Senior Frontend Code Challenge: Plotter

Introduction

At Incorta, it's crucial for our customers to take fast business decisions based on the data available. This is why data visualization is important for noticing patterns and relationships in the data.

A datasource provides data for many columns, where a column can be a “dimension” or a “measure“.

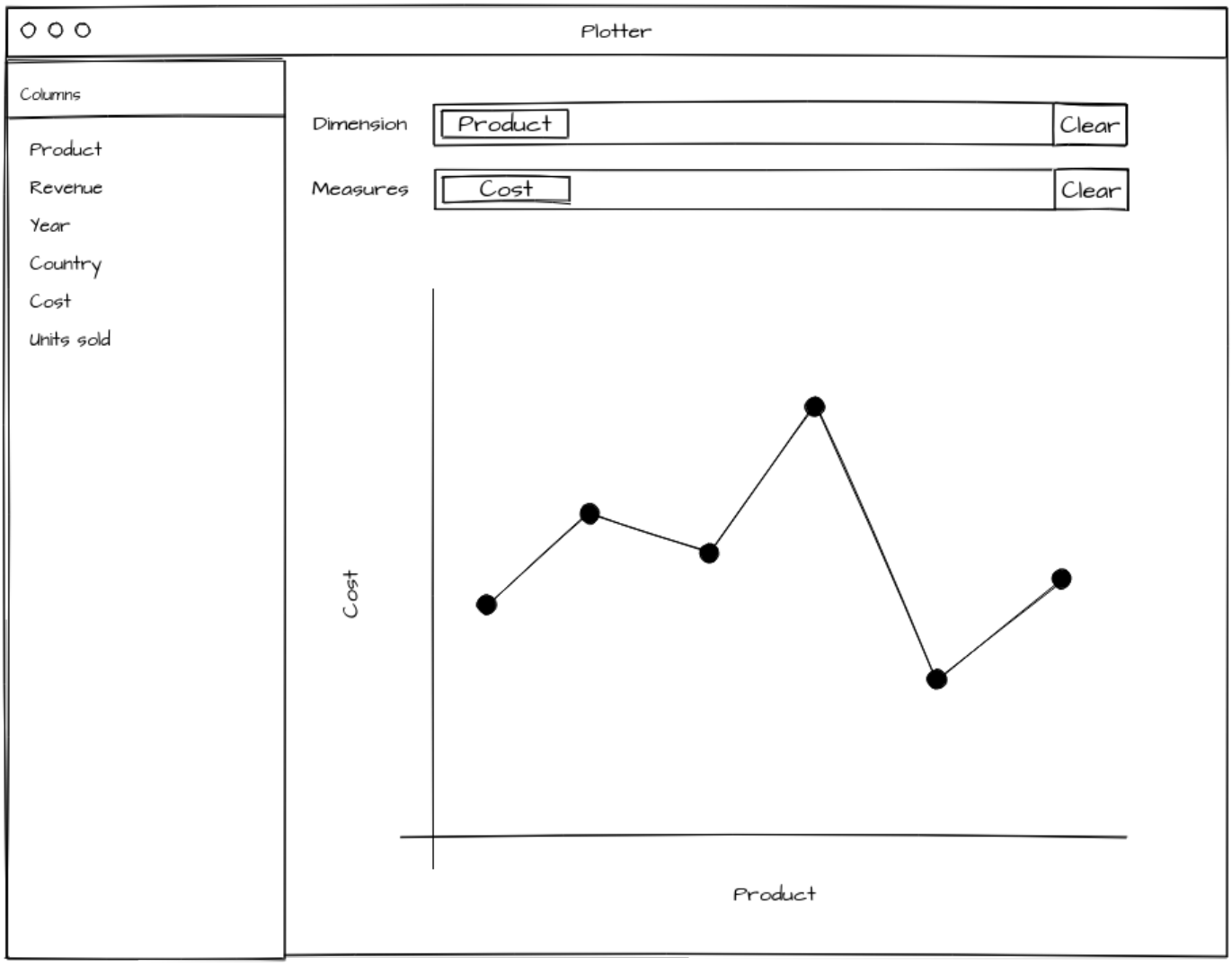
A dimension is a qualitative, categorical information. (e.g. Product, Year, Country)

A measure is quantitative, numeric information. (e.g. Cost, Revenue, Units sold)

We need to build a frontend app, so that the customers can discover all the columns available in a datasource. And based on their business need, draw a line-chart of a measure in correspondence to a dimension. The measure values are represented on the Y-Axis of the chart, and the dimension values are represented on the X-Axis of the chart.

For example: Plot the Cost in correspondence to each Product.

The Product is a dimension-column (represented on the X-Axis of the chart), and the Cost is a measure-column (represented on the Y-Axis of the chart).



Requirements

- Should show list of columns (dimensions and measures).

- Should be able to drag a dimension column to the “Dimension” box.
- Should be able to drag a measure column to the “Measures” box.
- Dimension box should only have one column.
- Measures box may have multiple columns (for this task it is acceptable to have one measure only).
- Should be able to clear the the “Dimension” and “Measures” boxes.
- Once the “Dimension” and “Measures” boxes are filled, a line-chart should be plotted. Where the X-Axis represents the dimension data-values and the Y-Axis represents the measure data values corresponding to the dimension values
- The line-chart plot should be clearly showing the
    - Data points (the points representing the data on the plot)
    - Lines connecting the data points
    - Label on each axis, showing the current measure/dimension column name
    - X-Axis should show ticks with labels representing the current dimension values
    - Y-Axis should show ticks with labels representing current measure ranges

The API

Get all columns `'GET https://plotter-task.herokuapp.com/columns'`

Get all columns available.
Response:

```
{
  "columns": [
    {
      "name": "Product",
      "function": "dimension"
    },
    {
      "name": "Year",
      "function": "dimension"
    },
    {
      "name": "Country",
      "function": "dimension"
    },
    {
      "name": "Cost",
      "function": "measure"
    },
    {
      "name": "Revenue",
      "function": "measure"
    },
    {
      "name": "Units sold",
      "function": "measure"
    }
  ]
}
```

Get data `'POST https://plotter-task.herokuapp.com/data'`

Get the dimension and measure columns data values.

Request:

```
// Content-Type: application/json
{
    "measures": ["Cost"],
    "dimension": "Product"
}
```

Response:


```
{
  "data": [
    {
      "name": "Product",
      "values": [
        "Diskette",
        "Memory Card",
        "HDTV Tuner",
        "Flat Panel Graphics Monitor",
        "Digital Camera",
        "Minitower Speaker",
        "Extension Cable",
        "Y Box"
      ]
    },
    {
      "name": "Cost",
      "values": [
        333.08,
        7.07,
        10.77,
        194.76,
        13.18,
        143.3,
        20.2,
        405
      ]
    }
  ]
}
```


Assumptions

- All columns have same size of data values, which matches the dimension’s values order.

Bonus

- When hover on the data-points, show a tooltip for the values at that point.
- Support multiple measures plotting at the same time.

Non-functional Requirements

- The project should be implemented in React.js
- The project should have .git folder, with meaningful commits (showing your natural working process)
- Use any third party libraries as needed.

Submission

Reply to the problem e-mail, with an archive of your frontend project including the '.git' folder.

Submission will be judged on

- Functionality
- Code quality
- Code simplicity
- Error handling
- Unit testing