BMS COLLEGE OF ENGINEERING

(Autonomous Institute, Affiliated to VTU)
Bull Temple Road, Basavanagudi, Bengaluru - 560019

A project report on

Covid 19 Vaccination Data Visualization Using Tableau

Submitted in partial fulfilment of the requirements for the award of degree

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

By

PRAMILA DALAVAI (1BM18IS068)

ANJALI DEVARAJ (1BM18IS127)

ANUP S JAIN (1BM18IS128)

Under the guidance of

HARINI (ASST PROFESSOR)

Department of Information Science and Engineering
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Bengaluru – 560019

Department of Information Science and Engineering

C E R T I F I C A T E

This is to certify that the project entitled "*COVID 19 Vaccination - DATA VISUALIZATION USING TABLEAU*" is a bona-fide work carried out by **Pramila Dalavai (1BM18IS068), Anjali Devaraj(1BM18IS127),Anup S Jain (1BM18IS128)** in partial fulfilment for the award of degree of Bachelor of Engineering in **Information Science and Engineering** from **Visvesvaraya Technological University, Belgaum** during the year **2021-2022**. It is certified that all corrections/suggestions indicated for Internal Assessments have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

Harini
Assistant Professor

Dakshayini M
Professor and HOD

B V Ravishankar
Principal

Examiners

Name of the Examiner

Signature of the Examinar

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1. Introduction to Covid 19 Vaccination Dataset

- The data stream, aggregated from JHU CSSE COVID-19 Data and The New York Times, continues to be a vital resource for corporate and government decision makers as they navigate the global pandemic.
- COVID-19 case data can be directly downloaded or accessed through a Web Data Connector from data.world, a platform for data that enables users to post, search, and collaborate on data sets on a large and meaningful scale.
- The data comes from the dataset maintained and updated by the Johns Hopkins University Center for Systems Science and Engineering.
- The data from Johns Hopkins is updated at approximately 7 p.m. PST.

2. Need of DVR

- Data informed decision making is critical in a world transformed by the coronavirus pandemic.
- Data visualization on Covid19 dataset will help us to stay up to date with data resources and actionable insights, from dashboards to real world solutions.
- We can blend our own data with tableau workbook to better understand the impact of Covid19 on government and organizations.
- The events of 2020 catalyzed a change in how people think about issues of community, equity, health, and wellness at work. On their path to a new way of life, people need easy access to data for a common understanding of what the future holds for themselves, their companies, and the economy.
- The data visualizations below reflect survey results.

3. Dataset Description - 17 fields , 73870 rows

Stored in vaccinations.csv and vaccinations.json. Country-by-country data on global COVID-19 vaccinations. We only rely on figures that are verifiable based on public official sources.

This dataset includes some subnational locations (England, Northern Ireland, Scotland, Wales, Northern Cyprus…) and international aggregates (World, continents, European Union…). They can be identified by their iso_code that starts with OWID_.

The population estimates we use to calculate per-capita metrics are based on the last revision of the United Nations World Population Prospects. The exact values can be viewed here. In a few cases, we use other sources (see column source in the population file) when the figures provided by the UN differ substantially from reliable and more recent national estimates. Population estimates for a few subnational locations are taken from national reports, and are stored here.

- location: name of the country (or region within a country).
- iso_code: ISO 3166-1 alpha-3 – three-letter country codes.
- date: date of the observation.
- total_vaccinations: total number of doses administered. For vaccines that require multiple doses, each individual dose is counted. If a person receives one dose of the vaccine, this metric goes up by 1. If they receive a second dose, it goes up by 1 again. If they receive a third/booster dose, it goes up by 1 again.
- total_vaccinations_per_hundred: total_vaccinations per 100 people in the total population of the country.
- daily_vaccinations_raw: daily change in the total number of doses administered. It is only calculated for consecutive days. This is a raw measure provided for data checks and transparency, but we strongly recommend that any analysis on daily vaccination rates be conducted using daily_vaccinations instead.
- daily_vaccinations: new doses administered per day (7-day smoothed). For countries that don't report data on a daily basis, we assume that doses changed equally on a daily basis over any periods in which no data was reported. This produces a complete series of daily figures, which is then averaged over a rolling 7-day window. An example of how we perform this calculation can be found here.
- daily_vaccinations_per_million: daily_vaccinations per 1,000,000 people in the total population of the country.
- people_vaccinated: total number of people who received at least one vaccine dose. If a person receives the first dose of a 2-dose vaccine, this metric goes up by 1. If they receive the second dose, the metric stays the same.
- people_vaccinated_per_hundred: people_vaccinated per 100 people in the total population of the country.
- people_fully_vaccinated: total number of people who received all doses prescribed by the vaccination protocol. If a person receives the first dose of a 2-dose vaccine, this metric stays the same. If they receive the second dose, the metric goes up by 1.
- people_fully_vaccinated_per_hundred: people_fully_vaccinated per 100 people in the total population of the country.
- total_boosters: total number of COVID-19 vaccination booster doses administered (doses administered beyond the number prescribed by the vaccination protocol)
- total_boosters_per_hundred: Total number of COVID-19 vaccination booster doses administered per 100 people in the total population.
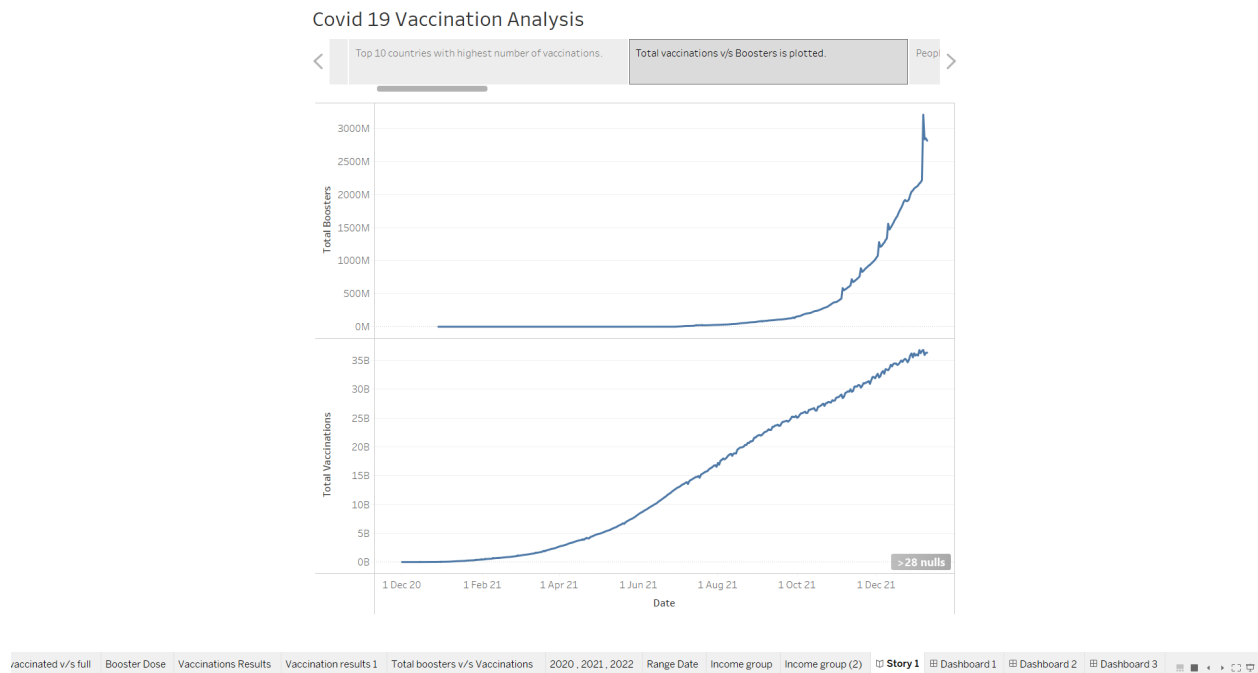
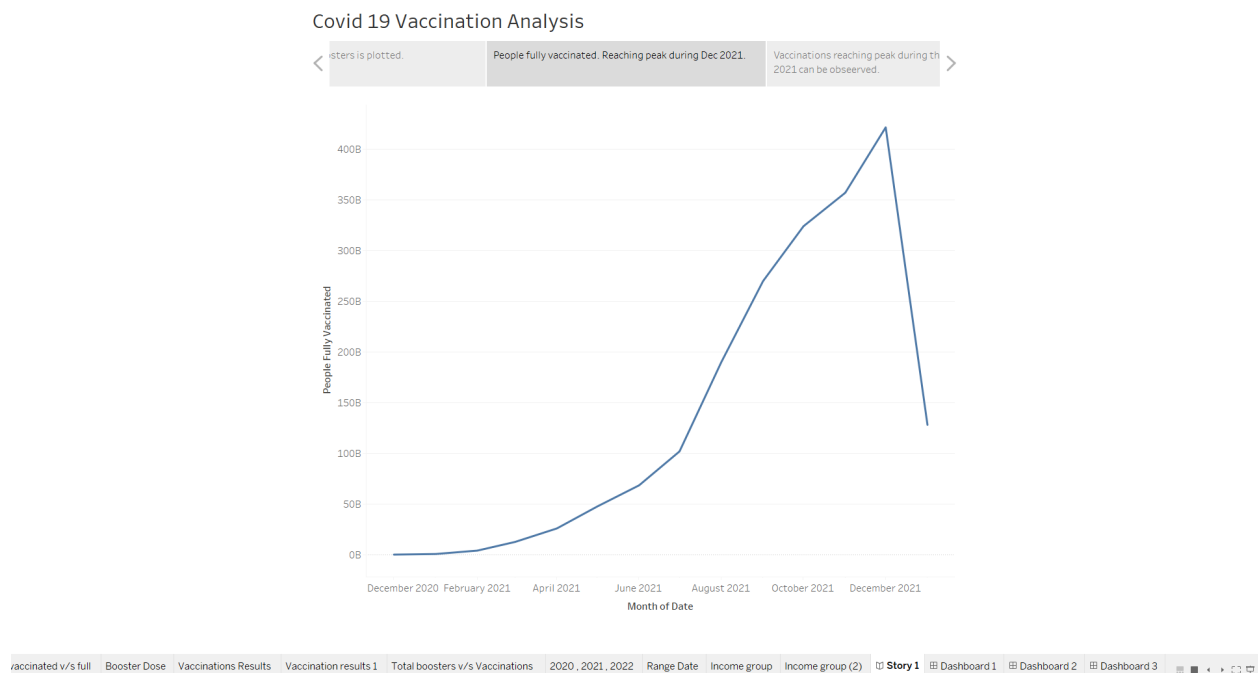# Story 1 - Total Vaccinations v/s Country is plotted.
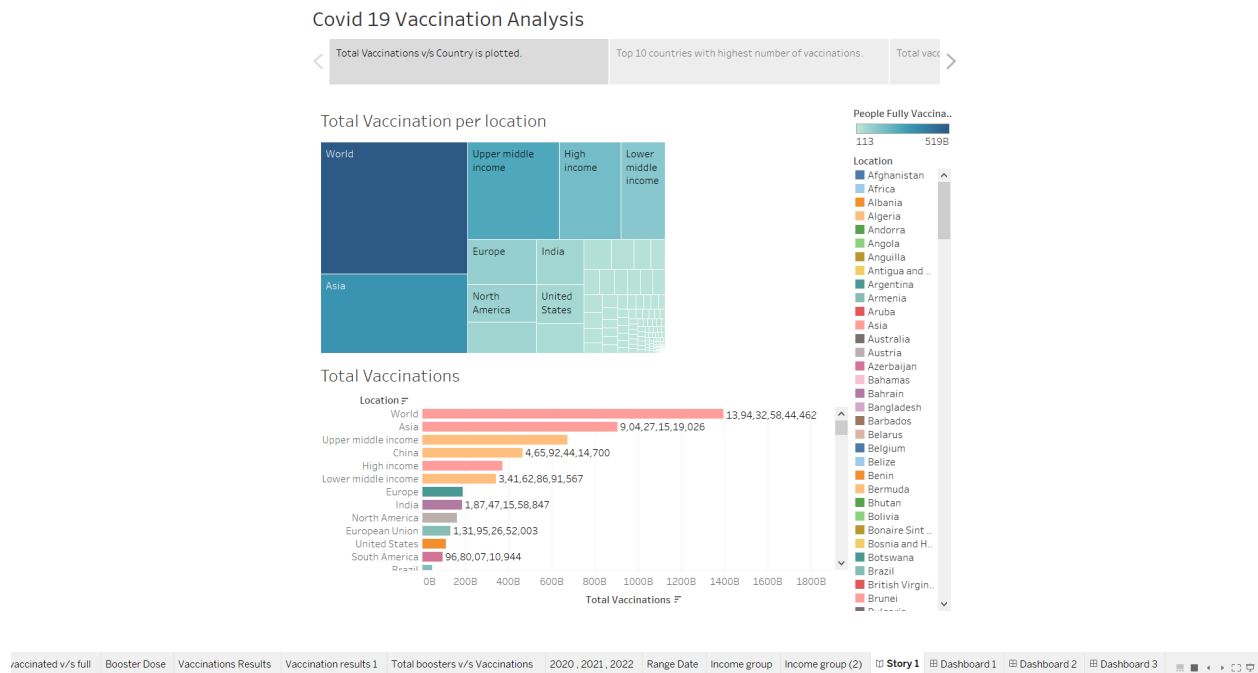
Story 2 - Top 10 countries with highest number of vaccinations.
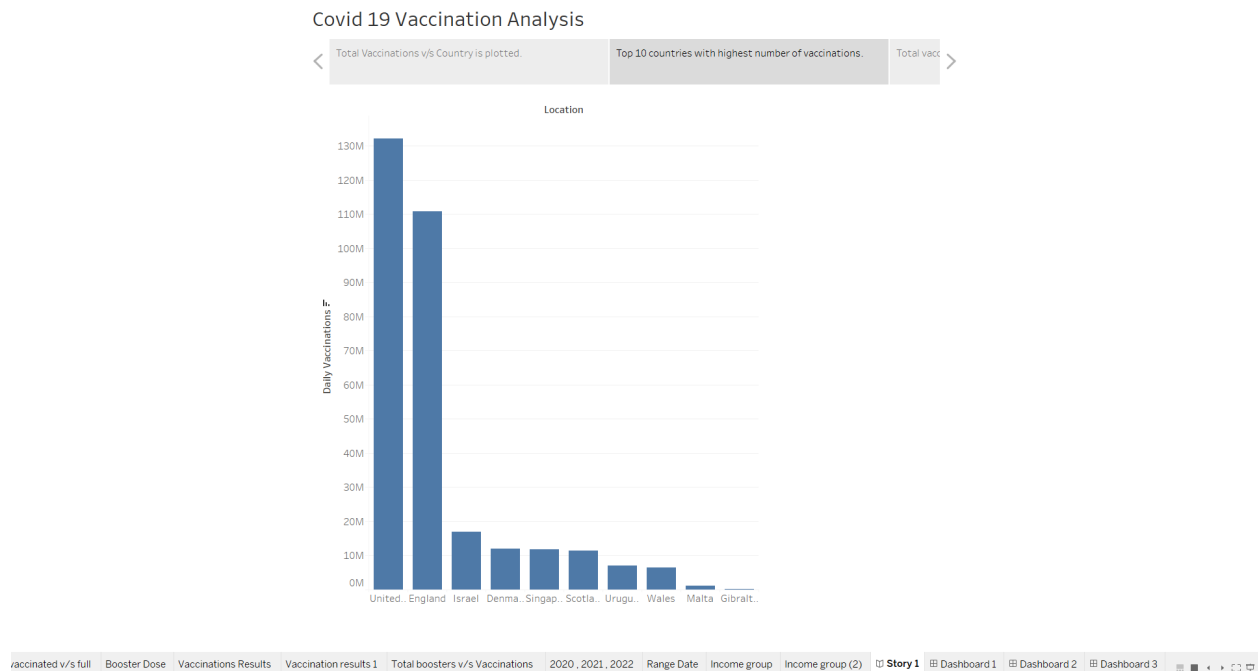
Story 3 - Total vaccinations v/s Boosters is plotted.

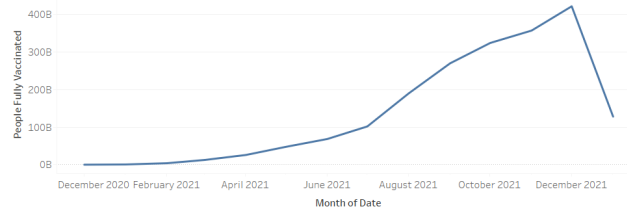# Story 4 - People fully vaccinated. Reaching peak during Dec 2021.

Story 5 - Vaccinations reaching peak during the month od December 2021 can be obseerved.
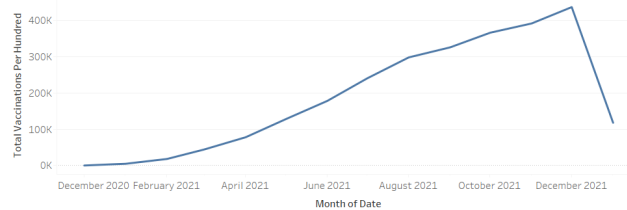
Covid 19 Vaccination Analysis

People fully vaccinated. Reaching peak during Dec 2021.	Vaccinations reaching peak during the month od December 2021 can be obseerved.	Peopl count

People Vaccinated 2020,2021,2022

Y-axis: People Fully Vaccinated (0B, 100B, 200B, 300B, 400B)
X-axis: Month of Date (December 2020, February 2021, April 2021, June 2021, August 2021, October 2021, December 2021)

Total Vaccinations 2020,2021,2022

Y-axis: Total Vaccinations Per Hundred (0K, 100K, 200K, 300K, 400K)
X-axis: Month of Date (December 2020, February 2021, April 2021, June 2021, August 2021, October 2021, December 2021)
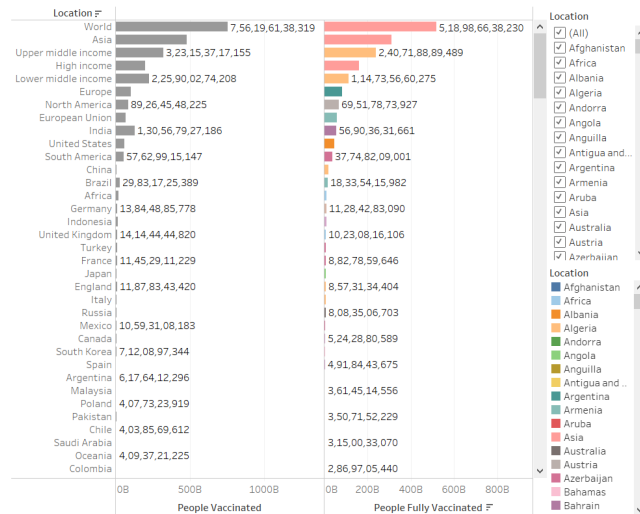
vaccinated v/s full | Booster Dose | Vaccinations Results | Vaccination results 1 | Total boosters v/s Vaccinations | 2020 , 2021 , 2022 | Range Date | Income group | Income group (2) | Story 1 | Dashboard 1 | Dashboard 2 | Dashboard 3

Story 6 - People completing only one dose v/s Both the doses country vise analysis.

Covid 19 Vaccination Analysis

| Vaccinations reaching peak during the month od December 2021 can be obseerved.	People completing only one dose v/s Both the doses country vise analysis.	Boos and m

Location	People Vaccinated	People Fully Vaccinated
World	7,56,19,61,38,319	5,18,98,66,38,230
Asia		
Upper middle income	3,23,15,37,17,155	2,40,71,88,89,489
High income		
Lower middle income	2,25,90,02,74,208	1,14,73,56,60,275
Europe		
North America	89,26,45,48,225	69,51,78,73,927
European Union		
India	1,30,56,79,27,186	56,90,36,31,661
United States		
South America	57,62,99,15,147	37,74,82,09,001
China		
Brazil	29,83,17,25,389	18,33,54,15,982
Africa		
Germany	13,84,48,85,778	11,28,42,83,090
Indonesia		
United Kingdom	14,14,44,44,820	10,23,08,16,106
Turkey		
France	11,45,29,11,229	8,82,78,59,646
Japan		
England	11,87,83,43,420	8,57,31,34,404
Italy		
Russia		8,08,35,06,703
Mexico	10,59,31,08,183	
Canada		5,24,28,80,589
South Korea	7,12,08,97,344	
Spain		4,91,84,43,675
Argentina	6,17,64,12,296	
Malaysia		3,61,45,14,556
Poland	4,07,73,23,919	
Pakistan		3,50,71,52,229
Chile	4,03,85,69,612	
Saudi Arabia		3,15,00,33,070
Oceania	4,09,37,21,225	
Colombia		2,86,97,05,440

X-axis left: People Vaccinated (0B, 500B, 1000B)
X-axis right: People Fully Vaccinated (0B, 200B, 400B, 600B, 800B)

Location filter:
(All), Afghanistan, Africa, Albania, Algeria, Andorra, Angola, Anguilla, Antigua and..., Argentina, Armenia, Aruba, Asia, Australia, Austria, Azerbaijan

Location:
Afghanistan, Africa, Albania, Algeria, Andorra, Angola, Anguilla, Antigua and..., Argentina, Armenia, Aruba, Asia, Australia, Austria, Azerbaijan, Bahamas, Bahrain

vaccinated v/s full | Booster Dose | Vaccinations Results | Vaccination results 1 | Total boosters v/s Vaccinations | 2020 , 2021 , 2022 | Range Date | Income group | Income group (2) | Story 1 | Dashboard 1 | Dashboard 2 | Dashboard 3
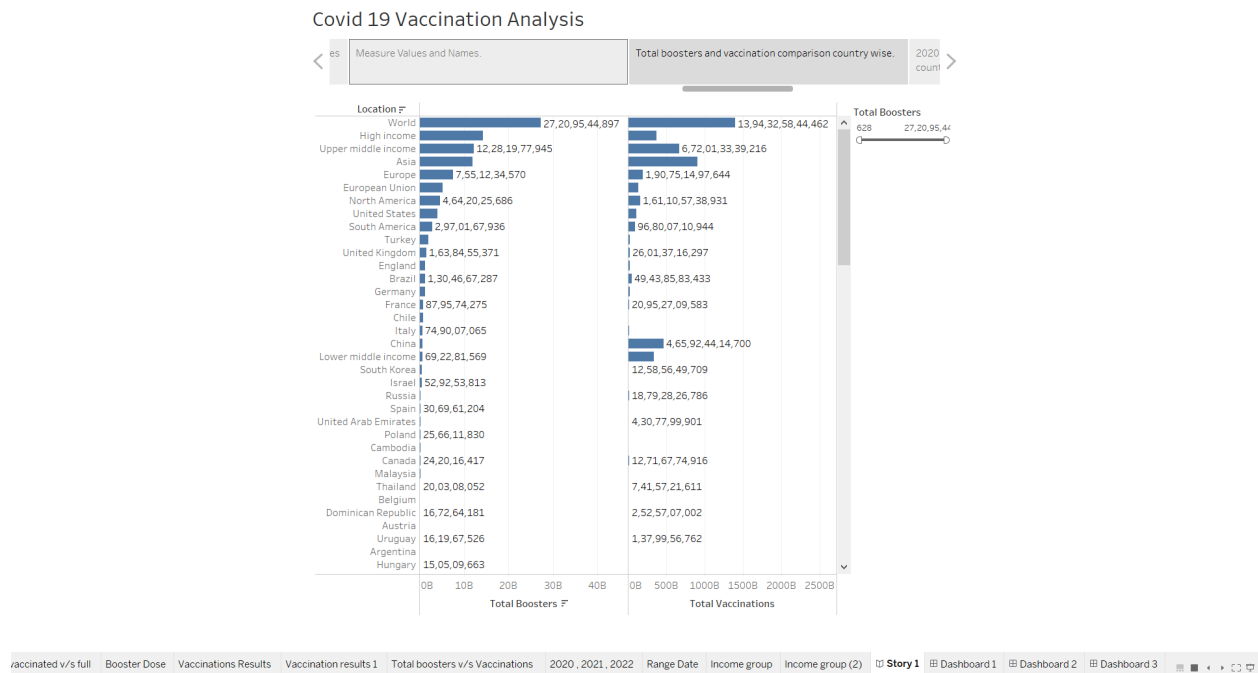
Story 7 - Booster dose vaccination data analysis on set of countires and maximum boster dose reached December except for China where we observe Jan 2022 peak point.
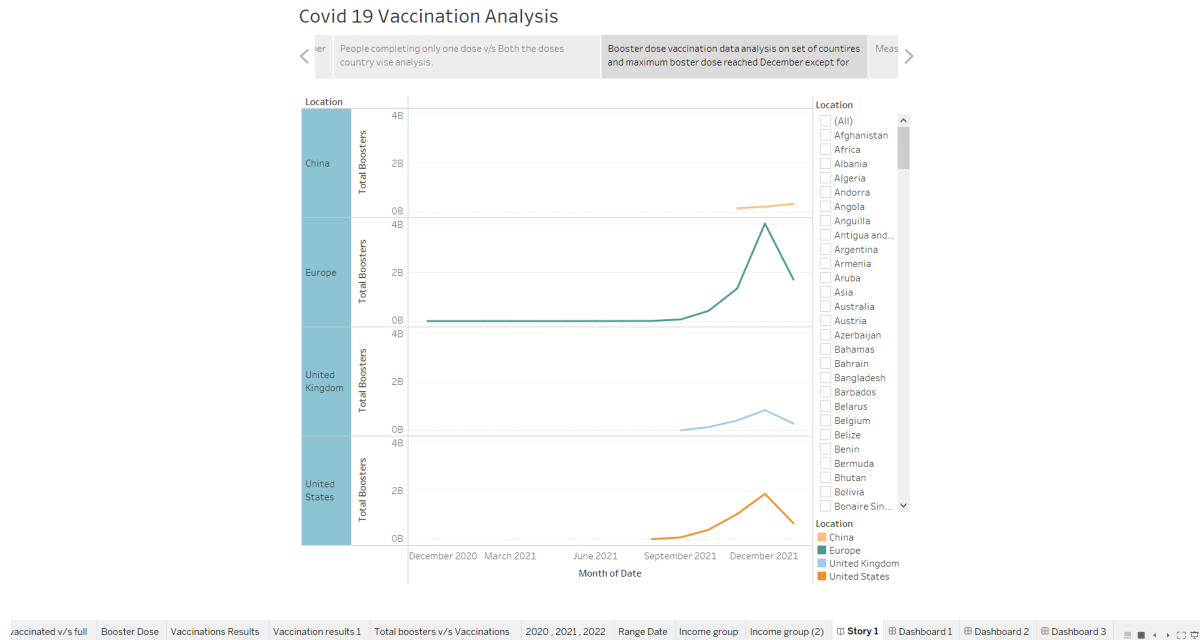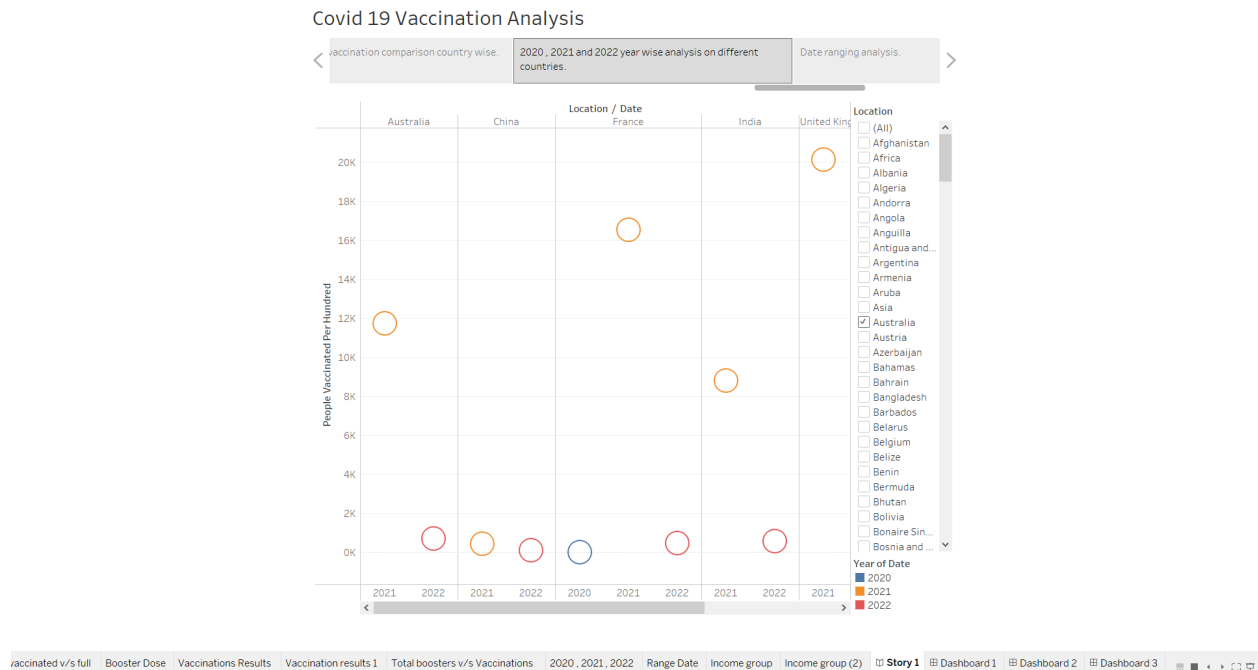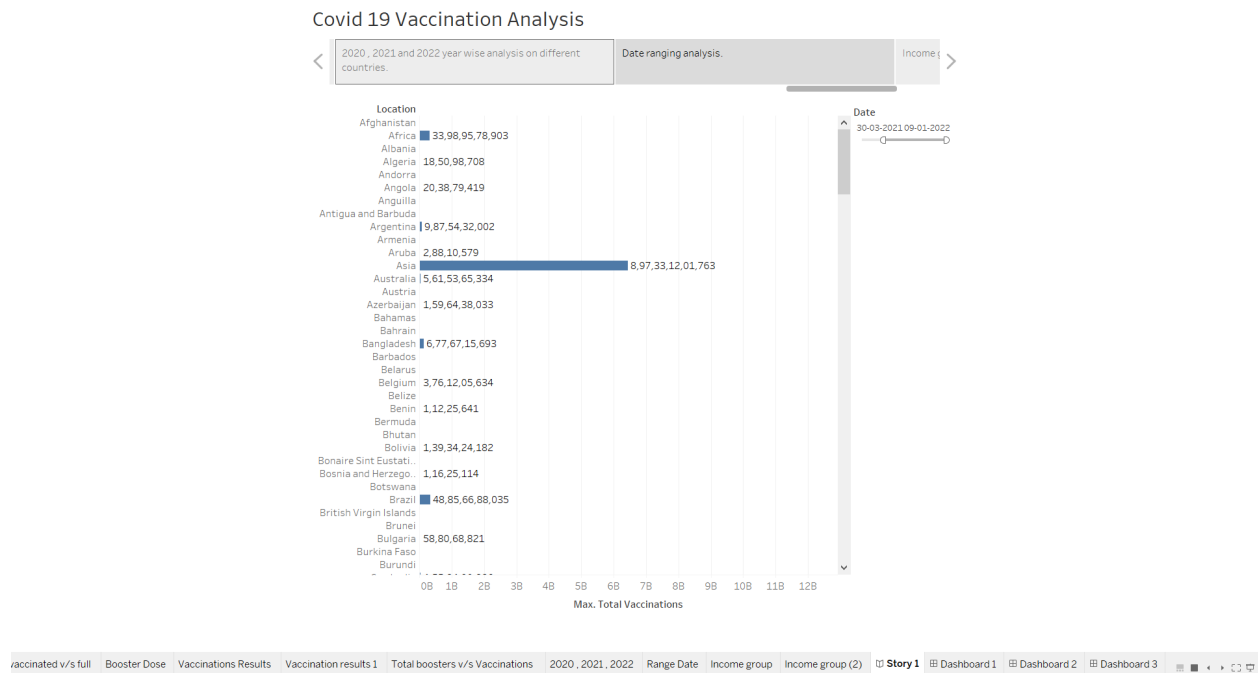

Story 8 - Measure Values and Names.
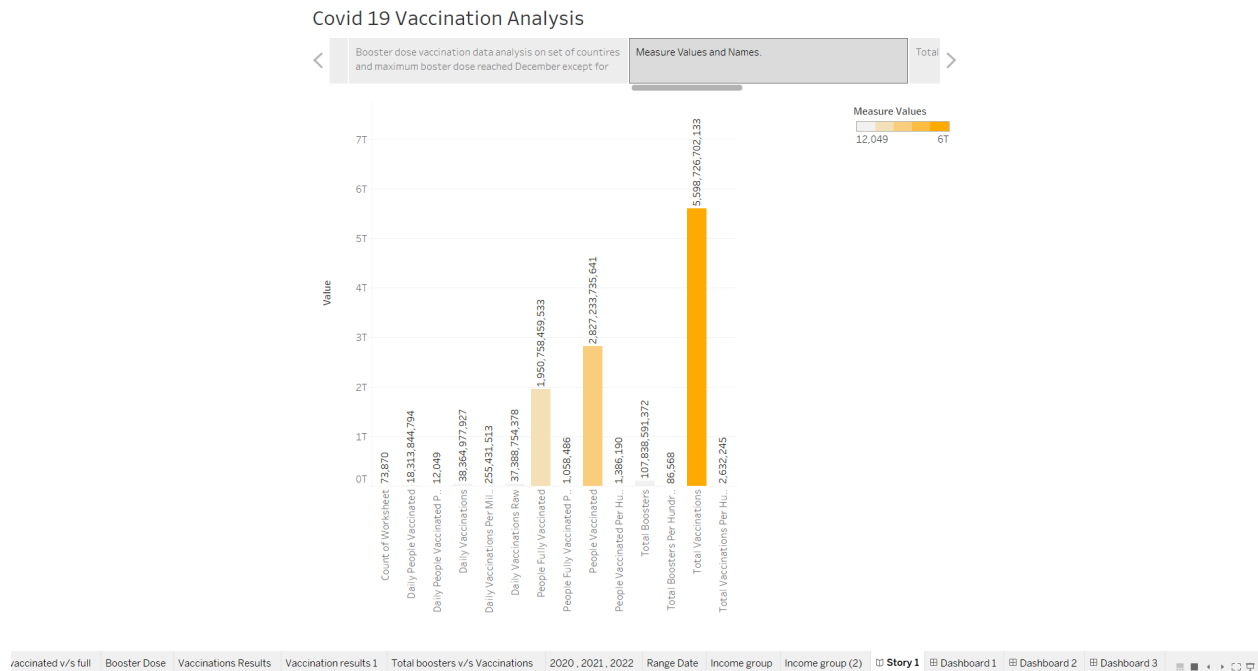
Story 9 - Total boosters and vaccination comparison country wise.

Story 10 - 2020 , 2021 and 2022 year wise analysis on different countries.

Story 11 - Date ranging analysis.

Story 12 - Income group is created.