

We will iterate through the loop, and save the lowest value and highest value, then we will loop through again, if it's the lowest value, if $i+1$ or $i-1$ = the highest value were done, else we keep looping, if we reach the end of the list, it isn't.

```
for i in Range(n)
    if h < arr[i]
        h = arr[i]
    if l > arr[i]
        l = arr[i]
```

```
for i in Range(n)
    if arr[i] == l
        if arr[i-1] == h or arr[i+1] == h
            return true
```

```
return false
```

This algorithm is $\Theta(n)$

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