Lab 6: D3 Enter, Update & Exit

Enter-Update-Exit

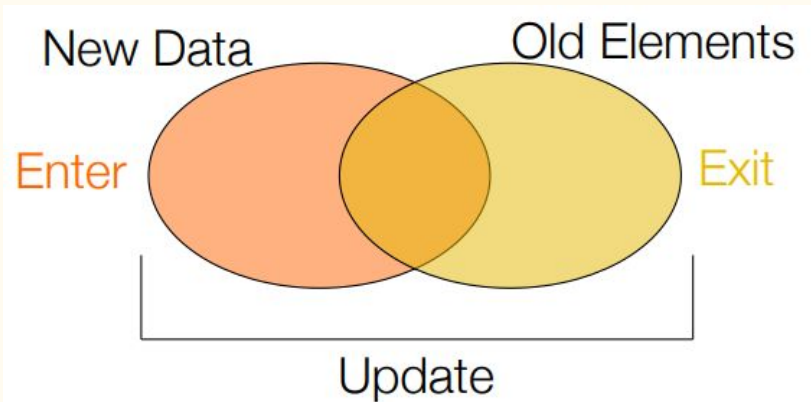1. .enter()

   a. New data points

2. .exit()

   a. Elements to be
      removed

3. .enter() and .exit()
   only exist when .data()
   has been called


```
var circle = svg.selectAll("circle").data(data) // UPDATE
    .style("fill", "blue");

circle.exit().remove(); // EXIT

circle = circle.enter().append("circle") // ENTER
    .style("fill", "green")
  .merge(circle) // ENTER + UPDATE
    .style("stroke", "black");
```

Enter-Update-Exit

1. .data([1,2,3,4])

   a. Enter: [1,2,3,4]

   b. Update: [1,2,3,4]

   c. Exit: []

2. .data([1,2,3,4,5,6])

   a. Enter: [5,6]

   b. Update: [1,2,3,4,5,6]

   c. Exit: []

3. .data([1,2,3])

   a. Enter: []

   b. Update: ???

   c. Exit: [4,5,6]

Objective

1. Create interactive bar chart based on selection using enter-update-exit methodology

Explanation of code

```javascript
// Global function called when select element is changed
function onCategoryChanged() {
    var select = d3.select('#categorySelect').node();
    // Get current value of select element
    var category = select.options[select.selectedIndex].value;
    // Update chart with the selected category of letters
    updateChart(category);
}
```

```javascript
d3.csv('./letter_freq.csv',
    // Load data and use this function to process each row
    function(row) {
        return {
            letter: row.letter,
            frequency: +row.frequency
        };
    },
    function(error, dataset) {
        // Log and return from an error
        if(error) {
            console.error('Error while loading ./letter_freq.csv dataset.');
            console.error(error);
            return;
        }
```

```javascript
function updateChart(filterKey) {
    // Create a filtered array of letters based on the filterKey
    var filteredLetters = letters.filter(function(d){
        return lettersMap[filterKey].indexOf(d.letter) >= 0;
    });

    // **** Draw and Update your chart here ****

}
```
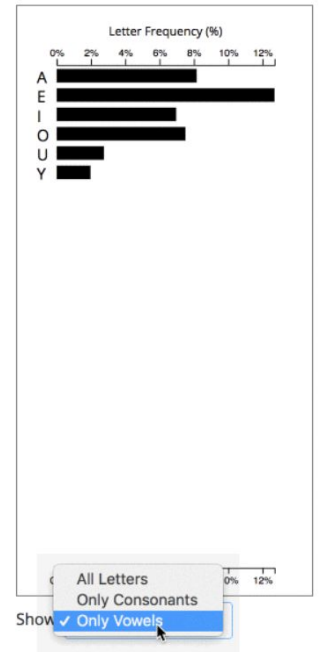
Activity 0

1. Create a global data variable

2. Create a linear scale for `frequency` data attribute

3. Create two x-axis (top and bottom)

4. Create x-label

Letter Frequency (%)

0%   2%   4%   6%   8%   10%   12%

0%   2%   4%   6%   8%   10%   12%

Show: All Letters ⇕
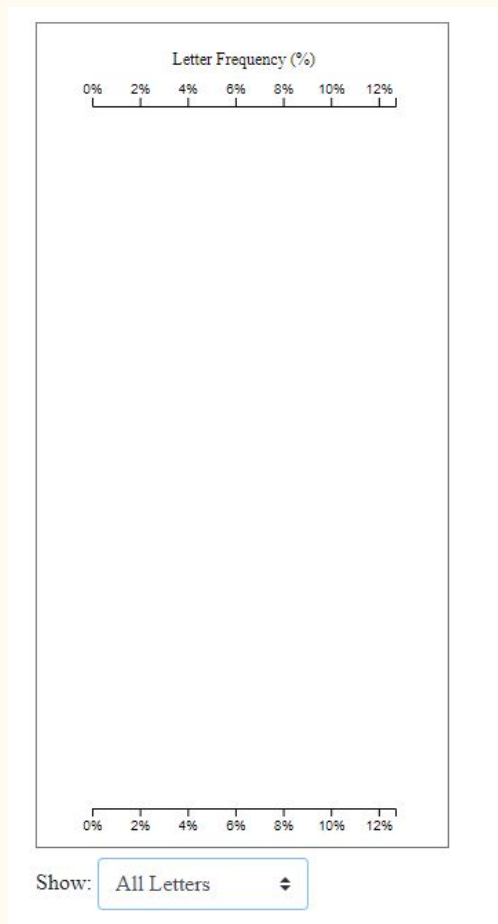
Activity 1

1. Create an update selection

2. Enter and append all new elements

3. Exit and remove filtered bars

Submission

1. Change the text of **\<p\>** in index.html to your name

2. Take screenshots of both the code and output for Activity 0 (1 screenshot) and Activity 1 (3 screenshots)