list1 = ['John','Sam','Rick', 'Jim']

a = list1.pop(2)

print (a)

print (list1)

list1 = ['John','Sam','Rick', 'Jim']

a = list1.remove ('John')

print (a)

print (list1)

**append**

list1 = [1,2,3,4,5,6]

list1.append (7)

print (list1)

list1 = []

for x in [1,2,3,4,5]:

list1.append (x \* 2)

print (list1)

list1 = [x \* 2 for x in [1,2,3,4,5]]

print (list1)

**Append, Insert, Extend**

list1 = [1,2,3,4,5,6]

list1.append (15)

list1.extend (['A','B','C'])

list1.insert (2, 'M')

list1.insert (2, ['P','Q','R'])

print (list1)

**sort**

list1 = ['Rick','Jim','Mark','Jack','Ken']

list2 = sorted (list1)

print (list1)

print (list2)

**sort – Example 2**

list1 = ['Rick','Jim','Mark','10','50','60','Jack','jack','Ken']

list2 = sorted (list1)

print (list1)

print (list2)

**Sort /Sorted**

**sort() function will modify the list it is called on.**

**sorted() function will create a new list containing a sorted version of the list**

**sorted()**

x = [10,20,30,15,12,40,22,12]

print (sorted(x)) # Sorted order

sortx= sorted(x)

print (x) # No change to original list

print (sortx)

**sort()**

x = [10,20,30,15,12,40,22,12]

print (x.sort()) # Return None

sortx= x.sort() # Not able to assign

print (x) # x Sorted

print (sortx)

**Print in Reverse**

print (list1[::-1])

print (list1[4:2:-1])

**List Summary**

**#Making a list:**

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

# Getting the first element

first\_col = colors[0]

# Getting the second element

second\_col = colors[1]

# Getting the last element

newest\_col = colors[-1]

**#Modifying individual items:**

# Changing an element

colors[0] = 'Yellow'

colors[-2] = 'Red'

#Adding elements:

# Adding an element to the end of the list

colors.append('Orange')

# Starting with an empty list

colors = []

colors.append('Red')

colors.append('Blue')

colors.append('Green')

print (colors)

# Inserting elements at a particular position

colors.insert(0, 'Violet')

colors.insert(2, 'Purple')

print (colors)

# Removing elements:

# Deleting an element by its position

del colors[-1]

print (colors)

# Removing an item by its value

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

colors.remove('Green')

print (colors)

#Popping elements:

# Pop the last item from a list

most\_recent\_col = colors.pop()

print(most\_recent\_col)

# Pop the first item in a list

first\_col = colors.pop(0)

print(first\_col)

print (colors)

# Length

num\_colors = len(colors)

print("We have " + str(num\_colors) + " colors.")

# Sorting a list:

# Sorting a list permanently

colors.sort()

print (colors)

# Sorting a list permanently in reverse alphabetical order

colors.sort(reverse=True)

print (colors)

# Sorting a list temporarily

print(sorted(colors))

print(sorted(colors, reverse=True))

# Reversing the order of a list

colors.reverse()

#Looping through a list:

# Printing all items in a list

for col in colors:

print (col)

# Printing a message for each item, and a separate message afterwards

for col in colors:

print("Welcome, " + col + "!")

print("Welcome, we're glad to see you all!")

#The range() function:

# Printing the numbers 0 to 2000

for num in range(2001):

print(num)

# Printing the numbers 1 to 2000

for num in range(1, 2001):

print(num)

# Making a list of numbers from 1 to a million

nums = list(range(1, 1000001))

#Simple statistics:

# Finding the minimum value in a list

nums = [23, 22, 44, 17, 77, 55, 1, 65, 82, 2]

num\_min = min(nums)

print (num\_min)

# Finding the maximum value

nums = [23, 22, 44, 17, 77, 55, 1, 65, 82, 2]

num\_max = max(nums)

# Finding the sum of all numbers

nums = [23, 22, 44, 17, 77, 55, 1, 65, 82, 2]

total\_num = sum(nums)

#Slicing a list:

# Getting the first three items

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

first\_three = colors [:3]

# Getting the middle three items

middle\_three = colors[1:4]

# Getting the last three items

last\_three = colors[-3:]

#Copying a list:

# Making a copy of a list

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

copy\_of\_colors = colors[:]

print (copy\_of\_colors)

#List of Comprehensions:

**# Using a loop to generate a list of square numbers**

squr = []

for x in range(1, 11):

sq= x\*\*2

squr.append(sq)

print (squr)

# Using a comprehension to generate a list of square numbers

squr = [x\*\*2 for x in range(1, 11)]

print (squr)

# Using a loop to convert a list of names to upper case

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

upper\_cols = []

for cols in colors:

upper\_cols.append(cols.upper())

# Using a comprehension to convert a list of names to upper case

colors = ['Red', 'Blue', 'Green', 'Black', 'White']

upper\_cols = [cols.upper() for cols in colors]

print (upper\_cols)