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# System Architecture and Design

This document outlines the design diagrams created for the AIA Web App.

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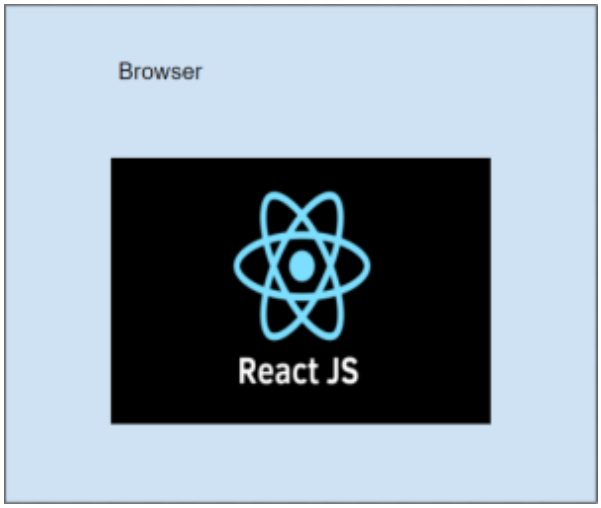
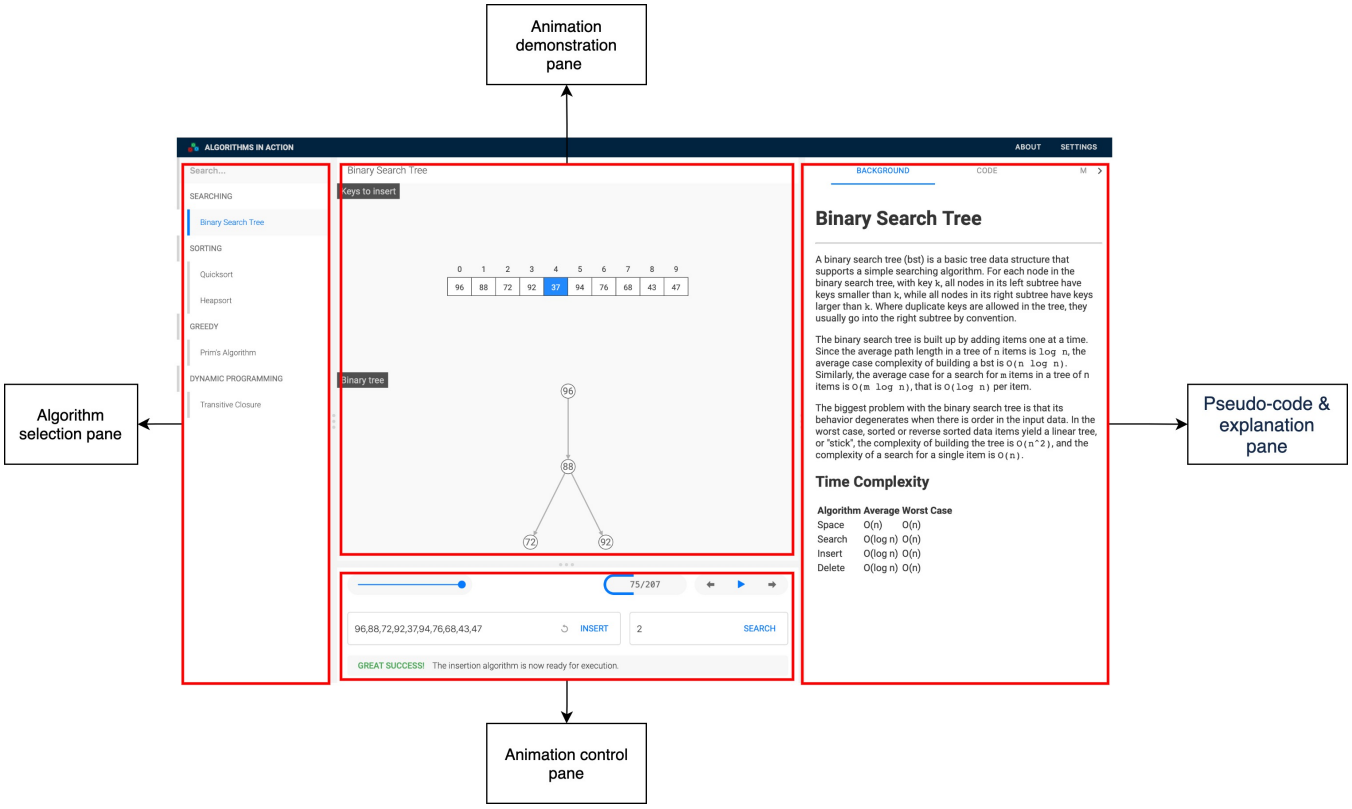
As the AIA web app was previously developed from scratch and the current project focuses on improvisation of the app, we have not created any additional design diagrams such as ER diagram, Sequence diagram, Class diagram etc. Therefore, the teams have focused on providing a high level understanding of the general architecture of the app through the three diagrams above.

# High Level Architecture

The application is formed solely by React.js. The application is loaded in the browser and no server or databases are used. This allows for easy maintenance, lower cost, and portability, as well as a quicker rendering for the user.

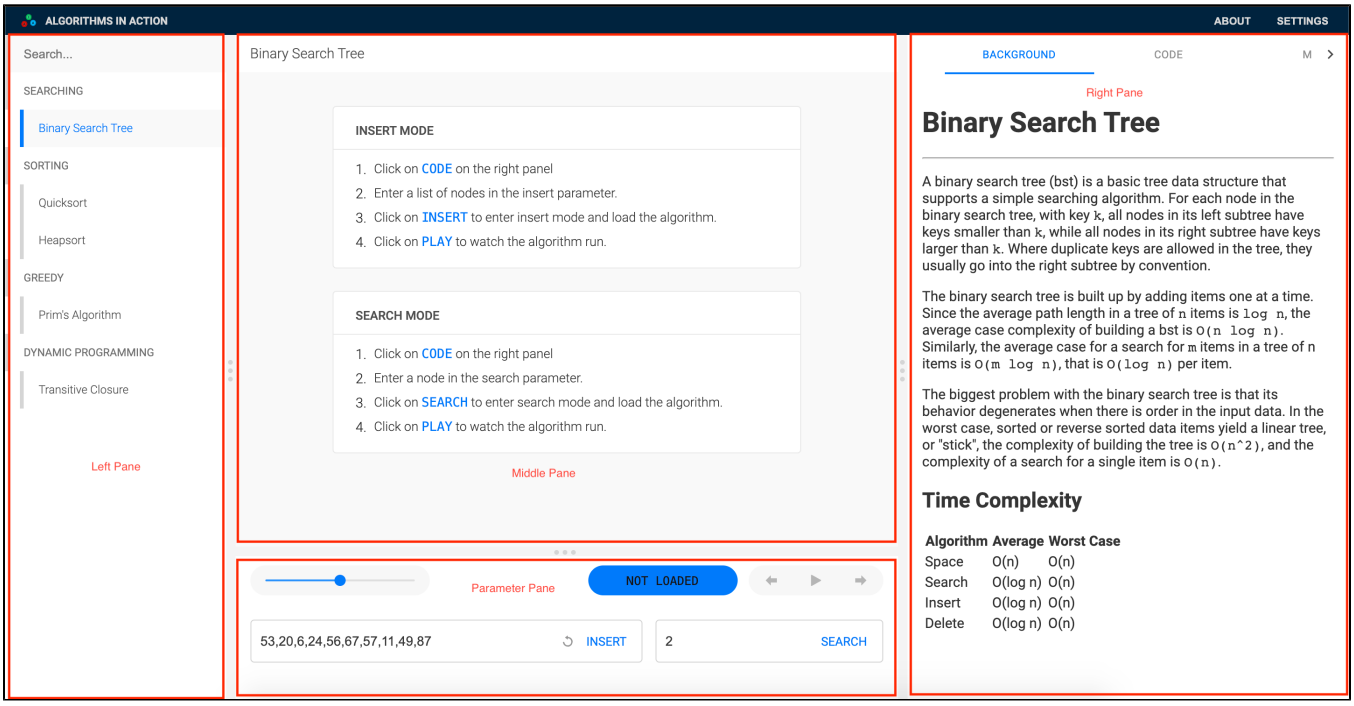



Below is a graphic displaying the various components of the front-end interface which have been explained in detail in the Component Design document -



# Component Design

## Overview of the System




### The Left Pane

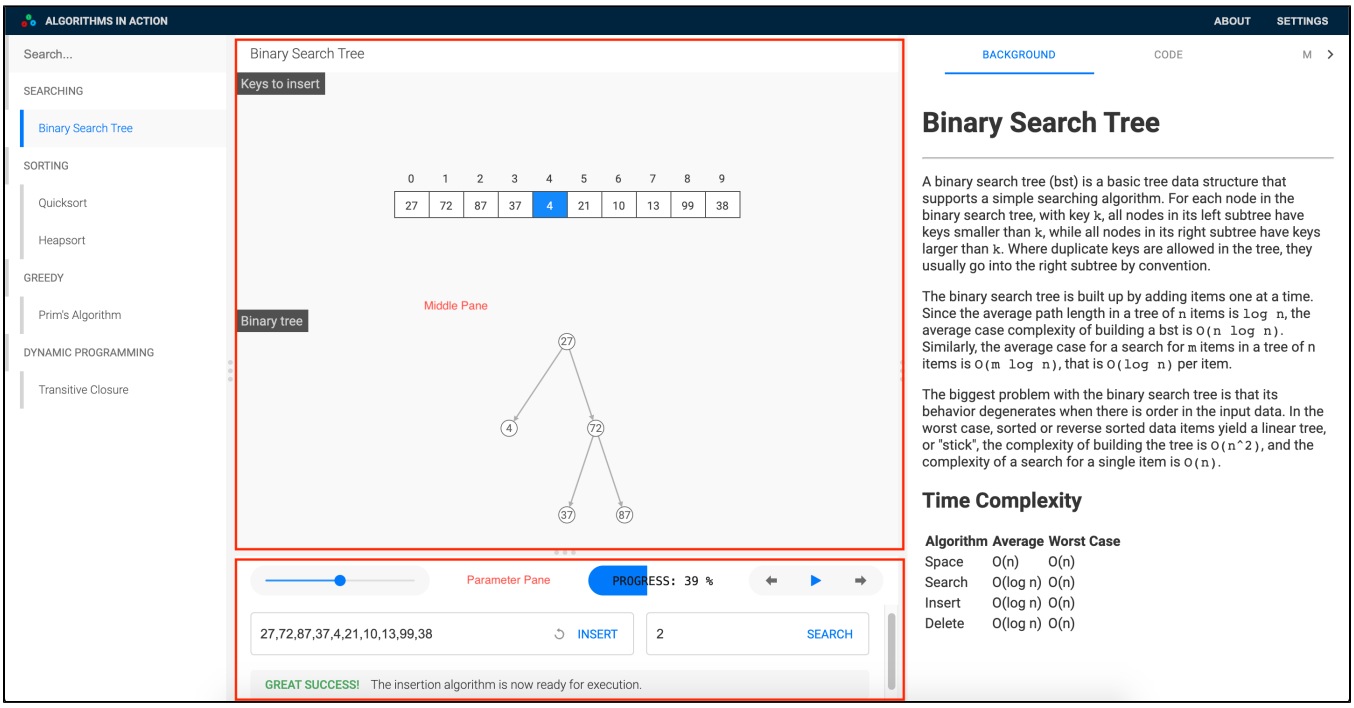
In the AIA system, we have a left pane showing the various algorithms available on the platform. Users are able to select their desired algorithm. Once selected, the middle, parameter, right panes will update accordingly.

### The Middle Pane

The middle pane initially shows the instructions to get started with the algorithm selected. Once, the user has configured and loaded their input, it will be visually represented in the middle pane. When the algorithm is played, all the updates will be reflected in the middle pane.

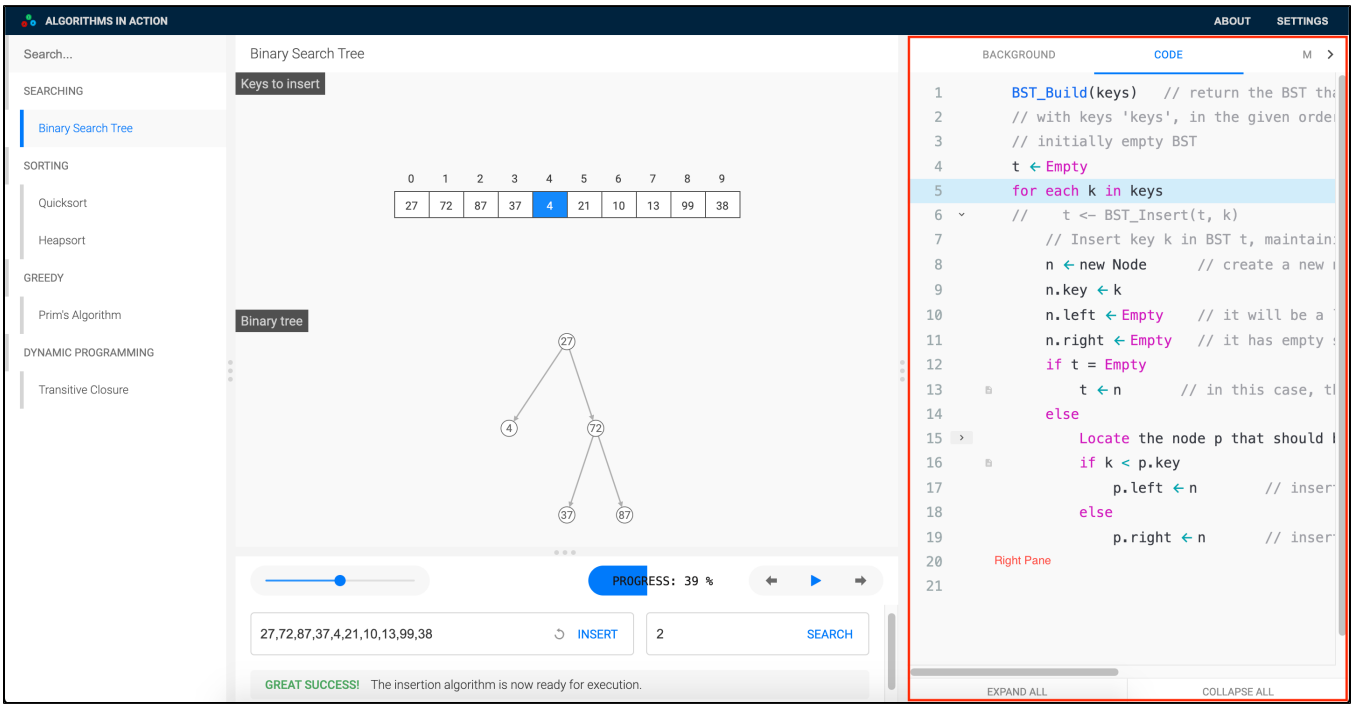
### The Parameter Pane

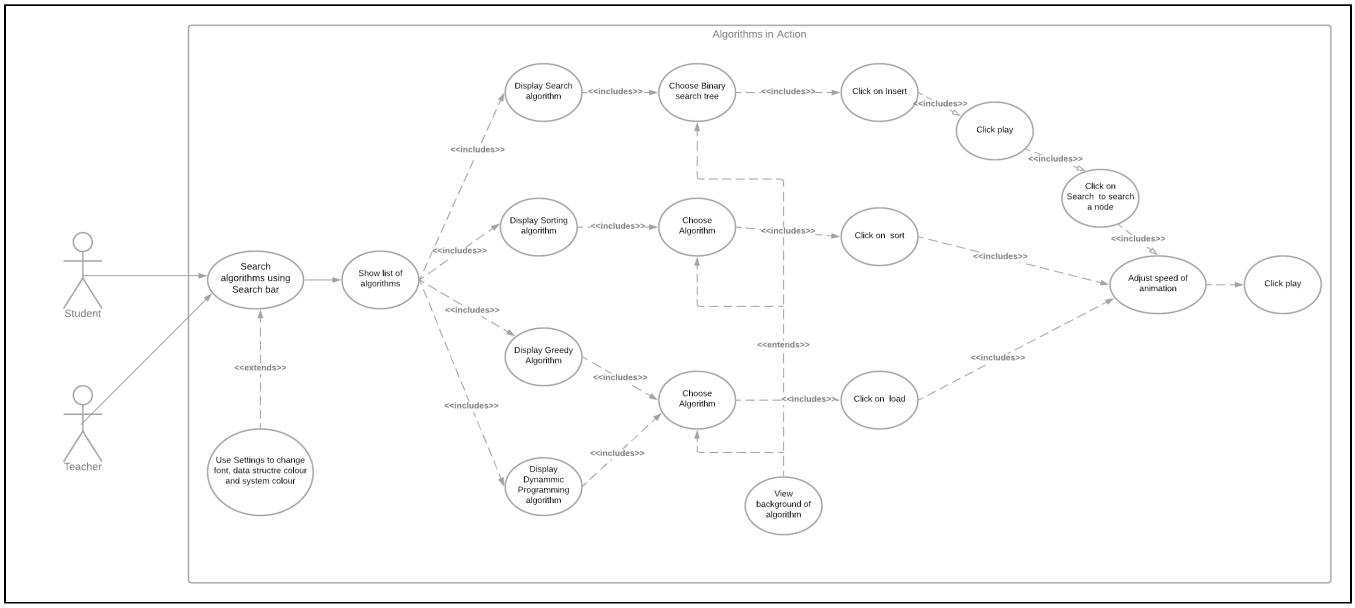
Users can update their desired inputs for the selected algorithm and configure different settings in this area of the system. We are able to play/pause the demonstration of the algorithm, configure the speed and skip forward/backward to previous steps in the demonstration.




## The Right Pane

The right pane has multiple tabs explaining the algorithm. It includes a conceptual overview of the algorithm and pseudo-code. The user can choose to expand or collapse code blocks using the arrows next to the line numbers or use the buttons at the bottom of the right pane to expand/collapse all.



# Use Case Diagram

## Version 1.0