Patrick Star DSA Program

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<<Patrick Star DSA Program>>
===== Main Menu =====
Choose:
1. Data Structures
2. Algorithms
Enter Choice:
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If the user chooses 1:

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<<Patrick Star DSA Program>>
===== Data Structures =====
Choose:
1. Array
2. Queue
3. Stack
4. Linked List
5. Binary Tree
6. Graph Theory
Enter Choice:
```

If the user chooses 2:

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<<Patrick Star DSA Program>>
===== Algorithms =====
Choose:
1. Searching Algorithms
2. Sorting Algorithms
3. Graph Algorithms
Enter Choice:
```

(Under Data Structures)

If user chooses '**Array'**:

- Create array
- Show original
- Show shorted
- Search element
- Go back

If user chooses '**Queue'**:

- Create queue
- Check if full
- Check if empty
- Enqueue/insert
- Dequeue/remove
- Get front/first element
- Get rear/last element
- Go back

If user chooses '**Stack**':

- Push
- Pop
- Peek
- Check if empty
- Display
- Go back

If user chooses '**Linked List**':

- Append node
- Delete node

- Delete node at a given position
- Display
- Go back

If user chooses '**Binary Tree**':

- Display tree
- In order traversal
- Pre order traversal
- Post order traversal
- Go back

If user chooses '**Graph Theory**':

- Create graph
- Show adjacency list
- Show adjacency matrix
- Go back

(Under Algorithms)

Note: show time of execution in this part

If user chooses '**Searching Algorithms**':

- Create a sequence
- Compare Searching Algorithms:
    - Use Linear Search
    - Use Jump Search
    - Use Binary Search
    - Use Interpolation Search
- Go back

If user chooses '**Sorting Algorithms**':

- Create sequence
- Compare sorting algorithms:
    - Selection Sort
    - Bubble Sort
    - Insertion Sort
    - Merge Sort
- Go back

If user chooses '**Graph Algorithms**':

- Create graph
- Compare graph traversal algorithms:
    - Depth-first search (DFS)
    - Breadth-first search (BFS)
- Go back