D3 VISUALIZATION OF BASKETBALL PLAYER DATA

Introduction:

Visualization is an essential technique to demystify data at hand. This work is a part of Assignment-1 of the course CSE 564 (Visualization and visual analytics) at stony brook.

As part of this work we have created a histogram of given data where we can change the attribute and get the histogram for selected attribute. Also, there are some transformations like hovering over the bars it shows the values of the current bar as well as highlights it. Also, we have created pie chart of same data which is visible on single click on the screen, it shows back the histogram when once again we click on the screen. Also, we have created one force layout as part of extra credit.

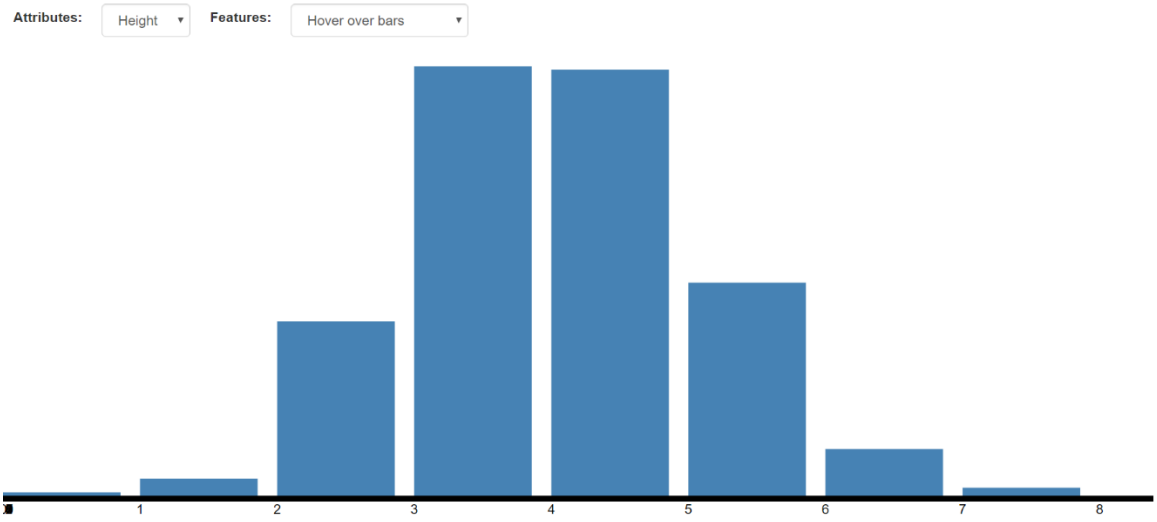
Data:

For the histogram and pie chart I have taken the data of baseball players from https://docs.google.com/document/d/1w7KhqotVi5eoKE3I_AZHbsxdr-NmcWsLTIiZrpxWx4w/pub

Which is a csv file listing height weights and other information of baseball players. For the force layout I, have made a sample data with numbers as nodes and some random links between them for demonstration purposes.

Features Implementation:

On the top of the first page I have provided 2 menus :



One is Attributes which is a dropdown to select one of the attribute which we want to select for the histogram. Second dropdown is for showing different features. Since there were multiple features overlapping with each other I have created a menu to select the functionality and then demo that functionality.

First of all, I have associated events with both the select menus. As soon we change them we rebuild the canvas taking those selections into account. Other than these 2 menus we have 2 more hidden elements in the layout one is for storing number of bins that we want second is for storing the information about whether we are displaying the pie chart or histogram. On change on these values as well we rebuild our canvas.

Below are all 4 html elements which are part of the code.

```
<input type="hidden" name="bins" value="10" id="bins" onchange="build()">
<input type="hidden" name="flag" value="0" id="flag" onchange="build()">
<select id="options" class="form-control" onchange="build()">
<select id="features" class="form-control" onchange="feature_selection()">
```

Now as we see on change of 3 of the elements we are rebuilding the canvas and on the one which is the select for feature we are setting a global variable to identify which feature is selected currently.

Now First we have created an svg element on the screen which is also having a on click event associated with it. Which change the value of “flag” element above and force us to rebuild the canvas either with pie chart or histogram. Inside the build function which is being called on change of any of above dom element we are deciding whether to build pie chart or a histogram or an force layout.

```
function build() {
  $("#mainsvg").empty();
  if (document.getElementById("flag").value == "0") {
    buildHist();
  } else {
    buildPie();
  }
}
```

Now inside these functions we take the value of Attribute select and load the data of that column and divide it into number of bins given by the hidden element and we plot it using d3.

We attach events based on selected feature with the different elements. Also when we change the feature option we unbind the earlier events associated with the elements and bind new ones which are required.

```
function feature_selection() {
  var curr = document.getElementById("features").value;
  var attr = document.getElementById("options").value;
  $("#mainsvg").unbind('mousemove');
  $("#mainsvg").unbind("click");
  if (curr == "hover") {
    selected_feature = "hover";
    $("#mainsvg").bind("click", addMouseClick);
    build();
  } else if (curr == "mousemove") {
    selected_feature = "mousemove";
    $("#mainsvg").bind("mousemove", addMouseMove);
    $("#mainsvg").bind("click", addMouseClick);
    build();
```

```
    } else if (curr == "force-layout") {
        selected_feature = "force-layout";
        $("#mainsvg").empty();
        buildForceLayout();
    }
}
```

I have used bootstrap to make the multi select menu look prettier and JQuery to make binding and unbinding of the events easier. Most of the functionalities are clear by looking at the code. Also looking at the demo video.