DATA MANAGEMENT PROJECT REPORT

(November-December 2022)

Covid-19 in India

Submitted

by

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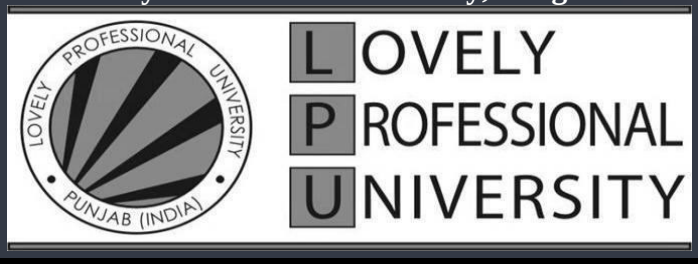

DECLARATION

I, **Vishnudeep Shukla**, student of Computer Science and Engineering under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 15 November 2022

Registration No. **12002534** Name of the student: **Vishnudeep Shukla**

ACKNOWLEDGEMENT

I would like to take this opportunity to show my sincere gratitude towards, Ms**. Maneet Kaur**, our subject teacher for course code INT217 as well as our university: Lovely Professional University whose constant help and guidance allowed me to complete this project in due time. I would also like to thank my classmates whose support was crucial in helping me finish this project.

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INTRODUCTION

The outbreak of novel pathogenic Coronavirus (2019-nCoV) [1-6] was first identified in Wuhan city of Hubei Province of South China on 31st December, 2019. It was recognized as a Pandemic by the World Health Organization on 11th March, 2020. The Coronavirus disease has been officially named as COVID-19. COVID-19
is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). World Health Organization (WHO) had declared the outbreak a Public Health Emergency of International Concern on 30th January, 2020. There are several reports regarding the timeline of the Coronavirus outbreak. According to media reports on unpublished Chinese government data, the first case of COVID-19 emerged on 17th November, 2019 [7-10]. According to a study by Chinese researchers published in the Lancet medical journal, the first patient with the symptoms of COVID-19 was identified on 1st December, 2019 [11-15]. Like Middle East Respiratory Syndrome (MERS-CoV) [16-20] and Severe Acute Respiratory Syndrome (SARS-CoV)
[21-24]. Coronavirus is a large family of viruses that causes illness ranging from the common cold to severe disease. COVID-19 is a disease that mainly affects the respiratory system and most infected people recover without requiring specific treatment. People above the age of 60 years and who have underlying medical conditions
are at higher risk. According to World Health Organization (WHO), the symptoms of COVID-19 include:

- Fever, tiredness, dry cough as the most common symptoms.
- Sore throat, diarrhea, pains and aches, conjunctivitis, loss of taste or smell, headache,
- discoloration of toes or fingers or rashes on skin as less common symptoms.
- Shortness of breath or difficulty breathing, loss of movement or speech, chest pain as some
- serious symptoms.

The Coronavirus disease first emerged in China in December 2019 and spread globally rapidly. When a person with COVID-19 [5-8] exhales or coughs, small droplets spread out in the surrounding environment and land on surfaces and objects around the person. Other people then catch COVID-19 directly by inhaling these small droplets or indirectly by touching contaminated surfaces or objects then touching their nose, mouth or eyes. The survival of Coronavirus depends on various factors such as humidity or temperature of the environment and type of surface. The risk of catching COVID-19 from the faeces of an infected person and someone with no symptoms at all appears to be very low. In India, the first case of coronavirus was reported in Kerala on 30th January, 2020 [25]. As of 5th December, 2020, the recovery rate of COVID-19 in India is 98.48%, a total of 9499710 cases and 140216 deaths have been confirmed by worldometer website in India. The number of infections could be a substantial underestimate due to low testing rates of India [26, 27]. Following are some protective measures against COVID-19, advised by the World Health Organization (WHO) [28].

(1) Maintain social distancing: you should maintain at least 1-meter distance from a person who is sneezing or coughing.

(2) Regular hand washing: one should thoroughly and regularly clean his/her hands with soap and water or alcohol-based hand wash.

(3) Seek medical care early, if you have cough, fever and shortness of breath.

(4) Avoid unnecessary travel

(5) Maintain respiratory hygiene: you should not sneeze in the bare hand, always make sure that you cover your nose and mouth with a tissue or with your bent elbow.

(6) Avoid touching nose, mouth and eyes: if you touch your eyes, mouth and nose with contaminated hands , then the virus can enter your body.

On 28th March 2020, there were 25,778 numbers of government hospitals and 7.13 lakh number of beds in government hospitals and in government hospitals, the availability of beds was 0.55 beds per 1000 population [28]. Therefore, India had taken several measures to stop coronavirus spread. Such measures are as follows:

(1) Lockdown the entire nation for 21 days from 24th March 2020 to 14th April 2020 to break Coronavirus
(2) chain.

(2) India is trying to quickly ramp up its fragile healthcare facilities.

(3) Conversion of railway coaches and medical colleges into isolation wards, *etc*.

In this study, we tried to present an early prediction of the epidemic of COVID- 19 in India based on infection rate and suspected cases and our mathematical model forecasts the minimum and the maximum number of deaths, due to COVID-19 in India, for the different number of infected cases. Our results are supposed to provide important information regarding the upcoming infected number of people, which will help manage COVID-19 crisis.

The contribution of this paper is structured as follows: Section 2 elaborates motivation for research. Section 3 depicts the methodology and section 4 discusses the result of the proposed model and section 5 concludes the research paper by summarizing our work.

OBJECTIVE

The objectives are carefully selected to analyze the dataset to get useful information. The scope of each analysis is limited to the dataset to get accurate results for every objective. Following analysis are done on the dataset:

Objective 1 – Covid-19 Spreading in Asia, Europe Region

The scope of this analysis is to find the Covid-19 Spreading in every state with time. The analysis can be done by using power pivot.

Objective 2 – Total Confirmed Cases Reported in Asia, Europe Region

This analysis helps in finding Number of Confirmed Cases Reported from Countries to Countries from Jan 2020 to Aug 2021 helps in analyzing this objective.

Objective 3 – Total Deaths Reported due to Covid-19 in Asia, Europe Region

The scope of this analysis is to find out total Deaths Reported From Countries to Countries from Jan 2020 to Aug 2021.

Objective 4 – Total Cured From Covid-19 in Asia, Europe Region

This analysis helps to find out Total people Cured from Covid-19 , from Countries to Countries from Jan 2020 to Aug 2021.

Objective 5 – Total Comparison of covid outbreak in Asia, Europe Region

The scope of this analysis is to find the Relation between Confirmed ,deaths and Cured Covid_19 from Countries to Countries from Jan 2020 to Aug 2021.

SOURCE OF DATASET

Kaggle is an Airbnb for Data Scientists –A subsidiary of Google LLC, is an online community of data scientists and machine learning practitioners. Kaggle allows users to find and publish data sets, explore, and build models in a web-based data-science environment, work with other data scientists and machine learning engineers, and enter competitions to solve data science challenges. Kaggle got its start in 2010 by offering machine learning competitions and now also offers a public data platform, a cloud-based workbench for data science, and Artificial Intelligence education. this is where they spend their nights and weekends. It's a crowd-sourced platform to attract, nurture, train, and challenge data scientists from all around the world to solve data science, machine learning and predictive analytics problems. It has over 536,000 active members from 194 countries, and it receives close to 150,000 submissions per month. Started from Melbourne, Australia Kaggle moved to Silicon Valley in 2011, raised some 11 million dollars, then ultimately been acquired by the Google in March of

2017. Kaggle is the number one stop for data science enthusiasts all around the world who compete for prizes and boost their Kaggle rankings. There are only 94 Kaggle Grandmasters in the world to this date.

Kaggle enables data scientists and other developers to engage in running machine learning contests, write and share code, and to host datasets. The types of data science problems posted on Kaggle can be anything from attempting to predict cancer occurrence by examining patient records to analyzing sentiment to evoke by movie reviews and how this affects audience reaction. Different sources post projects on this trailblazing platform. While some are just for educational purposes and fun brain exercises, others are genuine issues that companies are trying to solve. Kaggle makes the environment competitive by awarding prizes and rankings for winners and participants. The prizes are not only monetary but can also include attractive rewards such as jobs
or free products from the company hosting the competition.

Why is Kaggle Worth Your Time?

1. Interesting and challenging projects where contributors can learn and practice Kaggle competitions involve solving challenging and interesting problems. Companies post projects to numerous contributors. It especially a great place for beginners who are just trying to break into the data science field. Aside from the competitions that are open to the general public, Kaggle also has private competitions which are only open to top rated

participants (Kaggle Masters).

2. Insightful discussions with Industry leaders and learned experts apart from the projects, forums are very interesting, stimulating, and informative. Through these discussions, you can either seek advice from others or offer advice to people who are dealing with issues you understand
3. Kaggle offers its audience a chance to get into the biggest data science community in the world. This platform is trusted by some of the largest data science companies of the world such as Walmart, Facebook, and Winton Capital. On Kaggle, data scientists get exposure and a chance to work on problems faced by big companies in real-time. While it is not a guarantee, there is always the chance that the company will be impressed enough to recruit.

How Kaggle Works

The host of the competition is in-charge of preparing the data and preparing a detailed description of the problem at hand. To make it more convenient for hosts, Kaggle offers an additional consulting service that can help prepare data and describe the problem in the best possible format.

Do Kaggle Projects have any Real impact

One of its biggest and most recognized projects is one by Heritage Health which offered a remarkable cash price of $3 million. Competitions hosted on Kaggle have had far-reaching impacts such as enhancing and enabling state of the art HIV/AIDS research and improving traffic forecasting. Essentially, Kaggle has given companies the opportunity to seek solutions from the best data scientist in the world and to have external pairs of eyes to look at the problems they are trying to solve.

ETL

ETL stands for Extract, Transform and Load and it is the process of extracting data from a data source, transforming it using specialized software and then loading the transformed data into a data warehouse.

The data of Indian General Election from 1977 to 2014, extracted from Kaggle, which is an open-source database website. The data is then transformed (cleaned) using Excel tools and Tableau then saved to the device. The dataset has 11 columns related to the election like, name of candidates and total vote polled etc. Following are the operations performed in Tableau to transform the data:

- First, fetch the dataset of Covid-19 India – 2020 to2021 from Kaggle.
- Analyze the dataset carefully to look for any ambiguity.
- Load the dataset into Microsoft Excel and perform the cleaning operation.
- Take the output of the cleaned dataset.

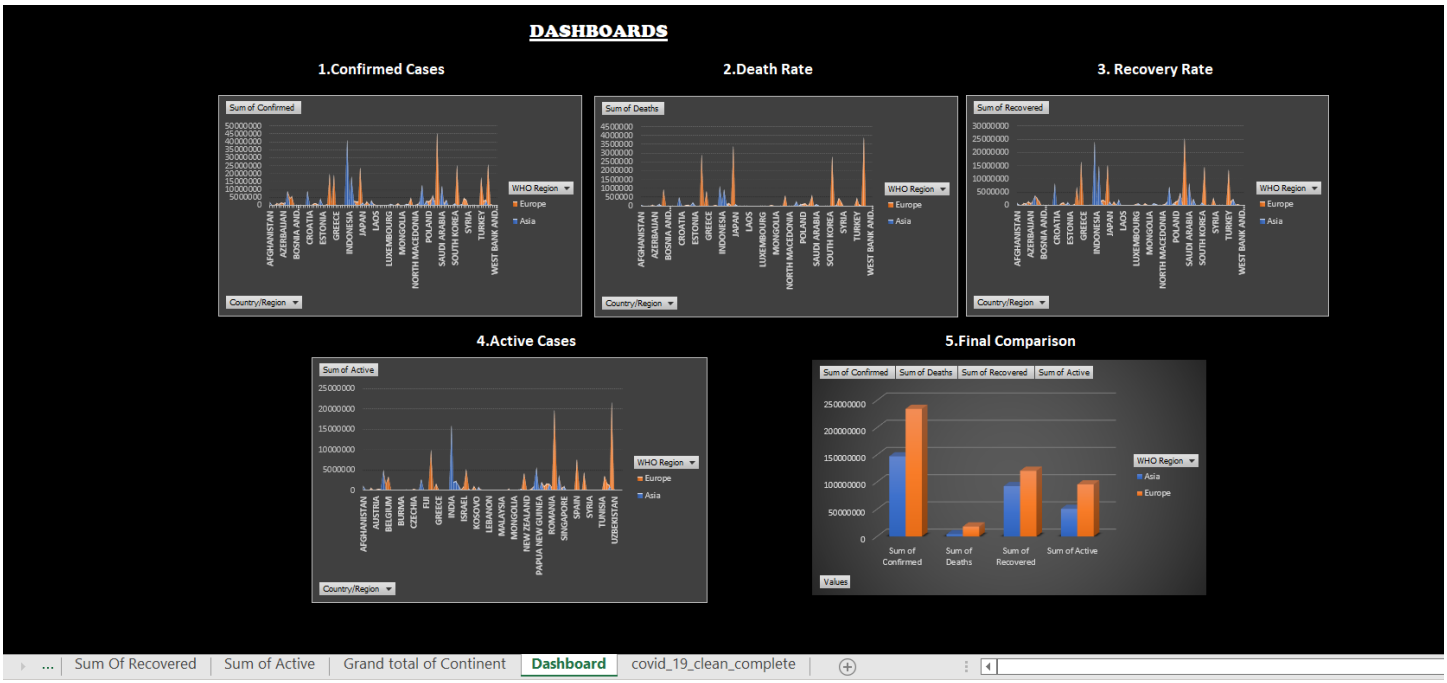
Why Do We Need ETL?

It is essential to properly format and prepare data to load it in the data storage system of your choice. The triple combination of ETL provides crucial functions that are many times combined into a single application or suite of tools that help in the following areas:

- Offers deep historical context for business.
- Enhances Business Intelligence solutions for decision making.
- Enables context and data aggregations so that business can generate higher revenue and/or save money.
- Enables a common data repository.
- Allows verification of data transformation, aggregation, and calculations rules.

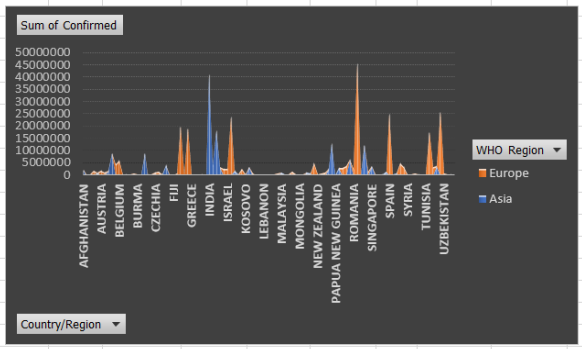
Screenshot

1. Dashboard



2. Covid-19 Confirmed Cases In Asia and Europe region.

Sum of Confirmed	Column Labels		
Row Labels	Asia	Europe	Grand Total
Afghanistan	1928946		1928946
Albania		189130	189130
Andorra		84031	84031
Armenia		1571001	1571001
Australia	842145		842145
Austria		1772274	1772274
Azerbaijan		1121884	1121884
Bahrain	1734735		1734735
Bangladesh	8749677		8749677
Belarus		4406374	4406374
Belgium		5870443	5870443
Bhutan	4856		4856
Bosnia and Herzegovina		382883	382883
Brunei	14592		14592
Bulgaria		399042	399042
Burma	24779		24779
Cambodia	14189		14189
China	8784567		8784567
Croatia		274198	274198
Cyprus		97893	97893
Czechia		1049814	1049814
Denmark		1200486	1200486
Djibouti	334198		334198
Egypt	4114422		4114422
Estonia		193193	193193
Fiji	2037		2037
Finland		666911	666911
France		19587322	19587322



Conclusions

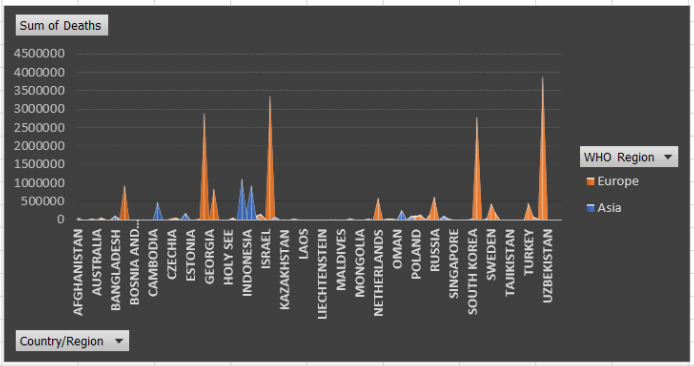
1.The Confirmed Cases in Europe are highest in Russia I.e., 45283291 cases and lowest in Holy See i.e., 1194 cases.

2.The confirmed Cases in Asia are highest in India i.e., 40789429 cases and lowest in Papua New Guinea i.e., 1152 cases.

3. Covid-19 Death rate in Asia and Europe region.

Sum of Deaths	Column Labels		
Row Labels	Asia	Europe	Grand Total
Afghanistan	48890		48890
Albania		5325	5325
Andorra		5072	5072
Armenia		26942	26942
Australia	10580		10580
Austria		67113	67113
Azerbaijan		14129	14129
Bahrain	5004		5004
Bangladesh	115303		115303
Belarus		28182	28182
Belgium		928367	928367
Bhutan	0		0
Bosnia and Herzegovina		15911	15911
Brunei	208		208
Bulgaria		17270	17270
Burma	611		611
Cambodia	0		0
China	479930		479930
Croatia		10094	10094
Cyprus		1779	1779
Czechia		31925	31925
Denmark		57145	57145
Djibouti	3002		3002
Egypt	185091		185091
Estonia		6536	6536
Fiji	0		0
Finland		29741	29741
France		2880597	2880597

2.Covid-19 Death rate in Asia and Europe region.



Conclusions

1.The Highest Death rate in Europe is in Italy i.e., 3348653 cases and lowest is in Greenland and Holy Seed i.e., 0 cases

2. The Highest Death rate in Asia is in India i.e., 1108912 cases and lowest is in Combodia,Bhutan

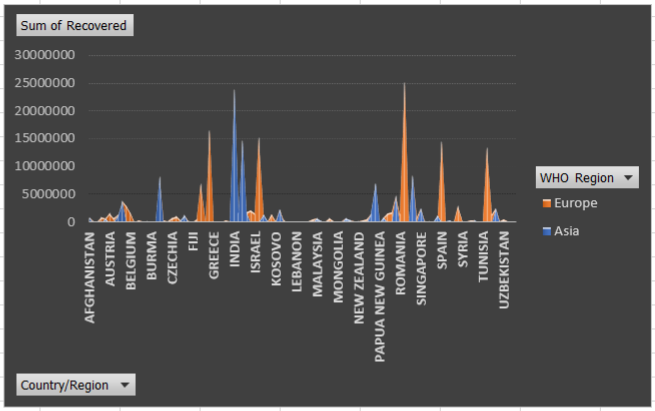
Confirmed Cases | Sum of Deaths | Sum Of Recovered | Sum of Active | Grand total of Continent | covid_19_clean_c ...

Ready Accessibility: Investigate

4. Covid-19 Recovery rate in Asia and Europe region.

Sum of Recovered	Column Labels		
Row Labels	Asia	Europe	Grand Total
Afghanistan	797899		797899
Albania		116559	116559
Andorra		68248	68248
Armenia		855674	855674
Australia	692264		692264
Austria		1572893	1572893
Azerbaijan		701542	701542
Bahrain	1325002		1325002
Bangladesh	3714108		3714108
Belarus		2770048	2770048
Belgium		1554347	1554347
Bhutan	2813		2813
Bosnia and Herzegovina		205760	205760
Brunei	13908		13908
Bulgaria		181876	181876
Burma	15466		15466
Cambodia	12941		12941
China	8084229		8084229
Croatia		210071	210071
Cyprus		64483	64483
Czechia		647390	647390
Denmark		1032242	1032242
Djibouti	254848		254848
Egypt	1191025		1191025
Estonia		136059	136059
Fiji	1568		1568
Finland		540380	540380
France		6841497	6841497

3.Covid-19 Recovery rate in Asia and Europe region.



Conclusions

1.The Highest Recovery Rate in Europe is in Russia i.e., 251111671 cases and lowest is in Sweden i.e., 0 cases

2. The Highest Recovery Rate in Asia is in India i.e., 23774586 cases and lowest is in Timor Leste with 0 cases being reported

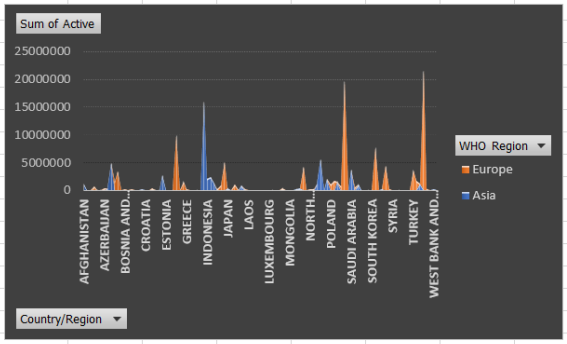
Confirmed Cases | Sum of Deaths | Sum Of Recovered | Sum of Active | Grand total of Continent | covid_19_clean_c ...

Ready Accessibility: Investigate

5. Covid-19 Active Cases in Asia and Europe region.

Sum of Active	Column Labels		
Row Labels	Asia	Europe	Grand Total
Afghanistan	1082157		1082157
Albania		67246	67246
Andorra		10711	10711
Armenia		688385	688385
Australia	139301		139301
Austria		132268	132268
Azerbaijan		406213	406213
Bahrain	404729		404729
Bangladesh	4920266		4920266
Belarus		1608144	1608144
Belgium		3387729	3387729
Bhutan	2043		2043
Bosnia and Herzegovina		161212	161212
Brunei	476		476
Bulgaria		199896	199896
Burma	8702		8702
Cambodia	1248		1248
China	220408		220408
Croatia		54033	54033
Cyprus		31631	31631
Czechia		370499	370499
Denmark		111099	111099
Djibouti	76348		76348
Egypt	2738306		2738306
Estonia		50598	50598
Fiji	469		469
Finland		96790	96790
France		9865228	9865228

4.Covid-19 Active Cases in Asia and Europe region.



Conclusions

1.The Highest Active cases rate in Europe is in Russia i.e., 19553817 cases and lowest is in Greenland i.e., 20 cases

2. The Highest Active cases rate in Asia is in India i.e., 15905931 cases and lowest is in Papu New Guinea with 455 cases being reported

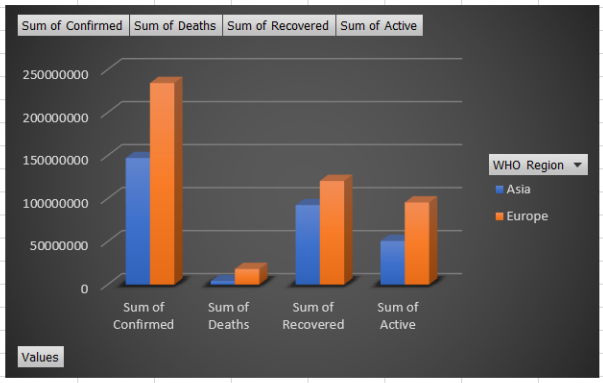
Confirmed Cases | Sum of Deaths | Sum Of Recovered | **Sum of Active** | Grand total of Continent | covid_19_clean_c ...

Ready | Accessibility: Investigate

6.Relation between all the cases in Asia and Europe region.

	Column Labels		
Values	Asia	Europe	Grand Total
Sum of Confirmed	147185749	234410181	381595930
Sum of Deaths	4001469	18221723	22223192
Sum of Recovered	92459043	120602928	213061971
Sum of Active	50725237	95585530	146310767

5. Relation between all the cases in Asia and Europe region.



Conclusions

1.Overall Europe were Heavily hit more than Asia where Russia Italy and Spain played the biggest role in damaging and increasing the cases in all over the world

Confirmed Cases | Sum of Deaths | Sum Of Recovered | Sum of Active | **Grand total of Continent** | covid_19_clean_c ...

Ready | Accessibility: Investigate

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----------THANK YOU ----------