```
# 1. Access private variables and methods in a class
class Secret:
    def __init__(self, val):
        self.__variable = val
    def __method(self):
        return f"Private value: {self.__variable}"
    def access_private(self):
        return self.__method()

obj = Secret(100)
print(obj.access_private())
```

```
Private value: 100
```

```
# 2. Print an equilateral triangle pattern using '*'
n = int(input("Enter number of lines: "))
count = n - 1
for i in range(1, n * 2, 2):
    print(" " * count + "*" * i)
    count -= 1
```

```
Enter number of lines: 5
    *
   ***
  *****
 *******
*********
```

```
# 3. Return dictionary with count of each element
def get_counts(lst):
    counts = {}
    for item in lst:
        counts[item] = counts.get(item, 0) + 1
    return counts
print(get_counts(['a', 'b', 'c', 'a', 'e', 'a']))
```

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{'a': 3, 'b': 1, 'c': 1, 'e': 1}
```

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# 4. Calculator using dictionary and lambda functions
calculator = {
    'add': lambda x, y: x + y,
    'subtract': lambda x, y: x - y,
    'multiply': lambda x, y: x * y,
    'divide': lambda x, y: x / y if y != 0 else "Error"}
print(calculator['add'](2, 3))
```

```
5
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# 5. Find character with highest ASCII value
def max_ascii(s):
    return max(s)
```

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print(max_ascii("python"))
```

```
y
```

```
# 6. Write a program to add three 2-D matrices
def add_three_matrices(m1, m2, m3):
    result = [[m1[i][j] + m2[i][j] + m3[i][j] for j in range(len(m1[0]))] for i
    return result

a = [[1, 1], [1, 1]]
b = [[2, 2], [2, 2]]
c = [[3, 3], [3, 3]]
print(add_three_matrices(a, b, c))
```

```
[[6, 6], [6, 6]]
```

```
# 7. Find most frequent element(s) of list
def most_frequent(lst):
    counts = {x: lst.count(x) for x in set(lst)}
    max_val = max(counts.values())
    return [k for k, v in counts.items() if v == max_val]
print(most_frequent([10, 20, 10, 10, 30, 20, 30, 40, 20]))
```

```
[10, 20]
```

```
# 8. Swap list elements using indexes from console
lst = [10, 20, 30, 40, 50]
idx1 = int(input("Index 1: "))
idx2 = int(input("Index 2: "))
lst[idx1], lst[idx2] = lst[idx2], lst[idx1]
print(lst)
```

```
Index 1: 0
Index 2: 1
[20, 10, 30, 40, 50]
```

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# 9. Write a program to add elements of 3-D matrix
matrix_3d = [[[1, 1, 1], [1, 1, 1], [1, 1, 1]]]
total = sum(item for row in matrix_3d for sub_row in row for item in sub_row)
print("Sum:", total)
```

```
Sum: 9
```

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# 10. Write a program to merge two dictionaries
dict1 = {'a': 1, 'b': 2}
dict2 = {'c': 3, 'd': 4}
dict1.update(dict2)
print(dict1)
```

```
{'a': 1, 'b': 2, 'c': 3, 'd': 4}
```