1.finding the maximum and minimum elements using divide and conquer method.

Code:

```
def find_min_max(arr, low, high):
    if low==high:
        return arr[low],arr[low]
    if high==low + 1:
        if arr[low]<arr[high]:
            return arr[low],arr[high]
        else:
            return arr[high],arr[low]
    mid = (low + high) // 2
    min1,max1=find_min_max(arr,low,mid)
    min2,max2=find_min_max(arr,mid+1,high)
    return min(min1,min2),max(max1,max2)
arr = [3,5,1,2,4,8,7]
min_element, max_element = find_min_max(arr,0,len(arr)-1)
print(f"Minimum element is {min_element}")
print(f"Maximum element is {max_element}")
```

output:

```
PS C:\Users\karth>
PS C:\Users\karth> & C:/Users/karth/AppData/Local/Programs/Python/Python312/python.exe c:/Users/karth/OneDrive/Desktop/daa.py
Minimum element is 1
Maximum element is 8
PS C:\Users\karth>
```

Time complexity:

F(n)=o(n)