Project 10 Name: Algorithm Visualization
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Function Points for Array Visualization Mode (UI) and Rectangle Switching (Array Sorting):

1. Internal Logical Files (ILF):

- **Definition:** User-identifiable group of related data maintained within the application. In this case, it's the internal data structures representing the array being sorted and visualized.
- **Example:** The array to be sorted, represented as a data structure in memory (e.g., an array of numbers or objects), which is continuously updated as sorting progresses.
- **Reasoning:** This file is maintained and manipulated by the system during sorting and visualization.
- **Count:** 1
- **Complexity: Average**
- **Weighting Factor (Average):** 10

2. External Interface Files (EIF):

- **Definition:** User-identifiable group of related data referenced by the application but maintained by another application.
- **Example:** Not applicable in this case as the component doesn't reference any external files.
- **Count:** 0
- **Weighting Factor:** 0

3. External Inputs (EI):

- **Definition:** Unique elementary processes that capture data from outside the system's boundary and provide it to the application.
- **Specific Inputs for Your Tasks:**
    1. **User Input for Array Initialization** – Users provide input arrays through the UI, either by manually entering values or uploading them.
    2. **User Input for Sorting Algorithm Selection** – Users choose which sorting algorithm to visualize (e.g., QuickSort, MergeSort).

3. **User Interaction for Triggering Sort** – Users initiate the sorting process through the UI (e.g., clicking a "Sort" button).
- **Count:** 3
- **Complexity: Average**
- **Weighting Factor (Average):** 4

4. External Outputs (EO):

- **Definition:** Unique elementary processes that send data from inside the application boundary to external entities.
- **Specific Outputs for Your Tasks:**
    1. **Visual Array Representation** – The array is displayed graphically as a series of rectangles, with their heights corresponding to the values in the array.
    2. **Visualization of Sorting Steps** – The switching of rectangles (or swapping of array elements) is shown visually during sorting. This involves animations of rectangles moving to reflect changes in array order.
- **Count:** 2
- **Complexity: Average**
- **Weighting Factor (Average):** 5

5. External Inquiries (EQ):

- **Definition:** Unique elementary processes that retrieve data from the system without modifying it.
- **Count:** 0 (No external inquiries in your component)
- **Weighting Factor:** 0

Total Function Points: **32**