

```
In [ ]: L1=[1,3,8,3,7,9]
        L1
```

```
In [ ]: #Creating a List from a range
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```
a = [i for i in range(10)]
print(a)
```

```
In [ ]: #square lists
```

```
squares = [x**2 for x in range(1, 6)]
print(squares)
```

```
In [ ]: #generate series
```

```
cub = [(x**3)+1 for x in range(1, 10)]
print(cub)
```

```
In [ ]: # even numbers from a list
```

```
even_numbers = [num for num in range(1, 10) if num % 2 == 0 ]

print(even_numbers)
```

```
In [ ]: #Convert all characters in a word to uppercase
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```
word = "python"
upper_case = [ch.upper() for ch in word]
print(upper_case)
```

```
In [ ]: l = [x for x in range(10) if x < 5]
        l
```

```
In [ ]: l = [x for x in range(100) if x % 5 == 0]
        l
```

```
In [ ]: #List from existing list
```

```
L1=[1,3,8,3,7,9]
L2=[x*3 for x in L1]
L2
```

```
In [ ]: a = [1, 2, 3, 4, 5]
        square_numbers = [num * num for num in a]
        print(square_numbers)
```

```
In [ ]: a = [2,3,4,5]
        square_numbers = [num ** 2 for num in a]
        print(square_numbers)
```

```
In [ ]: nums = [3, 7, 10, 12]
        result = ["Even" if x % 2 == 0 else "Odd" for x in nums]
        print(result)
```

```
In [ ]: values = [-2, -1, 0, 1, 2]
        pos = [x > 0 for x in values]
        print(pos)
```

```
In [ ]: quote = "life, uh, finds a way"
ls=[char for char in quote if char in "aeiou"]
ls
```

```
In [ ]: #Reverse each word in a list
words = ["cat", "dog", "bat"]
reversed_words = [w[::-1] for w in words]
print(reversed_words)
```

```
In [ ]: # 2D List
matrix = [ [] for i in range(3)]
```

```
In [ ]: #a 3x3 matrix of zeros
matrix = [[0 for j in range(3)] for i in range(3)]
print(matrix)
```

```
In [ ]: #3x3 matrix with numbers 1-3 in each row
matrix = [[j for j in range(1, 4)] for i in range(3)]
print(matrix)
```

```
In [ ]: lm=[[j for j in range(20)] for i in range(10)]
lm
```

```
In [ ]: #Pass a list and print all elements
def show_list(items):
    for i in items:
        print(i)
```

```
In [ ]: numbers = [1, 2, 3, 4, 5]
show_list(numbers)
```

```
In [ ]: #Pass a list and return a new list (squares of numbers)

def square_list(nums):
    result = [n**2 for n in nums]
    return result
```

```
In [ ]: numbers = [1, 2, 3, 4]
squares = square_list(numbers)
print(squares)
```

```
In [ ]: #Convert a list of strings to uppercase

def to_upper(words):
    upper_list = [w.upper() for w in words]
    return upper_list
```

```
In [ ]: #function calling
l = ["python", "java", "c++"]
result = to_upper(l)
print(result)
```

```
In [ ]: #Filter even numbers from a list
def get_even(numbers):
```

```
even_list = [x for x in numbers if x % 2 == 0]  
return even_list
```

```
In [ ]: #function calling  
nums = [1, 2, 3, 4, 5, 6]  
evens = get_even(nums)  
print(evens)
```

```
In [ ]:
```