Programming Assignment-10

1. Write a Python program to find sum of elements in a list?

Ans.

```python
def sum_of_elements(lst):
    return sum(lst)
```

Example

```python
lst = [1, 2, 3, 4, 5]
print("Sum of elements:", sum_of_elements(lst))
```

2. Write a Python program to multiply all numbers in the list?

Ans.

```python
from functools import reduce

def multiply_elements(lst):
    return reduce(lambda x, y: x * y, lst)
```

Example

```python
lst = [1, 2, 3, 4]
print("Product of elements:", multiply_elements(lst))
```

3. Write a Python program to find the smallest number in a list?

Ans.

```python
def smallest_element(lst):
    return min(lst)
```

lst = [10, 20, 4, 45, 99]

print("Smallest number:", smallest_element(lst))

4. Write a Python program to find the largest number in a list?

Ans.

```python
def largest_element(lst):
    return max(lst)
```

Example

lst = [10, 20, 4, 45, 99]

print("Largest number:", largest_element(lst))

5. Write a Python program to find the second largest number in a list?

Ans.

```python
def second_largest_element(lst):
    lst = list(set(lst))  # Remove duplicates
    lst.sort()
    return lst[-2]
```

Example

lst = [10, 20, 4, 45, 99]

print("Second largest number:", second_largest_element(lst))

6. Write a Python program to find N largest elements from a list?

Ans.

```python
def n_largest_elements(lst, N):
    return sorted(lst, reverse=True)[:N]
```

lst = [10, 20, 4, 45, 99]

N = 3

print(f"{N} largest elements:", n_largest_elements(lst, N))

7. Write a Python program to print even numbers in a list?

Ans.

```python
def even_numbers(lst):
    return [num for num in lst if num % 2 == 0]
```

Example

lst = [10, 21, 4, 45, 66, 93]

print("Even numbers:", even_numbers(lst))

8. Write a Python program to print odd numbers in a list?

Ans.

```python
def odd_numbers(lst):
    return [num for num in lst if num % 2 != 0]
```

Example

lst = [10, 21, 4, 45, 66, 93]

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

9. Write a Python program to remove empty lists from a list?

Ans.

```python
def remove_empty_lists(lst):
    return [item for item in lst if item]
```

lst = [1, 2, [], 3, [], 4, [], 5]

print("List after removing empty lists:", remove_empty_lists(lst))

10. Write a Python program to clone or copy a list?

Ans.

```python
def clone_list(lst):
    return lst[:]
```

Example

lst = [1, 2, 3, 4, 5]

cloned_lst = clone_list(lst)

print("Original list:", lst)

print("Cloned list:", cloned_lst)

11. Write a Python program to count occurrences of an element in a list?

Ans.

```python
def count_occurrences(lst, element):
    return lst.count(element)
```

Example

lst = [1, 2, 3, 2, 2, 4, 5, 2]

element = 2

print(f"Occurrences of {element}:", count_occurrences(lst, element))