Increment -4

1. Project title: Vaccine Trends

2. Team members

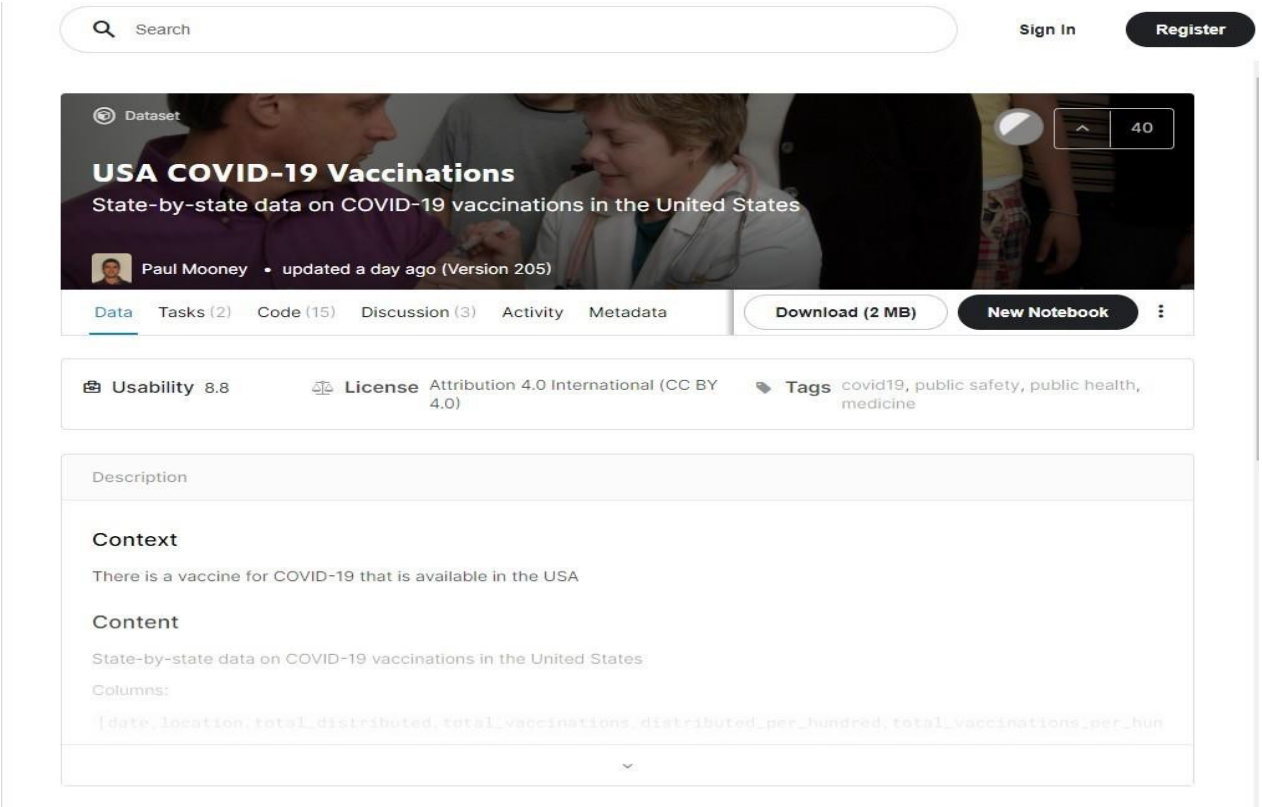
- **Muni Kan aka Sri Shalini Chintam**
- **Abhinay Yadav.**
- **Sai Kumar Gorre.**
- **Anil Nandikonda**

3. Story and details:

Edward is a 23 - year- old college student. He likes to travel all over the USA but due to the pandemic he has stopped travelling and he wanted to start travelling once again but he wanted to be travel to the states which have high vaccination rates in an order to be safe as the virus is still there and mutating and he wanted to see in his intended date to travel what would be the vaccination rate of that particular state.

4. The data for your project

The dataset contains the data about vaccinations of covid -19 of every state in the USA. It shows on that particular date in that state what is the total number of vaccinations administered and rate of distribution of the vaccinations in that particular state and number of people that are fully vaccinated and amount of people who have received at least one dose and what percentage of people are fully vaccinated per hundred and distribution of vaccine per hundred and what is the daily vaccination rate and amount of shared doses. This data is collected from Jan 12, 2021, and this is updating every day.



The data source:

https://www.kaggle.com/paultimothymooney/usa-covid19-vaccination s

The Deep look into the dataset. The dataset contains these columns.

- **Location:** it displays the name of the state where the observation is recorded.
- **Date:** it displays the date at which the particular observation is recorded.
- **Total_vaccinations:** it displays the total number of doses of vaccinations that are done. so the count increases by one whenever the vaccination is administered irrespective if it is 1st dose or 2nd dose.
- **Total_vaccinations_per_hundred:** it is the total vaccinations per hundred by state total population.
- **Daily_vaccinations_ raw:** it is a rough average of the number of doses done on that day.

- **Daily_vaccinations:** it displays the number of doses of vaccination done on that particular date
- **Daily_vaccinations_per_ million:** daily vaccination per million by the total population of the state.
- **People_ vaccinated:** no of people who have received at the minimum of one dose.
- **People_vaccinated_per_hundred:** number of people vaccinated per hundred by the total population of the state.
- **People_fully_ vaccinated:** the count of a total number of people who have received all the doses.

  ex: if that person has taken the Johnson and Johnson then it would have only one but when it is Pfizer the number of doses required would be two to say that the person is fully vaccinated.

- **People_fully_vaccinated_per_hundred:** people who are fully vaccinated per 100 by the total population of that state.
- **Total_distributed:** the total count of doses of vaccines distributed by the CD N.
- **Total_distributed_per_hundred:** the total count of vaccines that are distributed per hundred people by the total population of the state.
- **Share_ doses_used:** the count of the number of doses done that are stored and shipped by the CD N.

We would utilize this dataset for forecasting the vaccination trends and we have the people_fully_vaccinated in the selected state along with that we have also some of
the data on the who for some visualizations.

FEAT U RES OF OUR APPLICATIO N:

- The Website gives the various visualizations of the covid vaccinations in the United States.
- It provides the information about the distribution, utilizations of the distributed vaccines in United States.
- It also provided the nearest vaccination Center and information to check whether a person is eligible to give the vaccine.
- Website provides the some of the protocols which can help in preventing the covid.
- The user can Post queries regarding the Covid19, which we are storing in the Firebase database. Website provides the forecast of people fully vaccinated per hundred for all the states of the United States.
- Here the user can select the state of his choice from the dropdown menu and can view the forecasting.

5.Working Screens from project

WEBSITE

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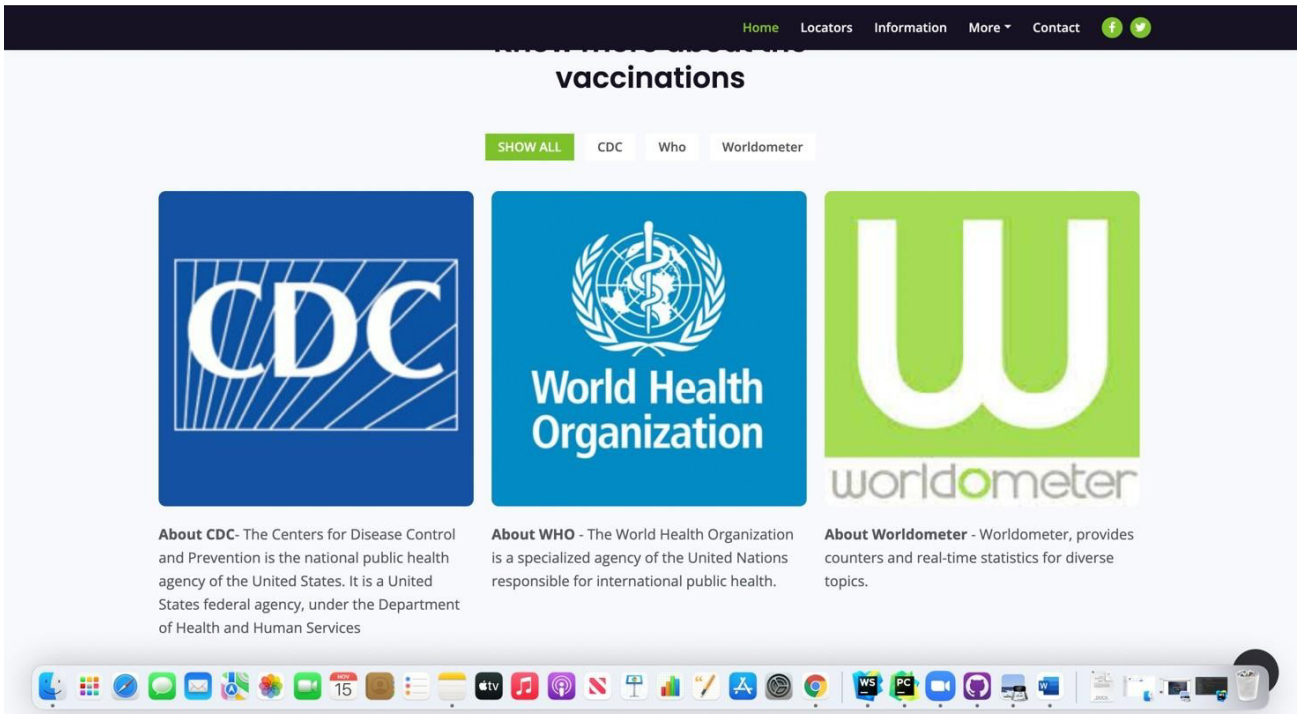
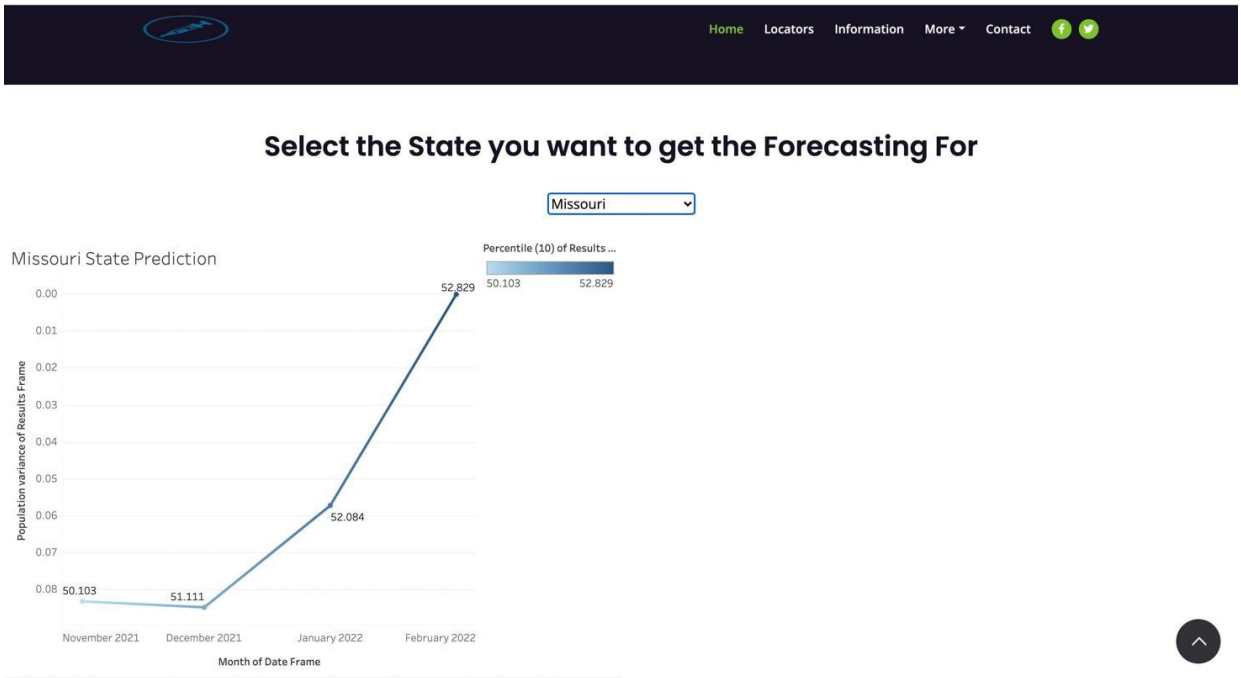
Home Page:

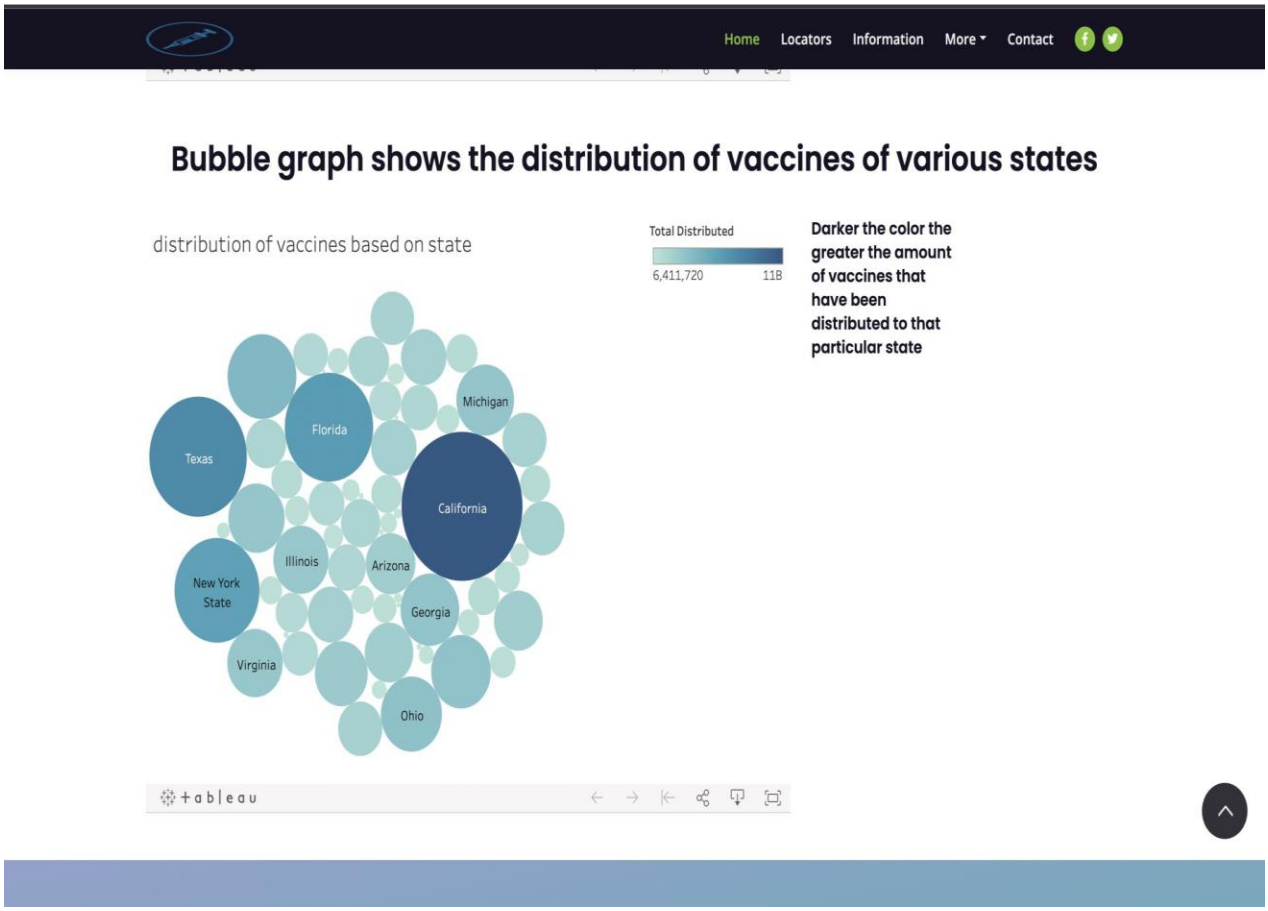


Forecasting page. Based on the state you select in the drop down you are able to get your forcasted value.



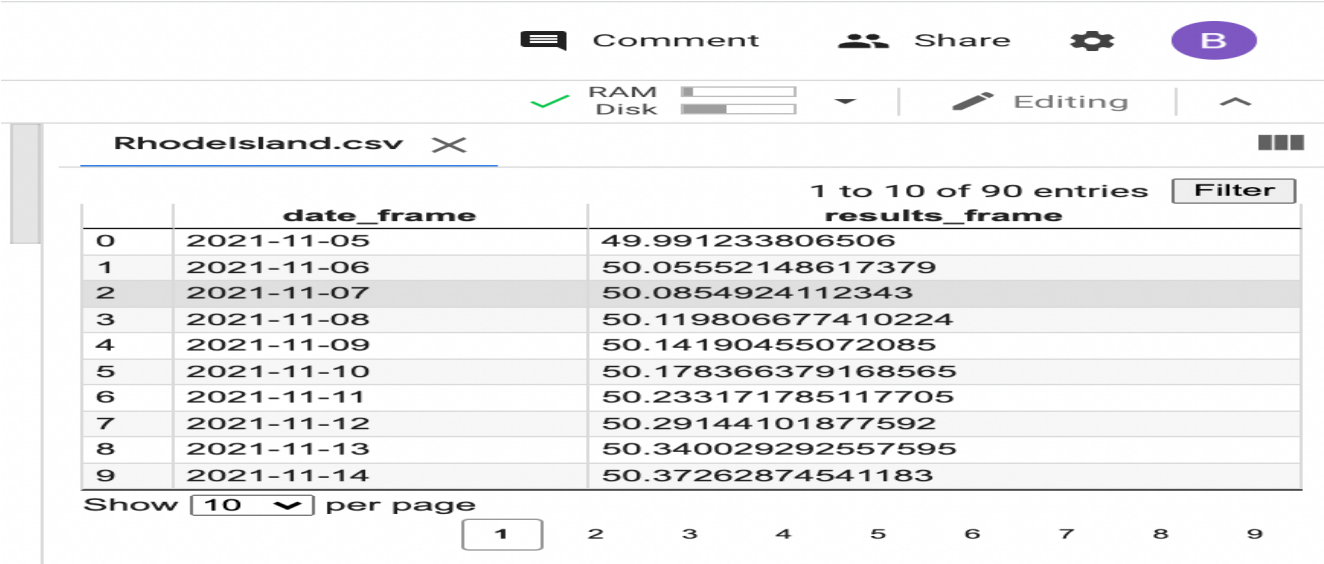
Visualization page

- The user will be provided with various visualizations of the vaccination trends.
- We can get the info of vaccine utilization, vaccines per hundred, highest vaccinated state in a visual form.
- The user can hover on these visualizations for the detailed information



M A C HINE LEA RNIN G

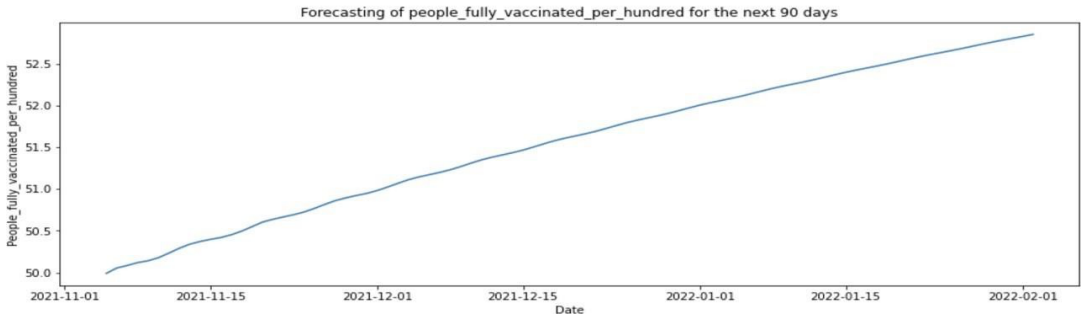
- We have used ARIM A (Auto Regressive Integrated Moving Average) model to generate the forecasting of Fully vaccinated per hundred for the next 90 days for all the states of United States. We are saving the generated forecasted data into CSV file which is then Feed to the Tableau to generate the visualization.



	date_frame	results_frame
0	2021-11-05	49.991233806506
1	2021-11-06	50.05552148617379
2	2021-11-07	50.0854924112343
3	2021-11-08	50.119806677410224
4	2021-11-09	50.14190455072085
5	2021-11-10	50.178366379168565
6	2021-11-11	50.233171785117705
7	2021-11-12	50.29144101877592
8	2021-11-13	50.340029292557595
9	2021-11-14	50.37262874541183

Show 10 per page

1 2 3 4 5 6 7 8 9



Tableau

- The Forecasting data generated from the Machine Learning Model is Loaded and plotted using Line plot

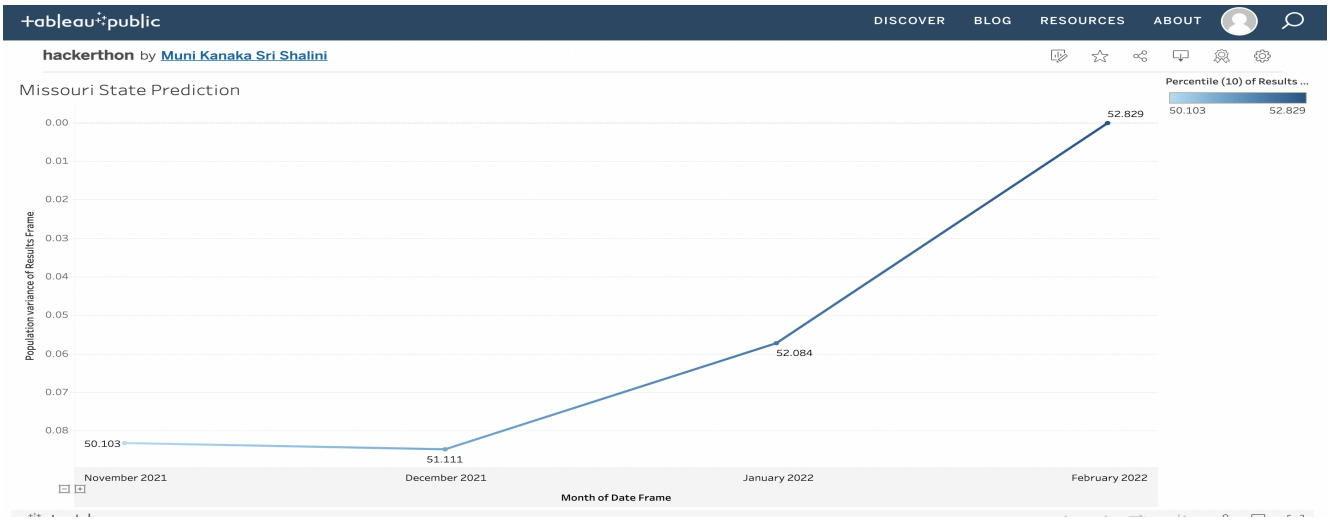


tableau public
DISCOVER
BLOG
RESOURCES
ABOUT
hackerthon by Muni Kanaka Sri Shalini
Missouri State Prediction
Percentile (10) of Results ...
50.103
52.829
Population variance of Results Frame
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
50.103
51.111
52.084
52.829
November 2021
December 2021
January 2022
February 2022
Month of Date Frame

5.Work Distribution

- MUNI KANAKA SRI SHALINI CHINTAM – Visualizations and Machine learning forecasting

- ABHINAYYA DAV – front end
- SAI KUMARGORRE - predictions and data processing
- ANIL NANDIKONDA – front end

6.Issues:

We are having some issues while making predictions.
We have already forecasted the trend with one state and have to do it other states We are getting some errors with the flask connectivity.

7. Git Hub Link to the project

- GitHub: https://github.com/Sai-Kumar-Gorre/Web_Mobile_Final_Project
- Video: https://youtu.be/Ivnu2FWVckk

8.References:

https://www.nytimes.com/interactive/2021/world/covid-vaccinations-tracker.html

https://www.cnn.com/interactive/2021/health/global-covid-vaccinations/

https://www.statista.com/statistics/1194939/rate-covid-vaccination-by-country-worldwide/

https://www.cdc.gov/

https://covid19.who.int/

https:// ww w. worldom eters.info/coronavirus/