Assignment No:3

1) Reverse a list in Python

```
list1 = [10, 20, 30, 40, 50]
list1.reverse()
print("Reversed list:", list1)
```

2) Concatenate two lists index-wise

```
list1 = ["a", "b", "c"]
list2 = ["1", "2", "3"]
result = [i + j for i, j in zip(list1, list2)]
print("Concatenated index-wise:", result)
```

3) Turn every item of a list into its square

```
numbers = [1, 2, 3, 4, 5]
squared = [x**2 for x in numbers]
print("Squared numbers:", squared)
```

4) Concatenate two lists in the following order

```
list1 = ["Hello ", "Take "]
list2 = ["Dear", "Sir"]
combined = [x + y for x in list1 for y in list2]
print("Custom concatenation:", combined)
```

5) Iterate both lists simultaneously

```
names = ["Alice", "Bob", "Charlie"]
ages = [24, 27, 22]
for name, age in zip(names, ages):
    print(f"{name} is {age} years old")
```

6) Remove empty strings from the list of strings

```
strings = ["Apple", "", "Banana", "", "Cherry"]
filtered = [s for s in strings if s]
print("Filtered list (no empty strings):", filtered)
```

7) Add new item to list after a specified item

```
list1 = [10, 20, 30, 40, 50]
item_to_insert_after = 30
new_item = 35
index = list1.index(item_to_insert_after) + 1
list1.insert(index, new_item)
print("Updated list:", list1)
```

8) Extend nested list by adding the sublist

```
nested_list = ["a", "b", ["c", "d"]]
sublist = ["e", "f"]
nested_list[2].extend(sublist)
print("Extended nested list:", nested_list)
```