

# Process Book

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## Data Serving

The backend uses a `node.js` and `express.js` backend. We went with this method due to having prior experience on the team, as well as being able to serve from SQL queries, improving the speed of data collection, aggregation, and use. We also used a compiler to allow use of ES6 and multi-file frontend for ease of development and code readability.

## Global State

After initializing the selection table, we realized we needed a way to update all the visuals interactively and efficiently. We developed a custom event bus that could accept listeners for custom events, such as updating quarters and the selected company, and would dispatch events when the global state it stored was updated. This allowed us to make the visuals more dynamic and based on a current global state controlled by multiple visual elements.

## Date Slider

This is the visual for selecting the quarter and year, as well as whether to look at a quarter or an entire year of data.

### Initial Design

First iteration was to allow functionality only. We went with a raw html look, and used D3 to generate a table where each cell represented a ticker. The border of the selected cell would be highlighted as the slider was moved, simulating highlighted text tickers at each step.



This step does not account for actual dates, but sets the groundwork for adding quarters and years under each ticker for future selection.

# Company Selection Table

This visual displays all the companies we have data for, and allows users to sort by the displayed columns, and select a company. When a company is selected, it updates the global state which causes all other visuals to represent data for that company instead.

## Initial Design

First iteration of the table only relies on the Symbol data to exist. the creation function will add headers for any columns in the result, but `Symbol` is used to update the global state. We used `d3` to generate the headers from the object keys, and to generate all following rows from the data each object had of those keys. This table can also be sorted by clicking the header cells, sorting by the column and changing the direction (ascending / descending).

Symbol	Name	Sector
XOM	Exxon Mobil Corp	ENERGY & TRANSPORTATION
WMT	Walmart Inc	TRADE & SERVICES
WFC	Wells Fargo & Company	FINANCE
VZ	Verizon Communications Inc	TECHNOLOGY

We also have the ability to display which row is hovered over

Symbol	Name	Sector
XOM	Exxon Mobil Corp	ENERGY & TRANSPORTATION
WMT	Walmart Inc	TRADE & SERVICES
WFC	Wells Fargo & Company	FINANCE

And the ability to click a box and highlight the selected entry with a different color

Symbol	Name	Sector
XOM	Exxon Mobil Corp	ENERGY & TRANSPORTATION
WMT	Walmart Inc	TRADE & SERVICES
WFC	Wells Fargo & Company	FINANCE