In [2]:
```
squares_list= []

for x in range(1,10):
    squares_list.append(x**2)
print(squares_list)
```

```
[1, 4, 9, 16, 25, 36, 49, 64, 81]
```

In [3]:
```
squares_list = [x**2 for x in range(1,10)]
print(squares_list)
```

```
[1, 4, 9, 16, 25, 36, 49, 64, 81]
```

In [4]:
```
paragraph = ["There was a fox." , 'It was brown in color.', "It was seen near
 that farm sometime back"]
```

In [ ]:
```
# ['There', 'was', 'a', 'fox.', 'It', 'was', 'brown', 'in', 'color.', 'It', 'w
as', 'seen', 'near', 'that', 'farm', 'sometime', 'back']
```

In [5]:
```
single_word_list =[]

for sentence in paragraph:
    for word in sentence.split():
        single_word_list.append(word)

print(single_word_list)
```

```
['There', 'was', 'a', 'fox.', 'It', 'was', 'brown', 'in', 'color.', 'It', 'wa
s', 'seen', 'near', 'that', 'farm', 'sometime', 'back']
```

In [6]:
```
single_word_list  = [word for sentence in paragraph for word in sentence.split
()]
print(single_word_list)
```

```
['There', 'was', 'a', 'fox.', 'It', 'was', 'brown', 'in', 'color.', 'It', 'wa
s', 'seen', 'near', 'that', 'farm', 'sometime', 'back']
```

In [7]:
```
#list comp with if statement
vowels = ['a','e','i','o','u']
vowels_from_sentence =[]
for sentence in paragraph:
    for word in sentence.split():
        if word[0].lower() in vowels:
            vowels_from_sentence.append(word)

print(vowels_from_sentence)
```

```
['a', 'It', 'in', 'It']
```

In [15]:
```
#[ for sentence in paragraph]
#[ for sentence in paragraph for word in sentence.split()]
```

```
  File "<ipython-input-15-5ed86587bef0>", line 3
    print(single_word_list if word[0].lower() in ['a','e','i','o','u'])
                                                                       ^
SyntaxError: invalid syntax
```

In [8]:
```
vowels_comp = [word for sentence in paragraph for word in sentence.split() if
word[0].lower() in vowels]
print(vowels_comp)
```

```
['a', 'It', 'in', 'It']
```

In [9]:
```
squared_dictionary = {num : num**2 for num in range(0, 25)}
print(squared_dictionary)
```

```
{0: 0, 1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 1
1: 121, 12: 144, 13: 169, 14: 196, 15: 225, 16: 256, 17: 289, 18: 324, 19: 36
1, 20: 400, 21: 441, 22: 484, 23: 529, 24: 576}
```

In [10]:
```
students_data = {1:['Shivam Bansal', 24] , 2:['Udit Bansal',25], 3:['Sonam Gup
ta', 26], 4:['Saif Ansari',24], 5:['Huzefa Calcuttawala',27]}
```

In [11]:
```
names_dict ={}

#iterate over each key, val pair
for roll_num,details in students_data.items():
    if roll_num%2==0:
        names_dict[roll_num]= details[0]
print(names_dict)
```

```
{2: 'Udit Bansal', 4: 'Saif Ansari'}
```

In [12]:
```
names_comp = {roll_num:details[0] for roll_num,details in students_data.items
() if roll_num%2==0}
print(names_comp)
```

```
{2: 'Udit Bansal', 4: 'Saif Ansari'}
```

In [16]:
```
print([i+j for i in "abc" for j in "def"])
```

```
['ad', 'ae', 'af', 'bd', 'be', 'bf', 'cd', 'ce', 'cf']
```

In [17]:
```
d = {x.upper(): x*3 for x in 'acbd'}
print(d)
```

```
{'A': 'aaa', 'C': 'ccc', 'B': 'bbb', 'D': 'ddd'}
```