List Comprehension

1. **Filter Divisible Numbers:**

Create a list of numbers between 1 and 50 that are divisible by 5.

```
divisible = [x for x in range(1,51) if x % 5 ==0 ]
print(divisible)
```

```
[5, 10, 15, 20, 25, 30, 35, 40, 45, 50]

=== Code Execution Successful ===
```

2. **Given a string: "comprehension", create a list of all the vowels in the string.**

```
word = "comprehension"

ans = [x for x in word if x in ['a',"e","o","i","u"]]

print(ans)
```

```
['o', 'e', 'e', 'i', 'o']

=== Code Execution Successfu
```

3. **Write a list to generate all prime numbers less than 50.**

```
prime_numbers = [x for x in range(2, 50) if all(x % y != 0 for
    y in range(2, int(x ** 0.5) + 1))]
print(prime_numbers)
```

```
[2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47]

=== Code Execution Successful ===
```

4. **Given a list of numbers: numbers = [1, 2, 3, 4, 5]**

Create a list of their factorials using list comprehension.

```
numbers = [1, 2, 3, 4, 5]

def factorial(n):
    return 1 if n == 0 or n == 1 else n * factorial(n - 1)

factorials = [factorial(x) for x in numbers]
print(factorials)
```

```
[1, 2, 6, 24, 120]

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```