Assignment Instructions

```
Hello Innominion,
```

- **Try to attempt all the questions in every possible way.**
- **Some other topics are required to solve some questions. don't panic.**
- **Those questions can be answered after the topics are taught.**

- Join Mentoring Session for the Support/Doubts Resolving with Our Technical Mentors (2.00 PM - 6.00 PM Mon-Sat)

Happy Learning !!!

LIST

Question: :Create a list of numbers

```
nums = [1,2,3,4]
```

In [1]:
```
1  x=[1,2,3,4]
2  x
```

Out[1]: [1, 2, 3, 4]

In [ ]:
```
1
```

** Question: Remove number "3" in a list**

In [2]:
```
1  # Method 1
2  l=[1,2,3,4]
3  l.remove(3)
4  l
```

Out[2]: [1, 2, 4]

In [3]:
```
1  # Method 2
2  l=[1,2,3,4]
3  del l[2]
4  l
```

Out[3]: [1, 2, 4]

In [4]:
```
1  # Method 3
2  l=[1,2,3,4]
3  l.pop(2)
4  l
```

Out[4]: [1, 2, 4]

Question: :Insert number "1" in 0th position

- lst = [2,3,4]

In [5]:
```
1  l=[2,3,4]
2  l.insert(0,1)
3  l
```

Out[5]: [1, 2, 3, 4]

Question: Insert "two-and-half" in 2nd position

In [6]:
```
1  l=[1,2,3,4]
2  l.insert(2,"two-and-half")
3  l
```

Out[6]: [1, 2, 'two-and-half', 3, 4]

In [ ]:
```
1
```

Question: phrase = "Don't panic!"

- **Convert above text into list**

In [7]:
```
1  # CODE HERE
2  p="Don't panic!"
3  a=list(p)
4  a
```

Out[7]: ['D', 'o', 'n', "'", 't', ' ', 'p', 'a', 'n', 'i', 'c', '!']

convert into list

In [8]:
```
1  p="Don't panic!"
2  a=list(p)
3  a
```

Out[8]: ['D', 'o', 'n', "'", 't', ' ', 'p', 'a', 'n', 'i', 'c', '!']

In [ ]:
```
1
```

Question: Remove ** ' and ! in the list**

```
In [9]:   1  p="Don't panic!"
          2  a=list(p)
          3  a.remove('!')
          4  a
          5  a.remove("'")
          6  a
```

Out[9]: ['D', 'o', 'n', 't', ' ', 'p', 'a', 'n', 'i', 'c']

```
In [ ]:   1
```

Question: Remove "p" , "a", "n","D" and extend at the last

```
In [10]:   1  # CODE HERE
           2  a.remove('p')
           3  a
           4  a.remove('a')
           5  a
           6  a.remove('n')
           7  a
           8  a.remove('D')
           9  a
          10  a.extend(['p','a','n','D'])
          11  a
```

Out[10]: ['o', 't', ' ', 'n', 'i', 'c', 'p', 'a', 'n', 'D']

```
In [ ]:   1
```

Question: Join the given list ['p', 'a', 'n', 'D', 'a']

```
In [ ]:   1  # CODE HERE
```

```
In [11]:   1  l=['p','a','n','D','a']
           2  a="".join(l)
           3  print(a)
```

panDa

Tuples

Question: Create a tuples for numbers 31,24,35,85 as nums
```

```
In [12]:   1  # CODE HERE
           2  a=(31,24,35,85)
           3  a
           4  print(type(a))
           5  print(a)
```

```
<class 'tuple'>
(31, 24, 35, 85)
```

```
In [ ]:    1
```

Question: Remove number "35" in a tuple

Hint: Convert into list

```
In [13]:   1  # CODE HERE
           2  b=list(a)
           3  print(b)
           4  b.remove(35)
           5  c=tuple(b)
           6  c
```

```
[31, 24, 35, 85]
```

Out[13]: (31, 24, 85)

```
In [ ]:    1
```

Extent tuple (85,19)

```
In [14]:   1  # CODE HERE
           2  d=list(c)
           3  d.extend([85,19])
           4  tuple(d)
```

Out[14]: (31, 24, 85, 85, 19)

```
In [ ]:    1
```

Question: Write code to check whether an element ('i') exists within a tuple.

- tpl = ('i','n"n','0')

```
In [15]:   1  # CODE HERE
           2  t=('i','n','n','o')
           3  for x in t:
           4      if x=='i':
           5          print("True")
           6
```

True

```
In [ ]:    1
```

Question: Write a python code to replace/insert the value

- list = ['Hello',100,[],'innomatics']

```
In [16]:   1  # CODE HERE
           2  list=['Hello',100,[],'innomatics']
           3  list[2]=[200]
           4  list
```

Out[16]: ['Hello', 100, [200], 'innomatics']

```
In [ ]:    1
```

Question: Write a Python program to reverse a tuple.

```
In [18]:   1  # CODE HERE
           2  tpl = ("Innomatics")
           3  x=reversed(tpl)
           4  tuple(x)
```

Out[18]: ('s', 'c', 'i', 't', 'a', 'm', 'o', 'n', 'n', 'I')

```
In [19]:   1  tpl = (1,2,3)+(4,)
           2  tpl
```

Out[19]: (1, 2, 3, 4)

Question: Write a Python program to add one more value at last postion of tuples in a list

- tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
- hint- use for loop

```
1  # CODE HERE
2  tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
3  for a in tpl:
4      x=[a+tuple([100])]
5      print(x)
```

```
[(10, 20, 40, 100)]
[(40, 50, 60, 100)]
[(70, 80, 90, 100)]
```

```
1  # CODE HERE
2  tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
3  x=[a+tuple([100])for a in tpl]
4  print(x)
```

```
[(10, 20, 40, 100), (40, 50, 60, 100), (70, 80, 90, 100)]
```

Question: Write a Python program to replace last value of tuples in a list

- tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
- hint- use for loop

```
1  # CODE HERE
2  tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
3  for t in tpl:
4      x=[t[:-1]+(100,)]
5      print(x)
```

```
[(10, 20, 100)]
[(40, 50, 100)]
[(70, 80, 100)]
```

```
1  # CODE HERE
2  tpl = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
3  x=[t[:-1]+(100,)for t in tpl]
4  print(x)
```

```
[(10, 20, 100), (40, 50, 100), (70, 80, 100)]
```

Question: If the following string is given as input to the program:

- '5 2 3 6 6 5'

FInd the secong higest value from that

In [24]:
```python
1  # CODE HERE
2  #x="5 2 3 6 6 5"
3  x=input("Enter the numbers in a string:")
4  high=max(x[0],x[1])
5  second_high=min(x[0],x[1])
6  for y in range(len(x)):
7      if x[y]>high:
8          second_high=high
9          high=x[y]
10      elif x[y]>second_high and high!=x[y]:
11          second_high=x[y]
12      elif high==second_high and second_high!=x[y]:
13          second_high=x[y]
14  print("second highest is:",str(second_high))
```

Enter the numbers in a string:5 2 3 6 6 4 5
second highest is: 5

In [31]:
```python
1  # CODE HERE
2  #x="5 2 3 6 6 5"
3  x=input("Enter the numbers in a string:")
4  high=max(x[0],x[1])
5  second_high=min(x[0],x[1])
6  for y in range(len(x)):
7      if x[y]>high:
8          second_high=high
9          high=x[y]
10      elif x[y]>second_high and high!=x[y]:
11          second_high=x[y]
12      elif high==second_high and second_high!=x[y]:
13          second_high=x[y]
14  print("second highest is:",str(second_high))
```

Enter the numbers in a string:5 2 3 6 6 7 3 8 9
second highest is: 8

Question: By using list comprehension, please write a program to print the list after removing the 0th,4th,5th numbers in [12,24,35,70,88,120,155].

In [ ]:
```python
1  # CODE HERE
```

Question: With a given tuple (1,2,3,4,5,6,7,8,9,10), write a program to print the first half values in one line and the last half values in one line.

```
In [30]:  1  x=(1,2,3,4,5,6,7,8,9,10)
          2  y=x[:5]
          3  z=x[5:]
          4  print(y)
          5  print(z)
```

```
(1, 2, 3, 4, 5)
(6, 7, 8, 9, 10)
```

Question: Write a program to generate and print another tuple whose values are even numbers in the given tuple (1,2,3,4,5,6,7,8,9,10)

```
In [29]:  1  x=(1,2,3,4,5,6,7,8,9,10)
          2  print(x)
          3  print("The Even Numbers in the given Tuple are:")
          4  for i in range(len(x)):
          5      if(x[i]%2 == 0):
          6          print(x[i],end = " ")
```

```
(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
The Even Numbers in the given Tuple are:
2 4 6 8 10
```

```
In [ ]:  1
```

Descriptive Questions

1. Explain the difference between list and tuple?

```
In [ ]:  1  # Solution
         2  1) List are mutable where as Tuple are immutable
         3  2) List is represented by "[]" where as Tuple is represented by "()"
```

2. Explain the difference between append() and extend() with examples

```
In [ ]:  1  # Solution
         2  1) append() is used to add single element at the end of the list where as
         3  2) extend() is used to add multiple individual elements at the end of the li
```

```
In [46]:  1  # Examples of append() and extend()
          2  c=[10,20,30]
          3  c.extend([85,19])
          4  c
```

```
Out[46]:  [10, 20, 30, 85, 19]
```

In [47]:
```
1  c=[10,20,30]
2  c.append(85)
3  c
```

Out[47]: [10, 20, 30, 85]

3. Explain the difference between pop() and remove() with examples

In [ ]:
```
1  # Solution
2  1) pop() is used to return rhe removed element from the list where as
3  2) remove() is used to remove the first matching value from the list.
4  3) in pop() we use the index value to remove the element where as
5  4) in remove() we use the element to remove
```

In [32]:
```
1  # Examples of pop() and remove()
2  l=[1,2,3,4]
3  l.remove(3)
4  l
```

Out[32]: [1, 2, 4]

In [33]:
```
1  l=[1,2,3,4]
2  l.pop(2)
3  l
```

Out[33]: [1, 2, 4]

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In [ ]:
```
1
```