

## Day -1 :

1

```
Day-1 > exp-1.py > palindrome
1
2 def palindrome(word):
3     for i in word:
4         if i==i[::-1]:
5             return i
6 word=["abc","car","ada","racecar","cool"]
7 print(palindrome(word))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + -

```
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-1.py"
ada
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-1.py"
ada
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-1.py"
ada
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-1.py"
```

2

```
Day-1 > exp-2.py > ...
1 nums1 = [4,3,2,3,1]
2 nums2 = [2,2,5,2,3,6]
3 output=[]
4 nums1_count=nums2_count=0
5 for i in nums1:
6     if i in nums2:
7         nums1_count+=1
8 output.append(nums1_count)
9 for i in nums2:
10     if i in nums1:
11         nums2_count+=1
12 output.append(nums2_count)
13 print(output)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-2.py"
[3, 4]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-2.py"
[3, 4]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-2.py"
[3, 4]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/DAA programs/Day-1/exp-2.py"
[3, 4]
PS C:\Users\shiva\Desktop\DAA programs>
```

Ln 1, Col 20 Spaces: 4 UTF-8 CF

3

```
Day-1 > exp-3.py > ...
1  nums = [1,2,1]
2  sum=0
3  for i in range(len(nums)+1):
4      for j in range(i+1,len(nums)+1):
5          a=(len(set(nums[i:j])))
6          sum+=a**2
7  print(sum)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe
AA programs/Day-1/exp-3.py"
15
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe
AA programs/Day-1/exp-3.py"
15
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe
AA programs/Day-1/exp-3.py"
15
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe
AA programs/Day-1/exp-3.py"
15
PS C:\Users\shiva\Desktop\DAA programs>
```

4

```
Day-1 > exp-5.py > ...
1  def maxnum(a):
2      a.sort()
3      print(a[-1])
4  a1=[1, 2, 3, 4, 5]
5  a2=[7, 7, 7, 7, 7]
6  a3=[-10, 2, 3, -4, 5]
7  maxnum(a1)
8  maxnum(a2)
9  maxnum(a3)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [ ] ... ^ X

```
7
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/D
AA programs/Day-1/exp-5.py"
5
7
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/D
AA programs/Day-1/exp-5.py"
5
7
5
PS C:\Users\shiva\Desktop\DAA programs>
```

Ln 9, Col 11 Spaces: 4 UTF-8 CRLF {} Python 3.12.1 64-bit Go Live

5

```
Day-1 > exp-5.py > ...
1 def maxnum(a):
2     a.sort()
3     print(a[-1])
4 a1=[1, 2, 3, 4, 5]
5 a2=[7, 7, 7, 7, 7]
6 a3=[-10, 2, 3, -4, 5]
7 maxnum(a1)
8 maxnum(a2)
9 maxnum(a3)
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS Python + - [ ] [ ] ... ^ x

```
7
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/D
AA programs/Day-1/exp-5.py"
5
7
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/shiva/Desktop/D
AA programs/Day-1/exp-5.py"
5
7
5
PS C:\Users\shiva\Desktop\DAA programs>
```

Ln 9, Col 11 Spaces: 4 UTF-8 CRLF {} Python 3.12.1 64-bit Go Live

6

```
Day-1 > exp-6.py > ...
1 numbers = [5]
2 if len(numbers)==0:
3     print("None or an appropriate message indicating that the list is empty")
4 elif len(set(numbers))==1:
5     if len(numbers)>1:
6         print("All are same")
7     else:
8         max_num = numbers[0]
9         for num in numbers[1:]:
10             if num > max_num:
11                 max_num = num
12         print(max_num)
13
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS

```
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "
AA programs/Day-1/exp-6.py"
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "
AA programs/Day-1/exp-6.py"
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "
AA programs/Day-1/exp-6.py"
5
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "
AA programs/Day-1/exp-6.py"
5
```

7

```
Day-1 > exp-7.py > ...
1 def duplicate_element(arr):
2     unique=[]
3     for i in arr:
4         if i not in unique:
5             unique.append(i)
6     return unique
7 Input=[3, 7, 3, 5, 2, 5, 9, 2]
8 print(duplicate_element(Input))
9 Input=[-1, 2, -1, 3, 2, -2]
10 print(duplicate_element(Input))
11 Input=[1000000, 999999, 1000000]
12 print(duplicate_element(Input))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[-1, 2, 3, -2]
[1000000, 999999]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "
/Desktop/DAA programs/Day-1/exp-7.py"
[3, 7, 5, 2, 9]
[-1, 2, 3, -2]
[1000000, 999999]
PS C:\Users\shiva\Desktop\DAA programs>
```

8

```
Day-1 > xep-8.py > ...
1 nums = [64, 34, 25, 12, 22, 11, 90]
2 n = len(nums)
3 for i in range(n):
4     for j in range(0, n - i - 1):
5         if nums[j] > nums[j + 1]:
6             nums[j], nums[j + 1] = nums[j + 1], nums[j]
7 print(nums)
8
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[11, 12, 22, 25, 34, 64, 90]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Us
/Desktop/DAA programs/Day-1/xep-8.py"
[11, 12, 22, 25, 34, 64, 90]
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "c:/Us
/Desktop/DAA programs/Day-1/xep-8.py"
[11, 12, 22, 25, 34, 64, 90]
PS C:\Users\shiva\Desktop\DAA programs>
```

9

```
Day-1 > exp-9.py > binary_search
1  def binary_search(arr, target):
2      low = 0
3      high = len(arr) - 1
4      while low <= high:
5          mid = (low + high) // 2
6          if arr[mid] == target:
7              return mid
8          elif arr[mid] < target:
9              low = mid + 1
10         else:
11             high = mid - 1
12     return -1
13 arr=[3,4,6,-9,10,8,9,30]
14 arr.sort()
15 target=10
16 if binary_search(arr, target)!=-1:
17     print(f"Element {target} is found at position",binary_search(arr, target))
18 else:
19     print("Element is not found in an array")
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Element 10 is found at position 6  
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "rams/Day-1/exp-9.py"  
Element 10 is found at position 6  
PS C:\Users\shiva\Desktop\DAA programs> & C:/Users/shiva/AppData/Local/Programs/Python/Python312/python.exe "rams/Day-1/exp-9.py"  
Element 10 is found at position 6  
PS C:\Users\shiva\Desktop\DAA programs>

10

```
Day-1 > exp-10.py > merge
1  def merge_sort(arr):
2      if len(arr) <= 1:
3          return arr
4      mid = len(arr) // 2
5      left_half = arr[:mid]
6      right_half = arr[mid:]
7      left_sorted = merge_sort(left_half)
8      right_sorted = merge_sort(right_half)
9      return merge(left_sorted, right_sorted)
10 def merge(left, right):
11     sorted_array = []
12     i = j = 0
13     while i < len(left) and j < len(right):
14         if left[i] < right[j]:
15             sorted_array.append(left[i])
16             i += 1
17         else:
18             sorted_array.append(right[j])
19             j += 1
20     sorted_array.extend(left[i:])
21     sorted_array.extend(right[j:])
22     return sorted_array
23 arr = [38, 27, 43, 3, 9, 82, 10]
24 sorted_arr = merge_sort(arr)
25 print("Sorted array:", sorted_arr)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Sorted array: [3, 9, 10, 27, 38, 43, 82]  
PS C:\Users\shiva\Desktop\DAA programs>