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 --> E
    E -->|No| J{swapped is false}
    J -->|Yes| K[Break]
    J -->|No| L[Reduce n by 1]
    L --> D
    K --> M[End]