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Subject: **Programming Lab1**

## Experiment No. 2

**AIM:** Write a program using list comprehension

### **DESCRIPTION:**

List comprehension is an elegant way to define and create list in python. We can create lists just like mathematical statements and in one line only. List comprehensions provide us with a simple way to create a list based on some iterable. During the creation, elements from the iterable can be conditionally included in the new list and transformed as needed.

A list comprehension generally consists of these parts:

- Output expression,
- input sequence,
- a variable representing member of input sequence and
- an optional predicate parts.

For example:


```
lst = [x ** 2 for x in range(1, 11) if x % 2 == 1]
```

here: -

- `x ** 2` is output expression,
- `range(1, 11)` is input sequence,
- `x` is variable and
- `if x % 2 == 1` is predicate part.

### **PROGRAM:**

**# 1. Write a program to find the square of the number**

```
 l = [1,2,3,4,5]  
l2 = [i ** 2 for i in l]  
print(l2)|
```

### **OUTPUT:**

```
[1, 4, 9, 16, 25]
```

## # 2. Write a program to find vowels in string

```
s=input("Enter a string : ")
l2 = [i for i in s if (i == 'a' or i == 'e' or i == 'i' or i == 'o' or i == 'u' or i == 'A' or i == 'E' or i == 'I' or i == 'O' or i == 'U')]
print(l2)
```

### OUTPUT:

```
Enter a string : UMBrella
['U', 'e', 'a']
```

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## # 3. Write a program to find length of all words in the list less than 5 characters

```
l = ["helloo", "world", "umbrella", "off", "runn", "swim"]
l1 = [i for i in l if len(i) < 5]
print(l1)
```

### OUTPUT:

```
['off', 'runn', 'swim']
```

## CONCLUSION:

Thus, from this experiment I implemented the programs in Python Programming Language using list comprehension that allows to reduce the lines of code. I executed programs for find vowels , find words whose length is less than 5 and square of numbers in list.