In [ ]:
```
```

In [11]:
```
from collections import deque
queue = deque(["Eric", "John", "Michael"])
queue.append("Terry")           # Terry arrives
queue.append("Graham")          # Graham arrives
queue.popleft()
queue.popleft()
print(queue)
```

```
deque(['Michael', 'Terry', 'Graham'])
```

In [14]:
```
squares = [x**2 for x in range(10)]
print(squares)
```

```
[0, 1, 4, 9, 16, 25, 36, 49, 64, 81]
```

In [16]:
```
[(x, y) for x in [1,2,3] for y in [3,1,4] if x != y]
[(1, 3), (1, 4), (2, 3), (2, 1), (2, 4), (3, 1), (3, 4)]
```

Out[16]:
```
[(1, 3), (1, 4), (2, 3), (2, 1), (2, 4), (3, 1), (3, 4)]
```

In [17]:
```
combs = []
for x in [1,2,3]:
    for y in [3,1,4]:
        if x != y:
            combs.append((x, y))

combs
```

Out[17]:
```
[(1, 3), (1, 4), (2, 3), (2, 1), (2, 4), (3, 1), (3, 4)]
```

In [20]:
```
combs =[]
for x in [1,2,3]:
    for y in [3,1,4]:
        if x!=y:
            combs.append((x,y))
combs
```

Out[20]:
```
[(1, 3), (1, 4), (2, 3), (2, 1), (2, 4), (3, 1), (3, 4)]
```

In [22]:
```
vec=[-2,3,-5,0]
[x*2 for x in vec]
```

Out[22]:
```
[-4, 6, -10, 0]
```

In [23]:
```
[x for x in vec if x>=0]
```

Out[23]:
```
[3, 0]
```

In [25]:
```
[abs(x) for x in vec]
```

Out[25]:
```
[2, 3, 5, 0]
```

In [27]:
```
freshfruit = ['  banana', '  loganberry ', 'passion fruit  ']
[weapon.strip() for weapon in freshfruit]
```

In [28]:
```
[(x,x**2) for x in range(6)]
```

Out[28]:
```
[(0, 0), (1, 1), (2, 4), (3, 9), (4, 16), (5, 25)]
```

In [29]:
```
# create a list of 2-tuples like (number, square)
[(x, x**2) for x in range(6)]
[(0, 0), (1, 1), (2, 4), (3, 9), (4, 16), (5, 25)]
```

Out[29]:
```
[(0, 0), (1, 1), (2, 4), (3, 9), (4, 16), (5, 25)]
```

In [ ]:
```

```

In [32]:
```
# flatten a list using a listcomp with two 'for'
vec = [[1,2,3], [4,5,6], [7,8,9]]
[num for elem in vec for num in elem]
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

Out[32]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [33]:
```
rfd = [[1,2,3],[4,5,6],[7,8,9]]
[num for elem in vec for num in elem]
```

Out[33]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [41]:
```
from math import pi
[(round(pi))]
['3.1', '3.14', '3.142', '3.1416', '3.14159']
```

Out[41]:
```
['3.1', '3.14', '3.142', '3.1416', '3.14159']
```

In [ ]:
```

```