Python – Program Set II (16.09.2025)

1. Create a list of colors from comma-separated color names entered by the user. Display first and last colors.

```
colors = input("Enter colors separated by commas: ").split(',')

print("Color List:", colors)
print("First color:", colors[0])
print("Last color:", colors[-1])
```

2. Write a python program to read two lists color-list1 and color-list2. Print out all colors from color-list1 not contained in color-list2.

```
list1 = input("Enter colors in list1(seperated with space): ").split()
list2 = input("Enter colors in list2(seperated with space): ").split()
result = []
for color in list1:
    if color not in list2:
        result.append(color)
print(result)
```

3. Write a program to prompt the user for a list of integers. For all values greater than 100, store ‘over’ instead.

```
nums = input("Enter a list of integers separated by spaces: ").split()
result = []
for n in nums:
    n = int(n)    # convert each input to integer
    if n > 100:
        result.append("over")
    else:
        result.append(n)

print(result)
```

4. From a list of integers, create a list after removing even numbers

```
nums = list(map(int, input("Enter a list of integers separated by
spaces: ").split()))
```

```
result = []
for n in nums:
    if n % 2 != 0:    # keep only odd numbers
        result.append(n)
print("Entered numbers:", nums)
print("List after removing even numbers:", result)
```

5. List comprehensions:

   (a) Generate positive list of numbers from a given list of integers

   (b) Square of N numbers

   (c) Form a list of vowels selected from a given word

   (d) Form a list ordinal value of each element of a word (Hint: use ord() to get ordinal values)

```
numbers = [-3,5,-1,8,0,-4]
print("Given inputs is ",numbers)

positive_list = [num for num in numbers if num>0]
squares = [num **2 for num in positive_list]
print("positive numbers ",positive_list)
print("squares",squares)

words = input("Enter some words: ")
vowels = 'aeiouAEIOU'
vowels_list = [char for char in words if char in vowels]
print("Vowels in the word:", vowels_list)

ordinal_values = [ord(char) for char in words]
print("Ordinal values of each character:", ordinal_values)
```

List Comprehension

List comprehension offers a shorter syntax when you want to create a new list based on the values of an existing list.

Syntax:

```
new_list = [expression for item in iterable if condition]
```

expression: This is the operation performed on each item that satisfies the condition.

Example: Form a list of odd numbers from a list of numbers

```
# Sample list
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

# Empty list to store odd numbers
odd_numbers = []

# Loop through numbers and add only odd ones
for num in numbers:
    if num % 2 != 0:
        odd_numbers.append(num)

print("Odd numbers:", odd_numbers)
```

With list comprehension you can do all that with only one line of code:

numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

```
# List comprehension to filter odd numbers
odds = [n for n in numbers if n % 2 != 0]
print("Odd numbers:", odds)
```