

Meeting Notes 6/27/2024

Frontend-Backend Communication

- The form's next step is determined by inputs
 - Next set of "nodes" in the option "tree"
- Depending on inputs, an additional calculation may be required before table lookup step.
 - Temperature Calculation for Unconditioned Interiors
 - Above-Grade and Below-Grade Fractions for Basement Walls
 - Shaded and Unshaded Fractions for Windows
- Details about the surface's location may reveal it is applicable in Winter Only
 - Basement Walls/Floors
 - On-Grade Floors

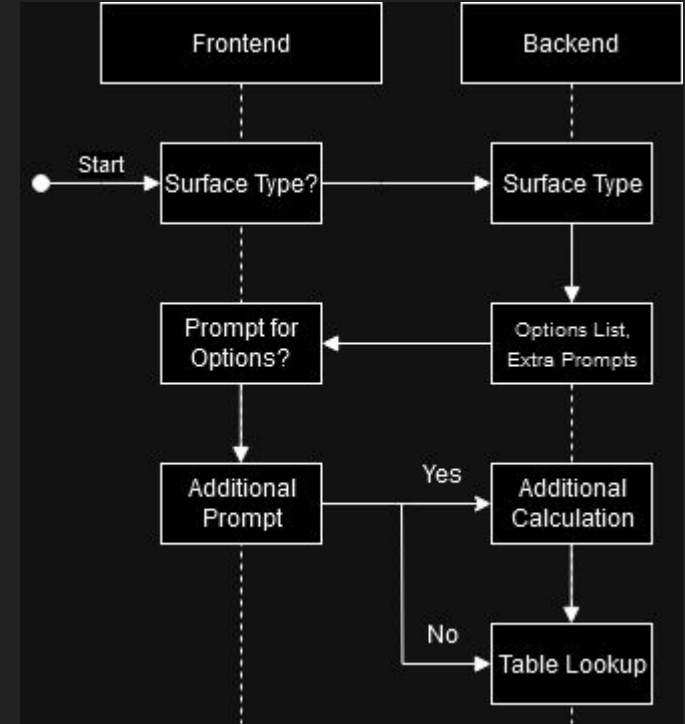


Table Lookup Algorithm (2-4 Only)

- Pick series of x-coordinates (temperatures) and y-coordinates (HTM values)
 - Dict-type Indexing (e.g. table_3 ['clear glass'] ['venetian blinds'] ['north']) for pseudocode
 - In reality we'd use a DuckDB select statement
- Interpolate based on design-point temperature delta
 - Using numpy function in example code

```
def table_lookup(table_num, option_set, TD):  
    match table_num:  
        case 2:  
            #x_data = ROW 1 OF TABLE 2  
            y_data = table_1[option_set[0]][option_set[1]][0:len-1]  
        case 3:  
            #x_data = ROW 1 OF TABLE 3  
            y_data = table_2[option_set[0]][option_set[1]][option_set[2]][0:len-1]  
        # ...  
    HTM = np.interp(TD, x_data, y_data)  
    return HTM
```

Task List

- Deciding Form UI (How the prompts look)
- Choosing SQL Interface
 - In-Memory Database (DuckDB), Object-Relation Model, SQL API, etc.
- Setting up Prompt Tree
- Setting up SQL Database & Table Lookup Function
- Additional Calculation Algorithms
 - Unconditioned Interior Temperature Calculation
 - Above-Grade/Below-Grade Wall Fractions
 - Shaded/Unshaded Window Fractions
- Infiltration & Ventilation Algorithms
- Duct Loss/Gain Algorithm

Notes

