

```
# Find the range using list() Constructor
```

```
lst = list(range(1,10))
```

```
print(lst) # [1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
# Find square root without list comprehensions
```

```
for i in list(range(1,10)):
```

```
    print(i**2, end = " ") # 1 4 9 16 25 36 49 64 81
```

```
# Find the square root with list comprehensions
```

```
# Syntax:
```

```
# [ expression for item in iterable]
```

```
squares = [i**2 for i in list(range(1,10))]
```

```
print(squares) # [1, 4, 9, 16, 25, 36, 49, 64, 81]
```

```
# Find the Square root and even numbers
```

```
# Syntax
```

```
# [ expression for item in iterable if condition ]
```

```
squares = [i ** 2 for i in list(range(1, 20)) if i%2 == 0]
```

```
print(squares) # [4, 16, 36, 64, 100, 144, 196, 256, 324]
```

```
# Iterate String using for list
name = "Sai Kiran"
print(list(name))
# ['S', 'a', 'i', ' ', 'K', 'i', 'r', 'a', 'n']

# Iterate String using for loop
for i in name:
    print(i, end = " ") # S a i   K i r a n

# Iterate String using list comprehension
print()
l = [i for i in name]
print(l)
# ['S', 'a', 'i', ' ', 'K', 'i', 'r', 'a', 'n']
```

```
# [ expression(element) for element in iterable if condition if condition]
lst = [i for i in range(50) if i%2 == 0 if i%5 == 0]
print(lst) # [0, 10, 20, 30, 40]

# i is divisible by 2
# i is divisible by 5
```

```
# [ expression(element) if condition else condition for element in iterable]

names = ["admin", "admin", "admins", "admin"]
lst = [i if i == "admin" else "not admin" for i in names]
print(lst) # ['admin', 'admin', 'not admin', 'admin']
```

Nested for loop using list comprehensions

```
l = [ x + y for x in [10, 20, 30] for y in [100, 200, 300]]  
print(l) # [110, 210, 310, 120, 220, 320, 130, 230, 330]
```

$x + y = 10 + 100 = 110$

$x + y = 20 + 200 = 210$

$x + y = 30 + 300 = 310$ so on...

Without list comprehensions

```
l = []  
for x in [10,20,30]:  
    for y in [100, 200, 300]:  
        l.append(x + y)  
print(l) # [110, 210, 310, 120, 220, 320, 130, 230, 330]
```