10. Sort the array so that whenever nums[i] is odd, i is odd, and whenever nums[i] is even, i is even. Return any answer array that satisfies this condition.

Code:

```
def sort_array_by_parity(nums):
    n=len(nums)
    even_index,odd_index=0, 1
    while even_index<n and odd_index<n:
        while even_index<n and nums[even_index]%2==0:
            even_index+=2
        while odd_index < n and nums[odd_index]%2!=0:
            odd_index +=2
        if even_index<n and odd_index<n:
            nums[even_index],nums[odd_index]=nums[odd_index],nums[even_index]
    return nums
nums=[4,2,5,7]
sorted_nums=sort_array_by_parity(nums)
print(sorted_nums)
```

output:

```
PS C:\Users\karth> & C:/Users/karth/AppData/Local/Programs/Python/Python312/python.exe c:/Users/karth/OneDrive/Desktop/daa.py
[8, 2, 6, 4, 1, 9, 3, 5]
PS C:\Users\karth>
```

Time complexity:

F(n)=o(n)