

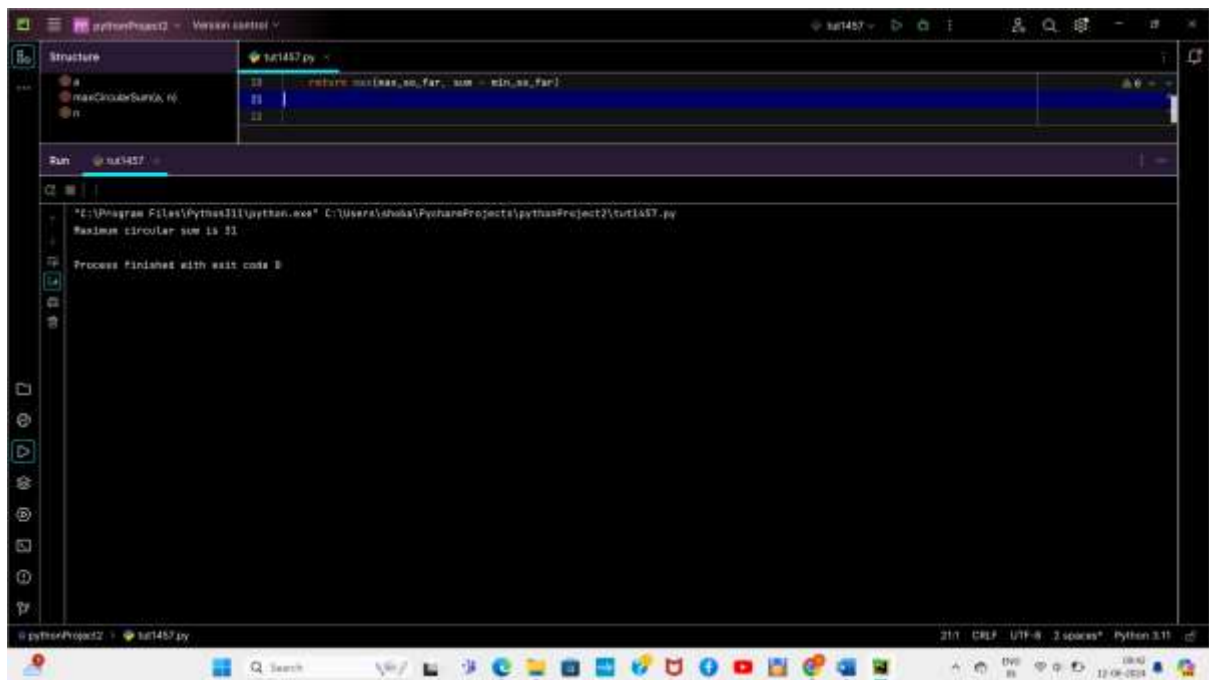
27. Given a circular integer array `nums` of length `n`, return the maximum possible sum of a non-empty subarray of `nums`. A circular array means the end of the array connects to the beginning of the array. Formally, the next element of `nums[i]` is `nums[(i + 1) % n]` and the previous element of `nums[i]` is `nums[(i - 1 + n) % n]`. A subarray may only include each element of the fixed buffer `nums` at most once. Formally, for a subarray `nums[i]`, `nums[i + 1]`, ..., `nums[j]`, there does not exist $i \leq k_1$, $k_2 \leq j$ with $k_1 \% n == k_2 \% n$.

Program:

```
def maxCircularSum(a, n):  
    if (n == 1):  
        return a[0]  
    sum = 0  
    for i in range(n):  
        sum += a[i]  
    curr_max = a[0]  
    max_so_far = a[0]  
    curr_min = a[0]  
    min_so_far = a[0]  
  
    for i in range(1, n):  
  
        curr_max = max(curr_max + a[i], a[i])  
        max_so_far = max(max_so_far, curr_max)  
  
        curr_min = min(curr_min + a[i], a[i])  
        min_so_far = min(min_so_far, curr_min)  
    if (min_so_far == sum):  
        return max_so_far  
    return max(max_so_far, sum - min_so_far)  
a = [11, 10, -20, 5, -3, -5, 8, -13, 10]  
n = len(a)
```

```
print("Maximum circular sum is", maxCircularSum(a, n))
```

Output:



The screenshot shows a Python IDE with a dark theme. The top panel displays the file structure with a project named 'pythonProject2' containing files 'a', 'maxCircularSum(a, n)', and 'n'. The main editor shows a Python script with the following code:

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```

The bottom panel shows the output of the program:

```
"C:\Program Files\Python311\python.exe" C:\Users\shubha\PycharmProjects\pythonProject2\tut1457.py  
Maximum circular sum is 31  
Process finished with exit code 0
```

The status bar at the bottom indicates the file is 'pythonProject2 \ tut1457.py', the editor is at line 211, column 17, and the Python version is 3.11.