

## Best Example


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# List Comprehensions in Python

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## 1. Using For loop to Iterate through a String



```
separated_letters = []  
for letter in 'python':  
    separated_letters.append(letter)  
print(separated_letters)
```

```
# OUTPUT  
['p', 'y', 't', 'h', 'o', 'n']
```



```
separated_letters = [ letter for letter in 'python' ]  
print( separated_letters)
```

```
#OUTPUT  
['p', 'y', 't', 'h', 'o', 'n']
```


## 2. Using Lambda functions inside List

```
letters = list(map(lambda y: y, 'python'))  
print(letters)
```

```
#OUTPUT  
['p', 'y', 't', 'h', 'o', 'n']
```




### 3. Using if with List Comprehension



```
even_list = []

for i in range(0,10):
    if i%2 == 0:
        even_list.append(i)
print(even_list)

#OUTPUT
[0, 2, 4, 6, 8]
```



```
even_list = [ i for i in range(10) if i % 2 == 0]
print(even_list)

#OUTPUT
[0, 2, 4, 6, 8]
```


### 4. Nested if with List Comprehension

```
list = ["even" if y%2==0 else "odd" for y in range(5)]
print(list)

# OUTPUT
['even', 'odd', 'even', 'odd', 'even']
```




## 5. Finding Transpose of a Matrix using List Comprehension



```
transposed_matrix = []
matrix = [[1, 2, 3, 4], [4, 5, 6, 8]]
for i in range(len(matrix[0])):
    transposed_row = []
    for row in matrix:
        transposed_row.append(row[i])
    transposed_matrix.append(transposed_row)
print(transposed_matrix)

# OUTPUT
[[1, 4], [2, 5], [3, 6], [4, 8]]
```



```
matrix = [[1, 2],
          [3, 4],
          [5, 6],
          [7, 8]]

transposed_matrix = [[matrix[i][j] for i in range(len(matrix))
                       for j in range(len(matrix[0]))]
                     ]
print(transposed_matrix)

# OUTPUT
[[1, 3, 5, 7],
 [2, 4, 6, 8]]
```



## 6. Finding the elements in a list in which elements are ended with the letter 'b' and the length of that element is greater than 2

```
names = ['Ch', 'Dh', 'Eh', 'cb', 'Tb', 'Td', 'Chb', 'Tdb']  
final_names = [name for name in names if name.lower().endswith('b')  
               and len(name) > 2]  
print(final_names)  
  
# OUTPUT  
['Chb', 'Tdb']
```

## 7. Reverse each String in a Tuple

```
List = [string[::-1] for string in ('python', 'java', 'list')]  
print(List)  
  
# OUTPUT  
['nohtyp', 'avaj', 'tsil']
```



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