Good Morning To All

List Comprehension

Dictionary Comprehension

Set Comprehension

Sending mail using Python

```
In [1]:  1  # List Compresion
         2  # create the new list based on existing the lists
         3  l=[1,2,3,4]
         4
         5
```

```
In [2]:  1  # create a new list Square of every number in given list using Normal list
         2  s=[]
         3  for item in [1,2,3,4,5]:
         4      num = item*item
         5      s.append(num)
         6  print(s)
```

```
[1, 4, 9, 16, 25]
```

```
In [3]:  1  # create a new list Square of every number in given list using list comprehension
         2  # syntax[ouputExpression looping condition]
         3  [item*item for item in [2,3,4,5]]
```

Out[3]: [4, 9, 16, 25]

In [6]:
```python
# print the Multiplication table using list comprehension
[(i,'*',2,'=',i*2)for i in range(1,10+1)]
```

Out[6]:
```
[(1, '*', 2, '=', 2),
 (2, '*', 2, '=', 4),
 (3, '*', 2, '=', 6),
 (4, '*', 2, '=', 8),
 (5, '*', 2, '=', 10),
 (6, '*', 2, '=', 12),
 (7, '*', 2, '=', 14),
 (8, '*', 2, '=', 16),
 (9, '*', 2, '=', 18),
 (10, '*', 2, '=', 20)]
```

In [11]:
```python
# find the sum of digits in given string using list comprehension
s="password@123"
[i for i in s if i.isalpha()]

```

Out[11]: ['p', 'a', 's', 's', 'w', 'o', 'r', 'd']

In [15]:
```python
# Print the numbers to even or odd numbers using list comprehension
[(i,"Even") if i%2==0 else (i,"odd") for i in range(1,10+1)]
```

Out[15]:
```
[(1, 'odd'),
 (2, 'Even'),
 (3, 'odd'),
 (4, 'Even'),
 (5, 'odd'),
 (6, 'Even'),
 (7, 'odd'),
 (8, 'Even'),
 (9, 'odd'),
 (10, 'Even')]
```

In [17]:
```python
# Print the given range in leapyears using list comprehension
[year for year in range(1995,2020+1)if year%4==0 and year%100!=0 or year%400==0 ]
```

Out[17]: [1996, 2000, 2004, 2008, 2012, 2016, 2020]

In [18]:
```python
def leapyear(year):
    if year%4==0 and year%100!=0 or year%400==0:
        print(year)
```

In [19]:
```python
[leapyear(year) for year in range(1995,2000+1)]
```

```
1996
2000
```

Out[19]: [None, None, None, None, None, None]

In [21]:
```python
# Create a words list only contains 3 characters from the given sentence
sentence = "Every one has story"
[word for word in sentence.split() if len(word)==3]
## Outpt - one,has
```

Out[21]: ['one', 'has']

In [ ]:
```python
## Dictionary Comprehension
## syntax {key:value for item in collectionvalues}
```

In [22]:
```python
# Create a dictionary contains square of numbers from 1 to 10
{item:item**2 for item in range(1,11)}
```

Out[22]: {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}

In [24]:
```python
# create a dictionary of character frequency in given string
name = "Python Programming"
{i:name.count(i) for i in name}
```

Out[24]:
```
{'P': 2,
 'y': 1,
 't': 1,
 'h': 1,
 'o': 2,
 'n': 2,
 ' ': 1,
 'r': 2,
 'g': 2,
 'a': 1,
 'm': 2,
 'i': 1}
```

In [25]:
```python
# find the frequency of fruits in given list
fruits = ['apple','orange','apple','banana']
{fruit:fruits.count(fruit) for fruit in fruits}
```

Out[25]: `{'apple': 2, 'orange': 1, 'banana': 1}`

In [28]:
```python
# Set Comprehension
# syntax {ouputexp forloop condition }
# Find the unique characters in given string
name="password"
{char for char in name}
```

Out[28]: `{'a', 'd', 'o', 'p', 'r', 's', 'w'}`

In [29]:
```python
# find the unique items in given list
fruits = ['apple','orange','apple','banana']
{item for item in fruits}
```

Out[29]: `{'apple', 'banana', 'orange'}`

In [30]:
```python
# find the numbers even or odd using dictionary compresions
def isEven(num):
    if num%2==0:
        return "Even"
    return "Odd"
```

In [33]:
```python
n=int(input())
{i:isEven(i) for i in range(1,n+1)}
```

20

Out[33]: {1: 'Odd',
 2: 'Even',
 3: 'Odd',
 4: 'Even',
 5: 'Odd',
 6: 'Even',
 7: 'Odd',
 8: 'Even',
 9: 'Odd',
 10: 'Even',
 11: 'Odd',
 12: 'Even',
 13: 'Odd',
 14: 'Even',
 15: 'Odd',
 16: 'Even',
 17: 'Odd',
 18: 'Even',
 19: 'Odd',
 20: 'Even'}

```
In [ ]:    1   # Sending mail to Gmail Account
           2   # first of all importing module "smtplib"
           3   def sendmail():
           4       send=int(input("how many friends to send email:\n"))
           5       friends=[]
           6       emails = []
           7       message = input("enter message to send:\n")
           8       if send!=0:
           9           for s in range(0,send):
          10               name = input("enter name")
          11               friends.append(name)
          12               email = input("enter email")
          13               emails.append(email)
          14       import smtplib#simple mail transfer protocol library
          15       server = smtplib.SMTP("smtp.gmail.com",587)
          16       server.starttls() # transport layer security
          17       server.login("ravisastry.b@apssdc.in","##")
          18       for friend in range(0,len(friends)):
          19           print(message,":",friends[friend],":",emails[friend])
          20           server.sendmail("ravisastry.b@apssdc.in",emails[friend],message)
          21       server.quit()
          22   sendmail()
```

```
In [1]:    1   # Take a break program using python
           2   import time
           3   time.ctime()
```

```
C:\Users\ravi sastry\Anaconda3\lib\site-packages\ipykernel\parentpoller.py:116: UserWarning: Parent poll fail
ed.  If the frontend dies,
            the kernel may be left running.  Please let us know
            about your system (bitness, Python, etc.) at
            ipython-dev@scipy.org
    ipython-dev@scipy.org""")
```

Out[1]: 'Wed May 27 11:47:37 2020'

In [2]:
```python
#time.sleep(5)
import time
for i in range(10):
    time.sleep(10)
    print(time.ctime(),i)
```

```
Wed May 27 11:49:44 2020 0
Wed May 27 11:49:54 2020 1
Wed May 27 11:50:04 2020 2
Wed May 27 11:50:14 2020 3
Wed May 27 11:50:24 2020 4
Wed May 27 11:50:34 2020 5
Wed May 27 11:50:44 2020 6
Wed May 27 11:50:54 2020 7
Wed May 27 11:51:04 2020 8
Wed May 27 11:51:14 2020 9
```

In [4]:
```python
import webbrowser
webbrowser.open("http://www.google.com")
```

Out[4]: True

In [5]:
```python
import time
import webbrowser
totalbreaks=4
count=0
while count<=totalbreaks:
    time.sleep(1*60*60)
    if count==1:
        webbrowser.open("http://github.com")
    elif count==2:
        webbrowser.open("http://facebook.com")
    elif count==3:
        webbrowser.open("http://gmail.com")
    elif count==4:
        webbrowser.open("http://engineering.apssdc.in")
    count+=1
```

In [ ]:
```python

```