Covid 19 Title

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Erick Nevarez

Computer Science

University of Texas at El Paso

El Paso TX USA

[enevarez1@miners.utep.edu](mailto:enevarez1@miners.utep.edu)

Isaias Leos

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Ricardo Godoy

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Yair Cabrera Menendez

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.ed](mailto:enteremail@miners.utep.edu)u

Francisco Arriaga Pazos

Information and Data Sciences

University of Texas at El Paso El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Jaime Salas

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Ryan Clark

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Imani Martin

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Janeth Meraz

Computer Science

University of Texas at El Paso

El Paso TX USA

[jymeraz@miners.utep.edu](mailto:enteremail@miners.utep.edu)

Sebastian Quinones

Computer Science

University of Texas at El Paso

El Paso TX USA

[enteremail@miners.utep.ed](mailto:enteremail@miners.utep.edu)

**ABSTRACT**

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**MOTIVATION**

COVID-19 is an infectious virus that has infected over 9.65M US citizens and over 50,000 El Paso residents. The goal of this project is to discover how domestic and international flights have contributed to the spread of COVID-19 in El Paso. We will retrieve, manipulate, and analyze COVID-19 cases and flight data from the months of March and July in El Paso in order to see if a relationship exists.

**KEYWORDS**

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**DATASETS AND DATASET DESCRIPTIONS**

The datasets we are using are a COVID data set and a flights data set. The COVID data set is in the form of a time series containing the number of daily confirmed cases of COVID in El Paso since the beginning of the pandemic. The flights data set is a list containing every commercial flight in the US since the beginning of the pandemic, broken down by month. Data for each flight includes the city of origin, city of destination, dates of departure and arrival, and whether or not the flight was cancelled.

**DATA CLEANING**

Thus far our team has been performing preliminary analysis on the datasets that were gathered earlier last month. For the COVID dataset, due to concerns regarding the data analysis that will be performed later on during the month: the cleaning team decided to create a short python script that would break up the data into a variety of different data structures. The data was initially stripped of columns that served no use during this analysis (codes, states and various other inconsequential variables) as well as rows from locations that were not relevant (essentially everything that wasn’t based in El Paso). This data was then transposed to allow for better readability and day, to day comparisons and stripped of unnecessary months (leaving only the months of March and July in the structure). Lastly: the set was then stored within a Python List, Dictionary and a Pandas Dataframe. Lastly: to ensure that the analysis team would be able to utilize this data in their own programs: these finalized lists were outputted into “.csv” files for their respective months.

For the Flight Dataset 1, the Date attribute was formatted to match the format followed by Flight Dataset 2. Flights were filtered based on incoming or outcoming ELP flights. No further modifications were done to this dataset.

For Flight Dataset 2, we decided to keep the information related to the airline as well as the place capacity and the number of passengers that boarded each flight, point of origin and destination for each flight, the date and two more attributes we believe may be related to flight cancelations. All other information was deleted. ELP Flights were filtered based on incoming/outgoing flights.

As a result, for both flight datasets we have gathered incoming/outgoing ELP flights for the months of March and July 2020.

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**CONCLUSION**

There will be a semester-long group project for the graduate and undergraduate students.

Students are encouraged to form groups of three to four members --- including both graduate and undergraduate students. The instructor will provide a list of potential projects that teams can choose from. A team can create their own project too, with approval from the instructor. The project must have information retrieval and visualization components. The target of the project is to deliver a publishable report along with the description of the methodology and full experimental results.

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