

Mermaid code for binary search and bubble sort

Binary search

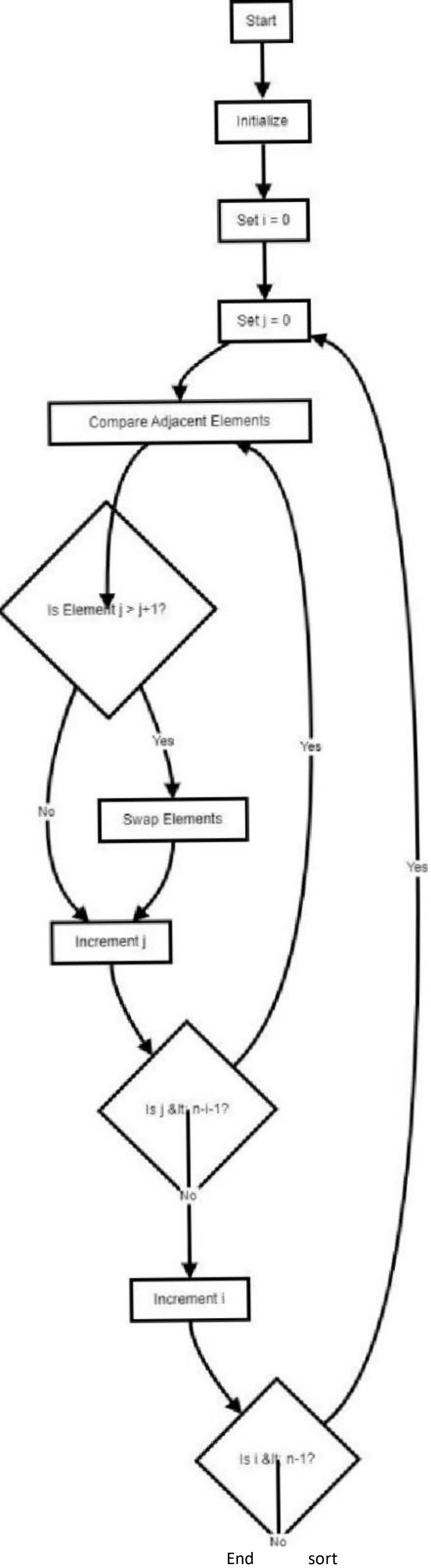
graph TD

```
A[Start] --> B[Initialize low, high]
B --> C{low < high}
C -->|Yes| D[Calculate mid]
D --> E[Check if target arr[mid]]
E -->|Yes| F[Return mid (found)]
E -->|No| G{target < arr[mid]}
G -->|Yes| H[Update high = mid - 1]
G -->|No| I[Update low = mid + 1]
H --> C
I --> C
C -->|No| J[Return -1 (not found)]
J --> K[End]
```

Bubble sort

graph TD

```
A[Start] --> B[Initialize n to length of array]
B --> C[Repeat n-1 times]
C --> D[Initialize swapped to false]
D --> E[For i from 0 to n-1]
E --> F{arr[i] > arr[i+1]}
F -->|Yes| G[Swap arr[i] and arr[i+1]]
G --> H[Set swapped to true]
F -->|No| I[Check next pair]
H --> I
I --> D
E -->|No| J{swapped is false}
J -->|Yes| K[Break]
J -->|No| L[Reduce n by 1]
L --> C
K --> M[End]
```



End

sort

Start

Initialize

Set IOW : 0, high

=

IS low high?

End Binary

