

Lab Experiments: lists in Python:

- AI / ML Laboratory Experiments.
- Topic: Python Programming.
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Lab Experiment - 1:

- Q1. Write a Python program to create a list of 5 integers and display the list.

```
list1 = [1, 2, 3, 4, 5]

print(list1)

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

Lab Experiment - 2:

- Q2. Write a Python program to find the length of a list entered by the user.

```
list2 = input("Enter list item: ")
my_list = list2.split()

print(my_list)
print(f"The list length: {len(my_list)}")

Enter list item: Sall Vaibhav Satinder

['Sall', 'Vaibhav', 'Satinder']
The list length: 3
```

Lab Experiment - 3:

- Q3. Write a Python program to access and display the first and last elements of a list.

```
list3 = ["Satinder", "Nick", "Charlie", "Vaibhav"]

print(f"The list first element is: {list3[0:1]}")
print(f"The list last element is: {list3[3:]}")

The list first element is: ['Satinder']
The list last element is: ['Vaibhav']
```

Lab Experiment - 4:

- Q4. Write a Python program to add an element to an existing list using append().

```
list4 = ["Satinder", "Nick", "Charlie", "Vaibhav"]
print(list4)
```

```
list4.append("Swayam")
print(list4)

['Satinder', 'Nick', 'Charlie', 'Vaibhav']
['Satinder', 'Nick', 'Charlie', 'Vaibhav', 'Swayam']
```

Lab Experiment - 5:

- Q5. Write a Python program to remove a given element from a list.

```
list5 = ["Satinder", "Nick", "Charlie", "Vaibhav"]
print(list5)
list5.remove("Nick")
print(list5)

['Satinder', 'Nick', 'Charlie', 'Vaibhav']
['Satinder', 'Charlie', 'Vaibhav']
```

Lab Experiment - 6:

- Q6. Write a Python program to insert an element at a given position in a list.

```
list6 = ["Satinder", "Nick", "Charlie", "Vaibhav"]
print(list6)
list6.insert(2, "Swayam")
print(list6)

['Satinder', 'Nick', 'Charlie', 'Vaibhav']
['Satinder', 'Nick', 'Swayam', 'Charlie', 'Vaibhav']
```

Lab Experiment - 7:

- Q7. Write a Python program to compute the sum of the list elements.

```
list7 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 0]
print(list7)
print(sum(list7))

[1, 2, 3, 4, 5, 6, 7, 8, 9, 0]
45
```

Lab Experiment - 8:

- Q8. Write a Python program to append multiple elements to a list.

```
list8 = ["Satinder", "Nick", "Charlie", "Vaibhav"]
print(list8)
list8[4:6] = ["Swayam", "Santosh"]
print(list8)

['Satinder', 'Nick', 'Charlie', 'Vaibhav']
['Satinder', 'Nick', 'Charlie', 'Vaibhav', 'Swayam', 'Santosh']
```

Lab Experiment - 9:

- Q9. Write a Python program to clear all elements from a list.

```
list9 = ["Satinder", "Nick", "Charlie", "Vaibhav"]
print(list9)
list9.clear()
print(list9)

['Satinder', 'Nick', 'Charlie', 'Vaibhav']
[]
```

Lab Experiment - 10:

- Q10. Write a program to find the maximum and minimum in a list of integers.

```
list10 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 0]
print(list10)
print(f"Max: {max(list10)}")
print(f"Min: {min(list10)}")

[1, 2, 3, 4, 5, 6, 7, 8, 9, 0]
Max: 9
Min: 0
```