Linked list data structure

Student manual

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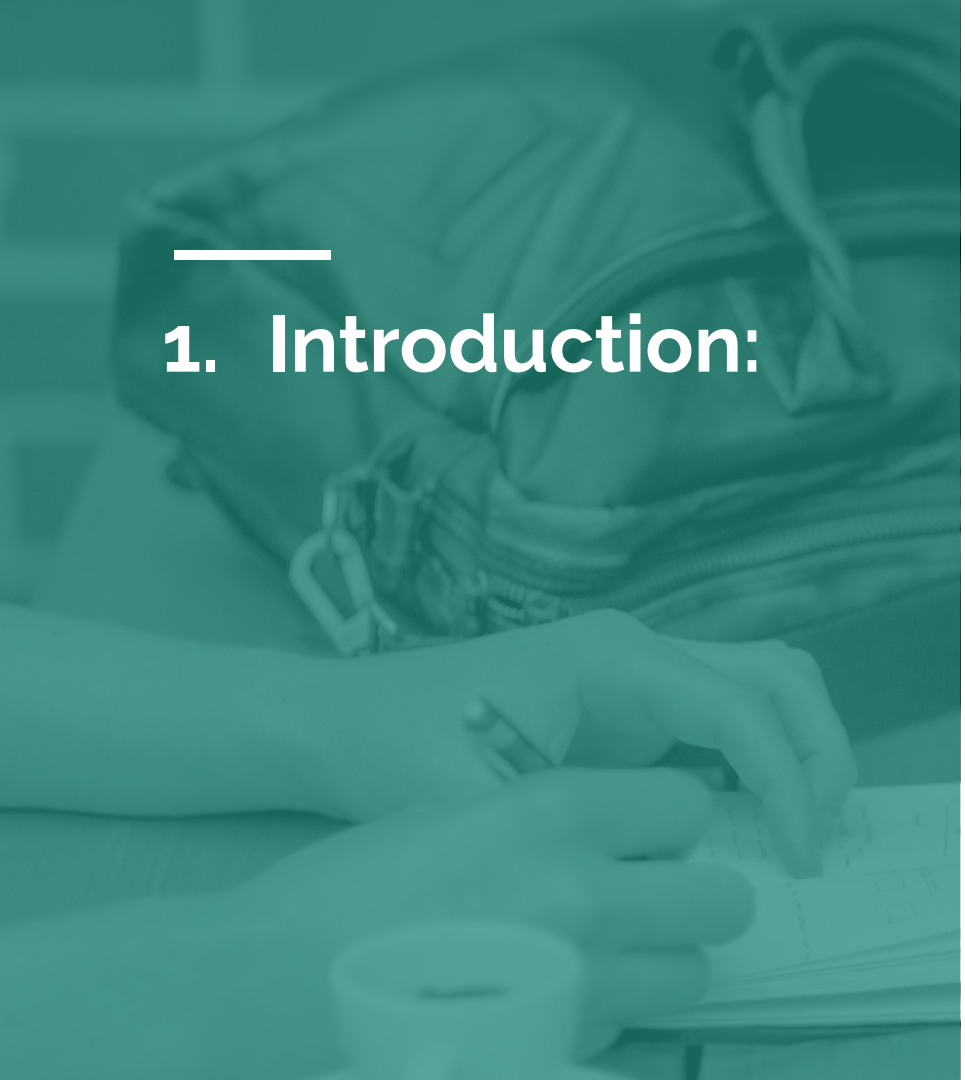
1. Introduction:



1. Introduction:

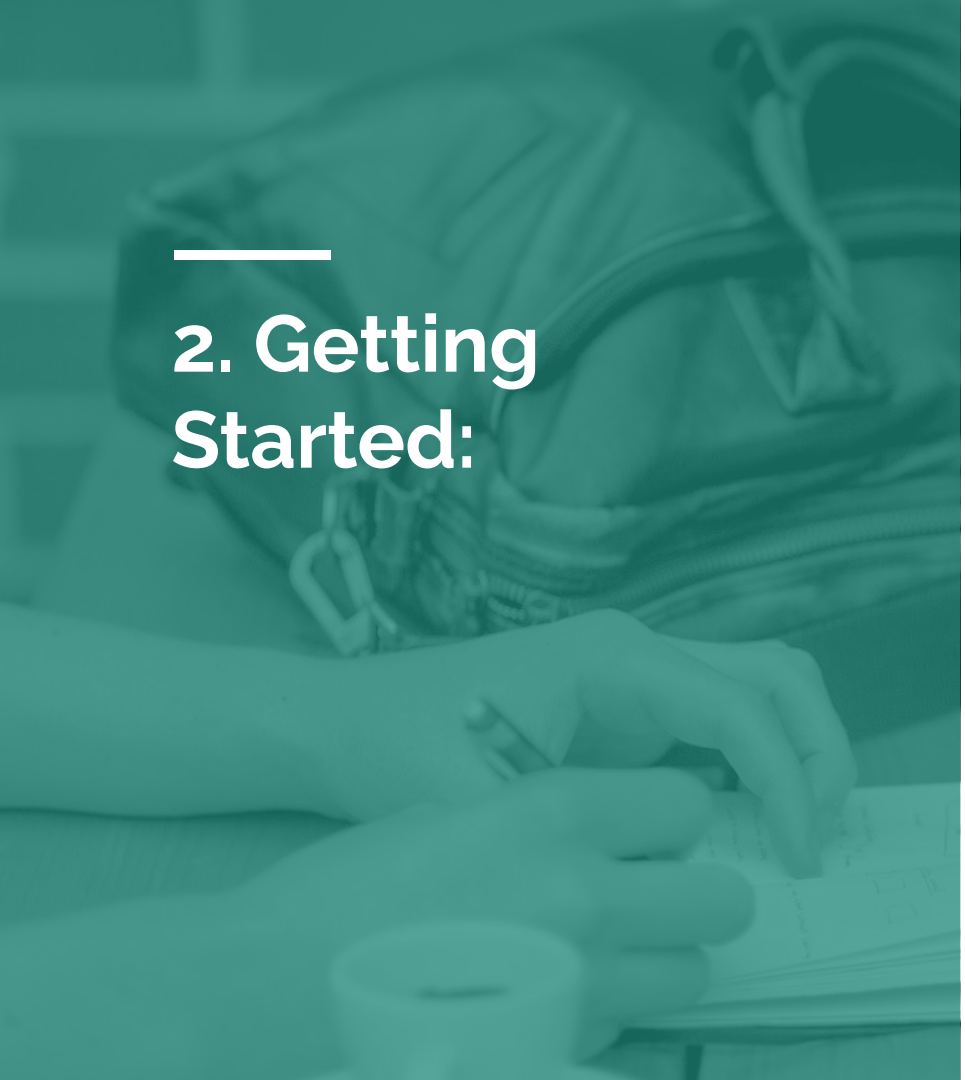
a. Overview:

Welcome to the Linked List Practice Problems platform! This user manual is designed to guide students through the process of constructing a Linked List, performing basic operations, understanding how the operations work, and utilizing the feedback mechanism.

b. Audience:

This manual is intended for students using the Linked List Practice Problems platform.This manual is intended for students using the Linked List Practice Problems platform.

2. Getting Started:



2. Getting Started:

a. System Access:

To get started, open the system provided by the system administrator in your phone or laptop.

b. Dashboard Overview:

Once opened, you will be directed to the dashboard. Here, you can access two features, since you are a student click on students.

3. Construction of a Linked List

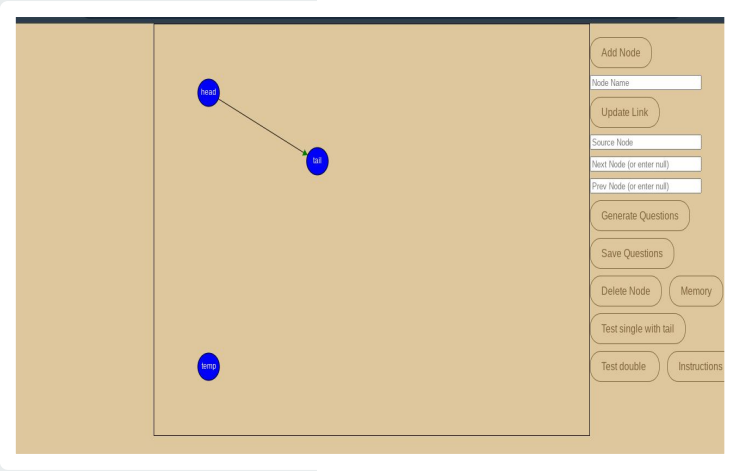
a. The node graph

Here you can practice:

-Singly Linked Lists

-Singly Linked Lists with a tail pointer

-Doubly Linked Lists



The canvas visually represents the Linked List nodes and their connections. Buttons on the right side of the canvas facilitate node and graph operations.

Buttons and their functions:

- Add Node:
  - Adds a new node to the canvas.
  - Enter a unique name for the node in the input field.
- Update Link:
  - Updates the pointers (Next and Prev) between nodes.
  - Enter the source node and the nodes to be linked in the input fields otherwise enter null.
- Generate questions:
  - Initiates the generation of Linked List practice problems for students.

Buttons and their functions:

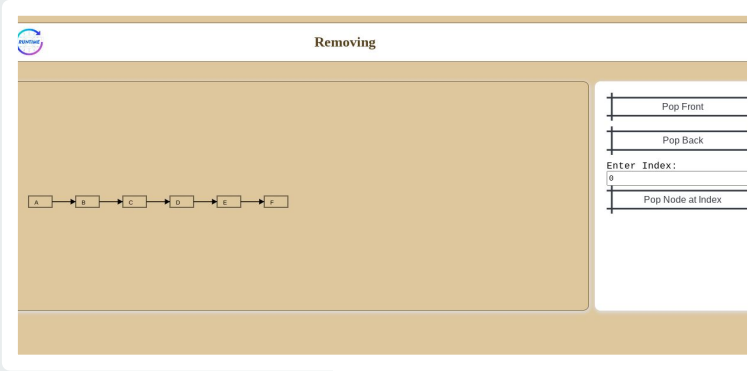
- Save questions:
  - Saves the generated questions, making them available for future use.
- Delete Node:
  - Removes or deletes nodes from the canvas.
  - Drag the node to the button for deletion.
- Memory:
  - Displays nodes lost as memory loss on the canvas.

Buttons and their functions:

- Test single with Tail:
  - Tests the Single Linked List with a tail against generated tests.
- Test Double:
  - Tests the Double Linked List against generated tests.
- Instructions:
  - Displays a detailed set of instructions on how to use each feature on the Node Graph.

b. Linked List Visuals

See Linked Lists in action.



The canvas showcases the Linked List nodes and their connections. Buttons on the right side enable various operations, and a side panel offers insights into the code and explanations associated with specific operations.

Canvas controls and operations:

- Pop Front:
  - Removes the first node from the Linked List.
  - Displays associated code and explanations in the side panel.
- Pop Back:
  - Removes the last node from the Linked List.
  - Displays associated code and explanations in the side panel.
- Pop at Index:
  - Removes the node at specified index from the Linked List.
  - Displays associated code and explanations in the side panel.

Side Panel:

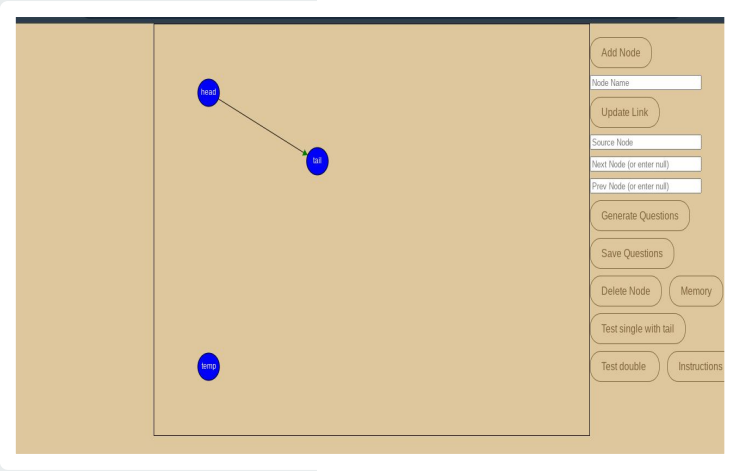
- Displays the C++ code associated with the selected operation.
- Code snippets are highlighted for better readability.
- Provides detailed explanations for each line of the displayed code.
- Enhances user understanding of the Linked List operations.
- The arrow icon indicates the current state of the side panel.

NOTE: The push visuals do exactly the same but using the push operations.

4. Feedback Mechanism:

4. Feedback mechanism

Here you can practice different problem using different quizzes and get instant feedback.



The canvas visually represents the Linked List nodes and their connections. Buttons on the right side of the canvas facilitate node and graph operations.

a. Take a quiz:

-Choose the Linked List problem set you want to solve, selecting any quiz from the available quizzes section.
-Enter your solutions and submit.

b. Accessing Feedback:

-Visit the feedback section at the bottom of your available quizzes.

5. Conclusion:

5. Conclusion:

Congratulations! You've successfully learned how to construct a Linked List, perform basic operations and utilize the feedback mechanism. For further assistance, refer to specific sections in this manual.