



Excel Table Embed Module — Theory of Operation

Objective

Enable CtrlSketch Pro users to import, display, and edit Excel (.xlsx) tables directly within the application. This mimics the workflow found in Visio or AutoCAD where embedded objects (OLE) can be double-clicked for editing and saved back into the drawing environment.

Component: `ExcelTableEmbed.vue`

Core Features

1. Upload Excel File:

- Accepts `.xlsx` files via a file input.
- Uses the `xlsx.js` library to parse the file into JSON format.

2. Render Table to Canvas:

- Displays the first worksheet's data as a table on screen.
- Dynamically builds the table using extracted headers and data rows.

3. Edit Mode (Double-Click):

- Double-clicking the rendered table opens a modal editor.
- All cell values are editable using inline input fields.
- Changes are written back to the main display on save.

Technical Operation

Libraries Used

- `xlsx`: Parses Excel files into usable JavaScript objects.

- Vue 3 Composition API (`<script setup>`): Manages reactivity, state, and lifecycle.
- CSS (scoped): Handles layout, responsive rendering, and modal visibility.

Data Flow

User uploads Excel → SheetJS parses → Table renders → Double-click to edit → Save updates the view.

Internal State

- `tableData`: Holds the primary table state for rendering.
- `headers`: Auto-generated from the first row of parsed Excel data.
- `editBuffer`: Temporary editable copy used inside the modal.
- `editMode`: Boolean that toggles modal visibility.

Integration Points

| Hook | Purpose |

|-----|-----|

| `@change="handleFileUpload"` | Triggers Excel parsing |

| `@dblclick="editMode = true"` | Enables editing |

| `@click="applyChanges"` | Commits updated table data |

Future Enhancements

- Link tables to shape metadata or BOM systems.
- Add multi-sheet selection.
- Support re-export to `.xlsx`.
- Add zoom, resize, and rotate for canvas rendering.
- Sync with Supabase for persistent storage.

Suggested File Path

`/src/components/ExcelTableEmbed.vue`

Summary

This module brings native-like Excel handling into CtrlSketch Pro, enabling embedded schedules, parts lists, and data tables to be seamlessly managed in a design environment. It mirrors the fluid OLE workflow familiar to Visio users — but entirely within a browser-based, Vue-driven CAD platform.