Link: <https://dlanisweeney.github.io/DS4200-GroupProject/>

Visualization 1: Connecticut Overdose Heatmap Analysis

* Data-Design Idea: For this visualization, I wanted to focus on delivering clear and impactful insights through geographic representation. By using a color gradient to represent the number of overdose deaths, the map highlights areas with the highest concentrations of fatalities, with darker shades representing more severe impacts and lighter shades representing milder impacts. Viewers can zoom in and out for a more detailed or broad view of the map to enhance their understanding of where the crisis has the most impact. The hover feature provides county-specific data, displaying the name and total deaths from 2012-2023 for each region. The legend at the top also ensures easy interpretation of the color scale. The interactive design of this visualization allows stakeholders, policymakers, public health officials, and researchers to be able to explore the regional disparities, identify trends, and prioritize intervention to specific areas based on the data.

Visualization 2: ct overdose geomap

* Data-Design Idea: This visualization is intended to be interacted with to better understand where each overdose is occurring and what that overdose looks like. The hot spots are colored code (red being high rates of overdoses, 100+, yellow being a medium amount of overdoses, 10-100, and green being a low rate of overdoses, <10). Viewers can zoom in or click on the hotspot area to see how the spot changes when looking closer. The red points symbolize individual overdoses and when you click on them to see the individual’s race, age, and drugs found in their system. Areas with large amounts of overdoses, like hospitals, can also be clicked on to see the individuals that died in that area. This data is from 2012-2023, so it is meant to showcase overdose hotspots during this time.

Visualization 3: overdoses by year and race

* Data-Design Idea: This graph is an interactive altair visualization. It shows the count of records by race for each year. The user is able to choose what years they would like to highlight and see how the racial demographics change. The colors were chosen on colorbrewer to show a sequential order. The visualization allows the user to see both how overdoses have changed over time in Connecticut and also how different races have become more or less susceptible to overdosing.

Visualization 4: overdoses by age and sex

* Data-Design Idea: this graph is an interactive altair visualization. It shows the count of records by gender and age for each year. The user is able to choose the years, similar to the above graph, and see how the age and gender demographics change. The colors were chosen using colorgorical. The visualization allows the user to see how different genders are impacted by overdoses in the area, and in turn how different ages are also impacted.

Visualization 5: age distribution by sex

* Data-Design Idea: This stacked bar chart delivers a demographic snapshot. It is color-coded so that the blue represents males, pink represents females, gray represents unspecified. We can see a clear bimodal age distribution which peaks at 35 and 50 years. This plot is interactive, allowing the user to see precise counts when hovering. A legend is included, explaining the sex categories and dual axis labels ("Age" and "Number of Cases") for clarity. The chart's most impactful revelation is the disproportionate representation of middle-aged males. Public health officials can use this to tailor prevention programs to high-risk demographics, while sociologists might investigate why these specific age groups show elevated vulnerability.

Visualization 5: Drug Usage Counts in Overdose Cases

* Data-Design Idea: This bar chart shows the frequency of certain types of drugs in overdoses in the state of CT. The drugs are sorted by frequency, with fentanyl being the most frequently used in overdose deaths compared to other substances. The chart features a responsive tooltip showing the exact number of total cases. This visualization helps law enforcement prioritize drug interdiction efforts and guides healthcare providers in preparing for the most common overdose scenarios.

Visualization 6: Overdose Incidents Over Time (2012-2023)

* Data-Design Idea: This line chart reveals overdose trends over time. It is interactive, allowing the user to scroll their mouse over the points at each year to see what the exact count of overdoses is. The chart highlights a dramatic spike in overdoses across all groups during 2020-2021 (COVID-19 pandemic years). This visualization helps policymakers and public health professionals identify how prevention implementations in the past have been effective or ineffective, and enables researchers to investigate the factors behind these fluctuations.