

1.

main.py	Output
<pre>1 a= ["abc", "car", "ada", "racecar", "cool"] 2 result = next((b for b in a if b == b[::-1]), "") 3 print(result)</pre>	<pre>ada === Code Execution Successful ===</pre>

2.

main.py	Output
<pre>1 n1 = [2, 3, 2] 2 n2 = [1, 2] 3 4 set1, set2 = set(n1), set(n2) 5 res1 = sum(x in set2 for x in n1) 6 res2= sum(x in set1 for x in n2) 7 8 print([res1, res2]) 9</pre>	<pre>[2, 1] === Code Execution Successful ===</pre>

3.

main.py	Output
<pre>1 from collections import defaultdict 2 3 nums = [1, 2, 1] 4 n = len(nums) 5 total_sum = 0 6 7 for i in range(n): 8 distinct_count = 0 9 freq = defaultdict(int) 10 for j in range(i, n): 11 freq[nums[j]] += 1 12 if freq[nums[j]] == 1: 13 distinct_count += 1 14 total_sum += distinct_count ** 2 15 16 print(total_sum)</pre>	<pre>15 === Code Execution Successful ===</pre>

4.

```
1 from collections import defaultdict
2 def count_valid_pairs(nums, k):
3     index_map = defaultdict(list)
4     count = 0
5
6     for j, num in enumerate(nums):
7         for i in index_map[num]:
8             if (i * j) % k == 0:
9                 count += 1
10            index_map[num].append(j)
11
12    return count
13 nums1 = [3, 1, 2, 2, 2, 1, 3]
14 k1 = 2
15 print(count_valid_pairs(nums1, k1))
16 nums2 = [1, 2, 3, 4]
17 k2 = 1
18 print(count_valid_pairs(nums2, k2))
19
```

```
4
0
=== Code Execution Successful ===
```

5.

```
1 a = [
2     [1, 2, 3, 4, 5],
3     [7, 7, 7, 7, 7],
4     [-10, 2, 3, -4, 5]
5 ]
6 res = [max(b) for b in a]
7 print(res)
8
9
10
```

```
[5, 7, 5]
=== Code Execution Successful ===
```

6.

```
1 nums1 = []
2 nums2 = [5]
3 nums3 = [3, 3, 3, 3, 3]
4 if not nums1:
5     print("List is empty")
6 else:
7     sorted_nums1 = sorted(nums1)
8     print(sorted_nums1[-1])
9 if not nums2:
10    print("List is empty")
11 else:
12    sorted_nums2 = sorted(nums2)
13    print(sorted_nums2[-1])
14 if not nums3:
15    print("List is empty")
16 else:
17    sorted_nums3 = sorted(nums3)
18    print(sorted_nums3[-1])
19
```

```
List is empty
5
3
=== Code Execution Successful ===
```

7.

```
1 a= [3, 7, 3, 5, 2, 5, 9, 2]
2 b = list(set(a))
3 print(b)
4
5
6
7
```

```
[2, 3, 5, 7, 9]
```

```
=== Code Execution Successful ===
```