**2D Floor Plan Viewer Implementation**

# **Overview**

This is a simple Interactive 2D Floor Plan Viewer that allows users to:

* Drag the floorplan to view different parts.
* Zoom in and out using the mouse wheel.
* Hover over furniture to display tooltips showing their names.
* View a legend box explaining the symbols used in the floor plan (walls, doors, furniture).

# **Prerequisites**

To run this application, you need:

* A modern web browser (Chrome, Firefox, Safari).
* A sample floor plan data file in JSON format (sample.json).

# Setup Instructions

# Download/Clone the Files

* + Create a folder on your computer.
  + Download and save the provided index.html, style.css, script.js, and sample.json files into that folder.

# Structure of Files

1. **index.html**: Contains the structure of the webpage and links to external CSS and JavaScript files.
2. **style.css**: Contains all the styles for the webpage, including layout, canvas styles, tooltips, and the legend box.
3. **script.js**: Contains all the JavaScript logic for rendering the floor plan, drag/zoom functionality, and tooltips.
4. **sample.json**: Contains sample data defining the regions (walls), doors, and furniture in the floor plan.

# How to Run

1. To run the application, open your project folder in Visual Studio Code and launch index.html using the Live Server extension for proper functionality.
2. Interacting with the Floor Plan:
   * Drag: Click and hold on the floor plan to drag it around the canvas.
   * Zoom: Scroll the mouse wheel to zoom in or out.
   * Hover: Move your mouse over any furniture to see the tooltip with its name.
   * Legend: Check the box below the floor plan to understand the meaning of different symbols (walls, doors, furniture).

# Code Explanation

# HTML File (index.html)

The structure of the page consists of:

* A <canvas> element where the floor plan is rendered.
* A tooltip <div> that appears when hovering over furniture.
* A legend box that explains the meaning of various symbols used in the floor plan**.**

# CSS File (style.css)

The structure of the style.css file consists of:

* Body: Centers content, removes margins, and arranges elements in a column.
* Canvas: Adds a border and spaces it from the legend.
* Tooltip: Styles the floating tooltip with a white background and black border for hover info.
* Legend Box: Provides padding, border, background color, and centers the heading for clarity.
* Legend Symbols: Adds colored boxes (black for walls, blue for doors, green for furniture) for visual representation.

# JavaScript File (script.js)

This file contains the core logic of the application. It handles:

* Fetching floorplan data from a sample.json file.
* Rendering the floorplan on the canvas (drawing walls, doors, and furniture).
* Handling mouse events for dragging, zooming, and displaying tooltips.