1.Ans

```
Creating empty list
```

In [3]:
```
simple_list=[]
```

```
 Accept 10 numbers from the user and append to it the list if it is an even number
```

In [4]:
```
for i in range(10):
    num =int(input())
    if num % 2 == 0:
      simple_list.append(num)
print(simple_list)
```

```
2
3
4
5
6
7
8
9
10
11
[2, 4, 6, 8, 10]
```

2.Ans

List Comprehension

```
SYNTAX :  new_list = [expression for_loop_one_or_more conditions]
```

```
#Finding Squares
```

In [5]:
```
numbers = [1, 2, 3, 4]
squares = [n**2 for n in numbers]
print(squares)
```

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

#Intersection Of Lists

In [6]:
```
list_a = [1, 2, 3, 4]
list_b = [2, 3, 4, 5]
common_num = [a for a in list_a for b in list_b if a == b]
print(common_num)
```

```
[2, 3, 4]
```

```
#Finding Even Numbers
```

In [7]:
```
input_list = [1, 2, 3, 4, 4, 5, 6, 7, 7]
list_using_comp = [var for var in input_list if var % 2 == 0]
print(list_using_comp)
```

```
[2, 4, 4, 6]
```

3.Ans

In [8]:
```
num=int(input())
d=dict()
for i in range(1,num+1):                #(num+1) for inclusion on num
    d[i]=pow(i,2)

print(d)
```

```
5
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
```

In [9]:
```
num=int(input())
d=dict()
for i in range(1,num+1):                #(num+1) for inclusion on num
    d[i]=pow(i,2)

print(d)
```

```
9
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81}
```

4.Ans

In [17]:
```
cnt=int(input())
x,y = 0,0
for i in range(cnt):
    s = input().split()
    if not s:
        break
    if s[0]=='UP':                  # s[0] indicates Direction
        x-=int(s[1])                # s[1] indicates steps
    if s[0]=='DOWN':
        x+=int(s[1])
    if s[0]=='LEFT':
        y-=int(s[1])
    if s[0]=='RIGHT':
        y+=int(s[1])

dist = round(math.sqrt(x**2 + y**2))
print(dist)
```

```
4
UP 5
DOWN 3
LEFT 3
RIGHT 2
2
```

In [18]:
```
cnt=int(input())
x,y = 0,0
for i in range(cnt):
    s = input().split()
    if not s:
        break
    if s[0]=='UP':                  # s[0] indicates Direction
        x-=int(s[1])                # s[1] indicates steps
    if s[0]=='DOWN':
        x+=int(s[1])
    if s[0]=='LEFT':
        y-=int(s[1])
    if s[0]=='RIGHT':
        y+=int(s[1])

dist = round(math.sqrt(x**2 + y**2))
print(dist)
```

```
2
UP 5
DOWN 2
3
```