CS 416 – Narrative Visualisation

URL: [CS 416 Narrative Visualization (ksamant2) - kunal19899.github.io](https://kunal19899.github.io/)

This narrative visualization has been created to show the user the factors which contribute to the insurance charges an individual faces (smoker, bmi, age, number of children, gender). The main aim is to look at each category and see its effect on the charges and diagnose the factor which contributes most to the charges, as well as understand the relationship each category has with the charges field. The overall messaging which is indicated by this visualization is that age and smoking habits are the factors which contribute the most to one’s insurance charges. BMI and number of children have a slight significant effect and gender has no effect.

This visualization follows an interactive slide show structure. The slides are ordered from top to bottom and there are 3 main slides with a slide at the end used to list the source dataset which was used. Each slide also has the capability to drill down for further information. The visualization starts with an overview slide which explains the purpose of this visualization and then goes on to show the trend in the charges an individual incurs vs their age. The user can then go to the slide which shows the trend in insurance charges based on other factors such as BMI, smoking habits, gender, and number of children. The last slide goes into detail about the smoker data and compares the number of smokers in each region with the average charges each region sees. This is done as in the previous slide; it is easily conclusive that a person’s smoking habits has the highest effect on the one’s insurance charges. This style of visualization helps the user follow along and understand the reasons why one may pay more money in insurance.

**Visual Structure**

The visual structure of the website is designed in a way to engage the user and allow for exploration while keeping interest. It also helps the user follow a flow. The user will first see the overview and the basic information which is needed to continue through the visualization and the continues to the next slides which drill down into each factor. Each slide has 3 sections: a summary, the charts, and a section which gives a breakdown of the understandings that can be drawn from the charts. Furthermore, there is a sticky navigation bar at the top which can be used to help the user navigate to specific sections as needed.

Text formatting and animations have also been added to draw the users attention to important parts of the visualization. In the first slide, the line which shows the trend between average insurance charges and age has been animated on load. The user is drawn to this and then can proceed to read the understandings portion of the slide. The buttons on the site are formatted to look 3 dimensional and eye catching so that the user knows to click on it. Text is also provided to ensure the user knows what the buttons will do once toggled. The gender chart and the smoking habits chart also use color coding to specify the 2 different filters which are being mapped on the graph. The bar charts have the actual value (y-axis value) listed above the bar, so the user knows what the value is showing.

**Scenes**

On top of the 3 main slides which can be seen once the website loads, each slide can be altered at the click of a button to display additional scenes. The first slide, which displays age vs insurance charges, has the option to show average charges for each age and toggle every data point without averaging. The chart which averages charges per age is displayed to make it easier for a viewer to see the trend without having to be overwhelmed by so many points on the scatter plot. This is consistent throughout all graphs where age is plotted across charges. The factors slide has the option to see the effect of BMI, gender, smoking habits, and number of children has on the charges. Smoking habits and gender are mapped to show 2 charts on one graph so the user can compare each option within the 2 factors.

**Annotations**

This visualization has a few important annotations. For example, in the last scene, the fact that the region with the highest average charges is the same region with the highest number of smokers is emphasized. Annotation is also present in the first scene’s second chart (All Data), and is used to emphasize the need to average out the charges per each age.

**Parameters**

The parameters in the visualization include all 8 buttons which are listed through the webpage. Each button changes the state of the svg within its specific scene.

**Triggers**

The buttons in the visualization act as triggers to change the svg.

Overall, I have used a lot of the concepts taught throughout the class with respect to the structure and interaction of the narrative visualization to create this slide show and best help the user navigate and understand what they are seeing.