IVIZ TWO FINAL

KAILEN KING

UNIVERSITY OF SOUTH CAROLINA

COLUMBIA, SC 29208

INTRODUCTION AND BACKGROUND

The dataset being used is from covid 19 datahub. The motivation for using this dataset is to find out what can be correlated with different variables that affected the pandemic. The datahub inspired me to use this set because it involved information about deaths, schools, and vaccinations worldwide.

OBJECTIVES AND GOALS

The learning goal is to find out where people have died the most during covid. Another goal is to figure out if closed schools, would it affect the number of deaths during the pandemic. Using as many variables as possible to show proper information about change. This project will benefit others because it will show how many things affect the amount of deaths during a mass virus. It can show which things need to be done and what things need to be avoided to reduce deaths in a pandemic.

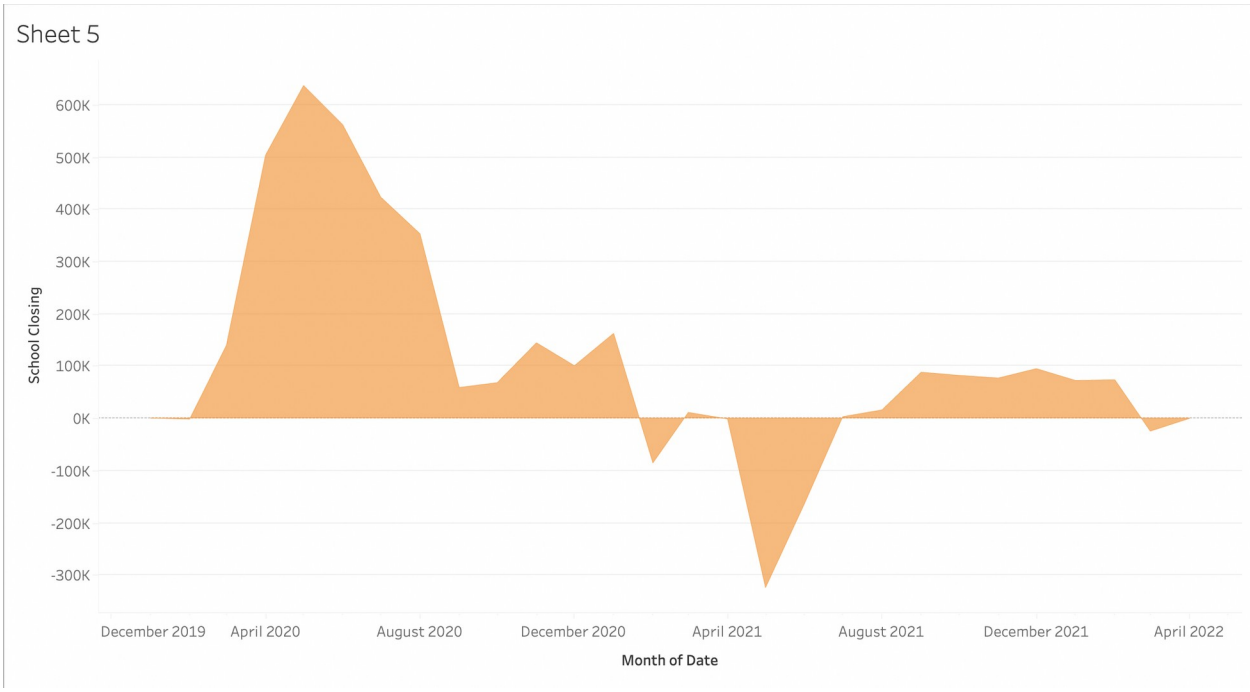
DATASETS

The dataset was found on the covid 19 datahub. The data was developed by Emanuele Guidotti from the University of Neuchâtel, and leveraged by David Ardia (HEC Montréal) via the funding by IVADO, and it is open source. The dataset was created to inform the public about the different variables that can be quantified and show a correlation with affecting the trajectory of

covid fighting efforts. The timeline is from 2020-2022. The dataset does not have posted information for how large it is, but there is data accounting for over 100 million people. There are 50 variables.

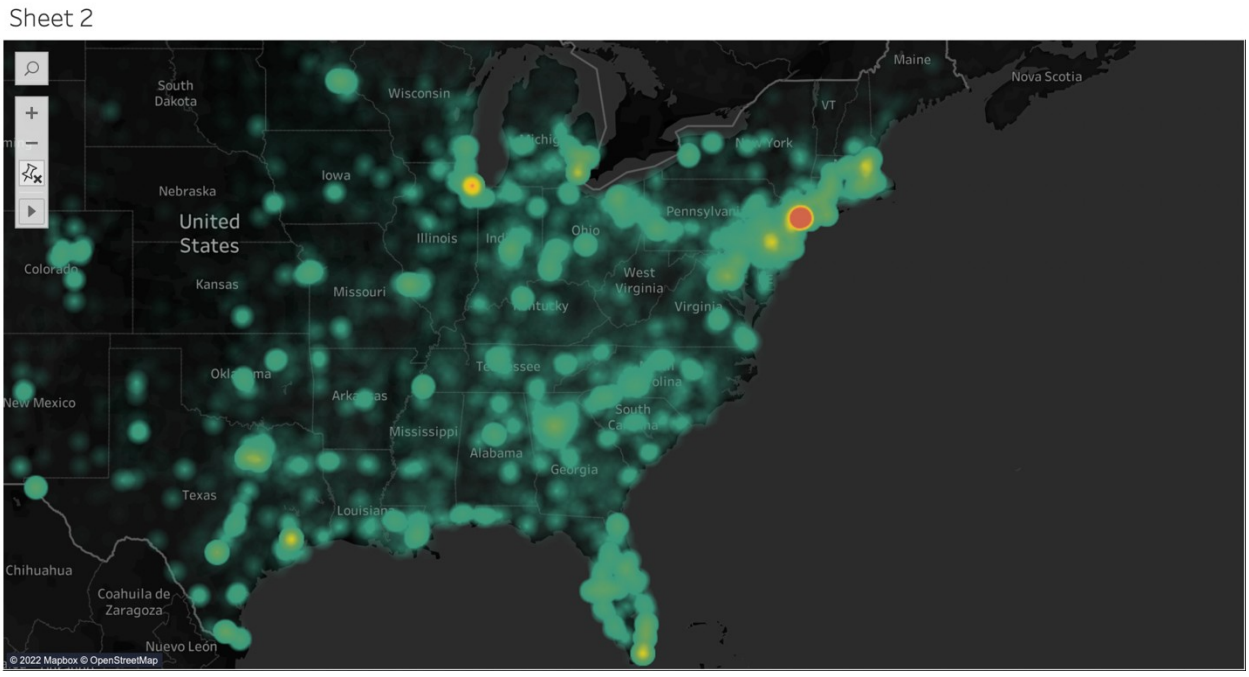
VISUALIZATION PLAN

The closing of schools started to happen as the issue of covid progressed in the world. They were suspended in 188 different countries (Lee, Joyce). Over 90 percent of student were out of education at some point during the pandemic (*UNESCO*). Children with autism were affected by a large proportion based on their schedules being disrupted. This visualization for worldwide school closures is good because it clearly shows the progression over time. It's easy to see the peak of school closures around June of 2020 and how this inverse effect happened exactly a year later on a smaller scale.



Horizon chart for closing schools

There was a large surge of cases at the end of 2020 that led to the virus being the leading cause of death (Deaths from COVID-19). These can be visualized in the east coast of the United States alone with a heatmap representation. The heat map is the best use for showing this because it can easily be seen that the most densely populates states get affected the most. These cities have a hard time keeping people at a distance so more deaths were caused. New York city's boroughs have the most cases of deaths as seen by the red intensity.



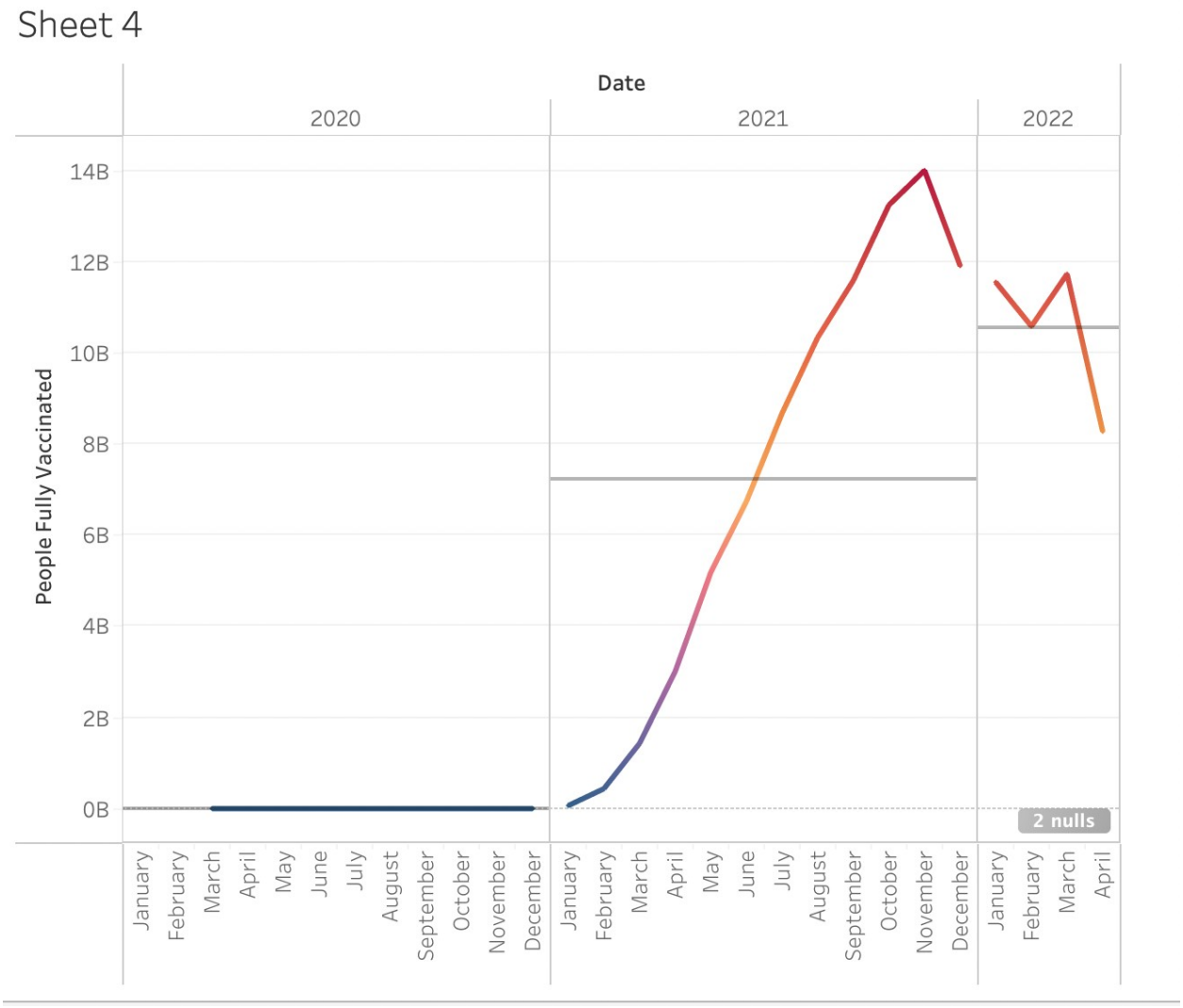
Deaths heatmap east us

There was a rapid development of a vaccine for the virus within a year and it did not come without side effects. With reports of 60% of recipients having experienced a combination of fever, headache, myalgia, and general malaise. The covid vaccine has frightened some people from taking it at all ("COVID-19 vaccine side effects: The positives about feeling bad."). This next visualization shows the initial world global vaccination records in the millions using a spyder map. This is the best visualization to use for this because it shows the density of how vaccines are distributed and where they are connected from.

spyder map vacinations

Following the full vaccinations of populations including the booster it is projected that 95% of the infections and related hospitalizations will go down. This reduces by 10% after 6 months (*Eurosurveillance*). This visualization of fully vaccinated people shows how most people got vaccinated towards the end of 2021 fully. This is the best visualization because it uses color in a

combination with the cycle plot to easily show the statistics of full vaccinations worldwide over a 3-year time period.



cycle plot full vaccinations

REFRENCES

Guidotti, E., Ardia, D., (2020), "COVID-19 Data Hub", Journal of Open Source Software 5(51):2376, doi: 10.21105/joss.02376.

Lee, Joyce. "Mental health effects of school closures during COVID-19." *The Lancet Child & Adolescent Health* 4.6 (2020): 421.

"Education: From Disruption to Recovery." *UNESCO*, 28 Feb. 2022, https://en.unesco.org/covid19/educationresponse.

Koh, Howard K., Alan C. Geller, and Tyler J. VanderWeele. "Deaths from COVID-19." *Jama* 325.2 (2021): 133-134.

Sprent, Jonathan, and Cecile King. "COVID-19 vaccine side effects: The positives about feeling bad." *Science immunology*6.60 (2021): eabj9256.

Bosetti, Paolo, et al. "Impact of booster vaccination on the control of COVID-19 Delta wave in the context of waning immunity: application to France in the winter 2021/22." *Eurosurveillance* 27.1 (2022): 2101125.