156) Write a Program to find both the maximum and minimum values in the array. Implement using any programming language of your choice. Execute your code and provide the maximum and minimum values found.

Input : N= 8, a[] = {5,7,3,4,9,12,6,2}
Output : Min = 2, Max = 12
Test Cases :
Input : N= 9, a[] = {1,3,5,7,9,11,13,15,17}
Output : Min = 1, Max = 17
Test Cases :
Input : N= 10, a[] = {22,34,35,36,43,67, 12,13,15,17}
Output : Min 12, Max 67

AIM: Write a Program to find both the maximum and minimum values in the array in python.

Program :

```
def find_min_max(arr):
    if not arr:
        return None, None

    min_val = arr[0]
    max_val = arr[0]

    for num in arr:
        if num < min_val:
            min_val = num
        if num > max_val:
            max_val = num

    return min_val, max_val

test_cases = [
    (8, [5, 7, 3, 4, 9, 12, 6, 2]),
    (9, [1, 3, 5, 7, 9, 11, 13, 15, 17]),
```

```
    (10, [22, 34, 35, 36, 43, 67, 12, 13, 15, 17])
]

for N, a in test_cases:
    min_val, max_val = find_min_max(a)
    print(f"Input: N={N}, a={a}")
    print(f"Output: Min = {min_val}, Max = {max_val}")
    print()
```

input:

```
Input: N=8, a=[5, 7, 3, 4, 9, 12, 6, 2]
```

output:

```
Output: Min = 2, Max = 12
```

TIME COMPLEXITY : O(n)