In [1]:
```
#to create a list
# empty list
my_list1 = []

# list of integers
my_list2 = [1, 2, 3]

# list with mixed data types
my_list3 = [1, "Hello", 3.4]
```

In [2]:
```
my_list1
```

Out[2]:
```
[]
```

In [3]:
```
my_list2
```

Out[3]:
```
[1, 2, 3]
```

In [4]:
```
my_list3
```

Out[4]:
```
[1, 'Hello', 3.4]
```

In [5]:
```
# nested list.
# nested list
my_list4 = ["mouse", [8, 4, 6], ['a']]
my_list4
```

Out[5]:
```
['mouse', [8, 4, 6], ['a']]
```

In [6]:
```
#to access elements from a list
# List indexing

my_list = ['p', 'r', 'o', 'b', 'e']

# Output: p
print(my_list[0])

# Output: o
print(my_list[2])

# Output: e
print(my_list[4])

# Nested List
n_list = ["Happy", [2, 0, 1, 5]]

# Nested indexing
print(n_list[0][1])

print(n_list[1][3])
```

```
p
o
e
a
5
```

In [7]:
```
#Negative indexing
# Negative indexing in lists
my_list = ['p','r','o','b','e']

print(my_list[-1])

print(my_list[-5])
```

```
e
p
```

In [8]:
```
#to slice lists in Python
# List slicing in Python

my_list = ['p','r','o','g','r','a','m','i','z']

# elements 3rd to 5th
print(my_list[2:5])

# elements beginning to 4th
print(my_list[:-5])

# elements 6th to end
print(my_list[5:])

# elements beginning to end
print(my_list[:])
```

```
['o', 'g', 'r']
['p', 'r', 'o', 'g']
['a', 'm', 'i', 'z']
['p', 'r', 'o', 'g', 'r', 'a', 'm', 'i', 'z']
```

In [9]:
```
#to change or add elements to a list
# Correcting mistake values in a list
odd = [2, 4, 6, 8]

# change the 1st item
odd[0] = 1

print(odd)

# change 2nd to 4th items
odd[1:4] = [3, 5, 7]

print(odd)
```

```
[1, 4, 6, 8]
[1, 3, 5, 7]
```

In [10]:
```
#add one item to a list using the append() method or add several items using exte
# Appending and Extending lists in Python
odd = [1, 3, 5]

odd.append(7)

print(odd)

odd.extend([9, 11, 13])

print(odd)
```

```
[1, 3, 5, 7]
[1, 3, 5, 7, 9, 11, 13]
```

In [11]:
```
# to combine two lists. This is also called concatenation
# Concatenating and repeating lists
odd = [1, 3, 5]

print(odd + [9, 7, 5])

print(["re"] * 3)
```

```
[1, 3, 5, 9, 7, 5]
['re', 're', 're']
```

In [12]:
```
# insert one item at a desired location by using the method insert() or insert mu
# Demonstration of list insert() method
odd = [1, 9]
odd.insert(1,3)

print(odd)

odd[2:2] = [5, 7]

print(odd)
```

```
[1, 3, 9]
[1, 3, 5, 7, 9]
```

In [13]:
```
#to delete or remove elements from a list
# Deleting list items
my_list = ['p', 'r', 'o', 'b', 'l', 'e', 'm']

# delete one item
del my_list[2]

print(my_list)

# delete multiple items
del my_list[1:5]

print(my_list)

# delete entire list
del my_list
```

```
['p', 'r', 'b', 'l', 'e', 'm']
['p', 'm']
```

In [14]:
```
#use the clear() method to empty a list
my_list = ['p','r','o','b','l','e','m']
my_list.remove('p')

# Output: ['r', 'o', 'b', 'l', 'e', 'm']
print(my_list)

# Output: 'o'
print(my_list.pop(1))

# Output: ['r', 'b', 'l', 'e', 'm']
print(my_list)

# Output: 'm'
print(my_list.pop())

# Output: ['r', 'b', 'l', 'e']
print(my_list)

my_list.clear()

# Output: []
print(my_list)
```

```
['r', 'o', 'b', 'l', 'e', 'm']
o
['r', 'b', 'l', 'e', 'm']
m
['r', 'b', 'l', 'e']
[]
```

In [15]:
```
#List Membership Test
#We can test if an item exists in a list or not, using the keyword in.

my_list = ['p', 'r', 'o', 'b', 'l', 'e', 'm']

# Output: True
print('p' in my_list)

# Output: False
print('a' in my_list)

# Output: True
print('c' not in my_list)
```

```
True
False
True
```

In [16]:
```
#Iterating Through a List
#Using a for loop we can iterate through each item in a list.

for fruit in ['apple','banana','mango']:
    print("I like",fruit)
```

```
I like apple
I like banana
I like mango
```

In [ ]:

In [ ]: