

## DAY-1

1.

The screenshot shows the Programiz Online Python Compiler interface. The browser address bar displays `programiz.com/python-programming/online-compiler/`. The header includes the Programiz logo, a banner for "Premium Coding Courses by Programiz", and a "Programiz PRO" button. The main editor area is titled "main.py" and contains the following Python code:

```
1 n=["abc","car","ada","racecar","cool"]
2 p=[]
3 for i in range(0,len(n)):
4     c=n[i][::-1]
5     if c==n[i]:
6         p.append(n[i])
7 print(p[0])
8
```

The "Run" button is highlighted. The "Output" panel on the right shows the result of the execution:

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

The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying the date and time as 08:50 on 07-10-2024.

2.

The screenshot shows the Programiz Online Python Compiler interface. The browser address bar displays `programiz.com/python-programming/online-compiler/`. The header includes the Programiz logo, a banner for "Premium Coding Courses by Programiz", and a "Programiz PRO" button. The main editor area is titled "main.py" and contains the following Python code:

```
1 nums1 = [1,2,2]
2 nums2 = [1,2,4]
3 answer1 = 0
4 answer2 = 0
5 for i in range(len(nums1)):
6     if nums1[i] in nums2:
7         answer1 += 1
8 for j in range(len(nums2)):
9     if nums2[j] in nums1:
10        answer2 += 1
11 result = [answer1, answer2]
12 print(result)
13
```

The "Run" button is highlighted. The "Output" panel on the right shows the result of the execution:

```
[3, 2]
=== Code Execution Successful ===
```

The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying the date and time as 09:12 on 07-10-2024.

3.

The screenshot shows the Programiz Online Python Compiler interface. The code in `main.py` is as follows:

```
1 nums = [1, 2, 1]
2 n = len(nums)
3 total_sum = 0
4 for i in range(n):
5     distinct_elements = set()
6     for j in range(i, n):
7         distinct_elements.add(nums[j])
8         total_sum += len(distinct_elements) ** 2
9 print(total_sum)
10
```

The output on the right is:

```
15
=== Code Execution Successful ===
```

The browser's taskbar at the bottom shows the date as 07-10-2024 and the time as 09:16.

4.

The screenshot shows the Programiz Online Python Compiler interface. The code in `main.py` is as follows:

```
1 nums = [1, 2, 1, 2, 1]
2 k = 2
3 n = len(nums)
4 count = 0
5 for i in range(n):
6     for j in range(i + 1, n):
7         if nums[i] == nums[j] and (i * j) % k == 0:
8             count += 1
9 print(count)
10
```

The output on the right is:

```
3
=== Code Execution Successful ===
```

The browser's taskbar at the bottom shows the date as 07-10-2024 and the time as 09:21.

5.

The screenshot shows the Programiz Online Python Compiler interface. The browser address bar displays `programiz.com/python-programming/online-compiler/`. The page header includes the Programiz logo, a banner for "Premium Coding Courses by Programiz", and a "Programiz PRO" button. The main editor area is titled "main.py" and contains the following Python code:

```
1 - def find_maximum(numbers):
2     return max(numbers)
3 print(find_maximum([1, 2, 3, 4, 5]))
4 print(find_maximum([7, 7, 7, 7, 7]))
5 print(find_maximum([-10, 2, 3, -4, 5]))
6
```

The "Run" button is highlighted. The "Output" panel on the right shows the results of the code execution:

```
5
7
5
=== Code Execution Successful ===
```

The bottom of the screen shows a Windows taskbar with the date and time set to 09:25 on 07-10-2024.

6.

The screenshot shows the Programiz Online Python Compiler interface. The browser address bar displays `programiz.com/python-programming/online-compiler/`. The page header includes the Programiz logo, a banner for "Premium Coding Courses by Programiz", and a "Programiz PRO" button. The main editor area is titled "main.py" and contains the following Python code:

```
1 - def process_numbers(numbers):
2     sorted_numbers = sorted(numbers)
3     max_element = max(sorted_numbers)
4     return sorted_numbers, max_element
5 numbers = [3, 1, 4, 1, 5, 9, 2, 6]
6 sorted_list, maximum = process_numbers(numbers)
7 print("Sorted List:", sorted_list)
8 print("Maximum Element:", maximum)
9
```

The "Run" button is highlighted. The "Output" panel on the right shows the results of the code execution:

```
Sorted List: [1, 1, 2, 3, 4, 5, 6, 9]
Maximum Element: 9
=== Code Execution Successful ===
```

The bottom of the screen shows a Windows taskbar with the date and time set to 09:29 on 07-10-2024.

7.

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Programiz Python Online Compiler

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main.py

```
1- def unique_elements(input_list):
2-     unique_list = []
3-     for element in input_list:
4-         if element not in unique_list:
5-             unique_list.append(element)
6-     return unique_list
7- numbers = [1, 2, 2, 3, 4, 4, 5]
8- print(unique_elements(numbers))
9
```

Output

```
[1, 2, 3, 4, 5]
=== Code Execution Successful ===
```

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09:34 07-10-2024

8.

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Programiz Python Online Compiler

Premium Coding Courses by Programiz

Programiz PRO

main.py

```
1- def bubble_sort(arr):
2-     n = len(arr)
3-     for i in range(n):
4-         for j in range(0, n-i-1):
5-             if arr[j] > arr[j+1]:
6-                 arr[j], arr[j+1] = arr[j+1], arr[j]
7-     return arr
8- array = [64, 34, 25, 12, 22, 11, 90]
9- sorted_array = bubble_sort(array)
10- print("Sorted array:", sorted_array)
11
```

Output

```
Sorted array: [11, 12, 22, 25, 34, 64, 90]
=== Code Execution Successful ===
```

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9.

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main.py

```
1 def binary_search(arr, x):
2     left, right = 0, len(arr) - 1
3     while left <= right:
4         mid = left + (right - left) // 2
5         if arr[mid] == x:
6             return True
7         elif arr[mid] < x:
8             left = mid + 1
9         else:
10            right = mid - 1
11    return False
12 sorted_array = [1, 2, 3, 4, 5, 6, 7, 8, 9]
13 number_to_find = 5
14 result = binary_search(sorted_array, number_to_find)
15 print(f"Number {number_to_find} found: {result}")
16
```

Output

Number 5 found: True

=== Code Execution Successful ===

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10.

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Python Online Compiler

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Programiz PRO

main.py

```
1 def quick_sort(nums):
2     if len(nums) <= 1:
3         return nums
4     pivot = nums[len(nums) // 2]
5     left = [x for x in nums if x < pivot]
6     middle = [x for x in nums if x == pivot]
7     right = [x for x in nums if x > pivot]
8     return quick_sort(left) + middle + quick_sort(right)
9 nums = [38, 27, 43, 3, 9, 82, 10]
10 sorted_nums = quick_sort(nums)
11 print(sorted_nums)
```

Output

[3, 9, 10, 27, 38, 43, 82]

=== Code Execution Successful ===

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09:40

07-10-2024