Video link-https://drive.google.com/open?id=1nKV_H722EFuhwjgmq4yHpqL7QNuRjyfd

Github link- https://github.com/djain454/Safe-traveller

The Safer India Challenge
2017 - 2018
By INDIAN ROAD SAFETY CAMPAIGN

INDIAN ROAD SAFETY CAMPAIGN & DIAGEO road to safety PRESENTS

iSAFE

IN ASSOCIATION WITH

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS & & NYKS नेहरू युवा केन्द्र संगठन

50 Lakh's

9 Months D

Team Name- Bits Nâ€™ Bytes
Birla Institute Of Technology and science ,Pilani

Team Members:
Aaryan Kapoor
Deepak Jain
Akshat Baranwal
Rigvita Sharma

REPORT

Name of the event:- HACKATHON

ABSTRACT-

- iSAFE 2017 - 18, the safer India challenge is an annual championship that is being conducted under the Indian Road Safety Campaign in association with Ministry of Road Transport and Highways, Delhi Traffic Police, National Service Scheme and Diageo India pvt ltd with the motive of reducing the accidents to Half by 2020.

Scope Of Our Website

- ✓Choosing safest possible route according to history.
- ✓Reduce accidents due to Over Speeding.

Details-

Every day many people dies in road accidents due to over speeding or by choosing route which is not safe for journey.

Possible Solution

- An app or website can be made which allow user to get the most safe route based on the number of previous accidents on the route .
- It also must tell the maximum speed in an particular area and warns the user he/she crosses that limit.

Safe Traveller

- Uses state of the art machine learning models to find the number of accidents on routes(as a background process) and then tell user the most safest route for their journey.
- Tell user about the optimum speed to be followed for every single path of his selected route
- Allow user to see his/her past journey and other details such as time taken and average speed.

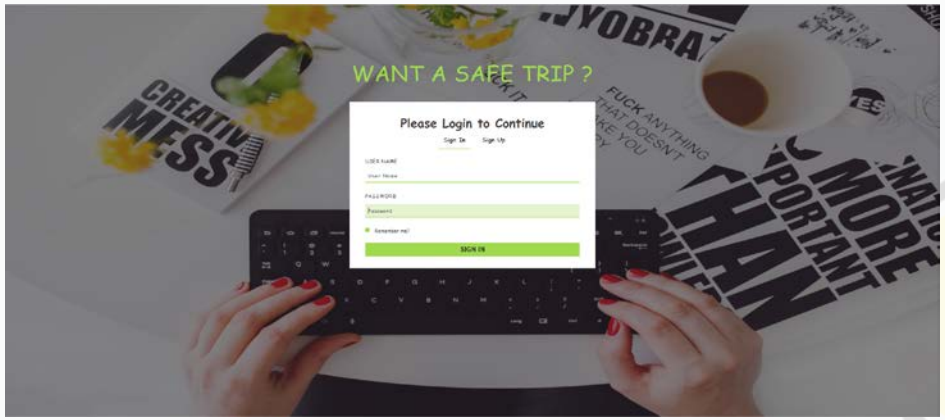
Tech Stack Used

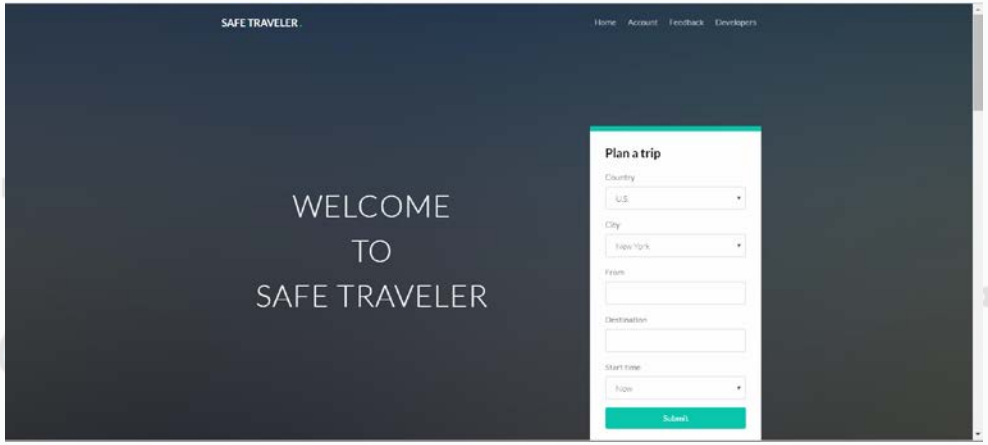
- Python
- Machine Learning Frameworks like Numpy, Pandas, Plotly
- HTML,CSS and Javascript
- Google APIs
- Django

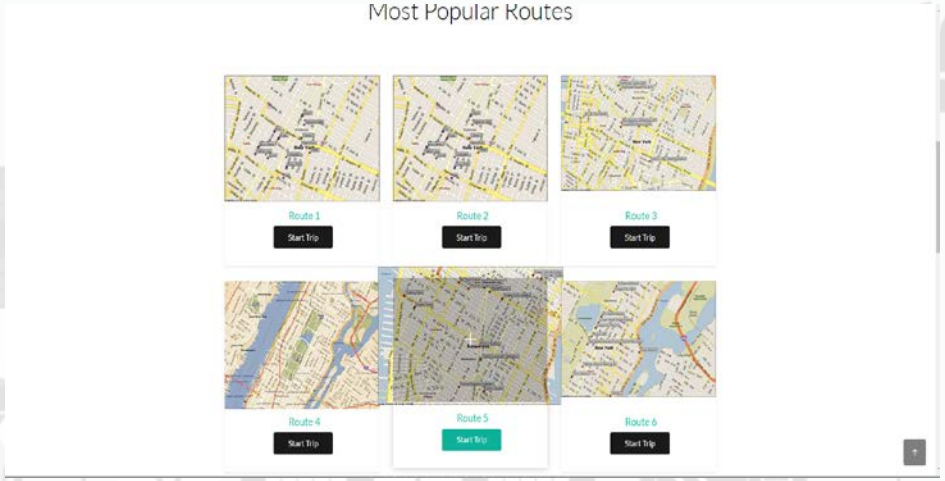
Working

- First user has to create a account and then login to our website.
- Then he has to select the country , city, location, destination and time on main page.
- After clicking submit button , all possible routes to the destination will be shown and most safest will be highlighted green.
- After selecting route the map of the selected route will open and will give user the direction and optimum speed to follow to the user.
- After completion of journey the data such as average speed and time will store in recent trips tabs which can be view later

User Interface







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Run Markdown

Traffic Fatalities in 2015

...by Latitude/Longitude
...by Date
...by State/per Capita
...by State/per Capita (Sober and Drunk Drivers)

Data Import

In [5]:
```
import numpy as np
import pandas as pd
pd.options.mode.chained_assignment = None

import plotly.plotly as py
import plotly.graph_objs as go
from plotly import tools
from plotly.offline import iplot, init_notebook_mode
init_notebook_mode()

traffic_data = pd.read_csv('accident.csv',usecols=[0, 1, 11, 12, 13, 25, 26, 50, 51])
traffic_data = traffic_data.rename(columns={'ST_CASE':'case_id', 'LONGITUD':'longitude','DRUNK_DR':'drunk_drivers', 'FATALS':'fat
traffic_data.columns = traffic_data.columns.str.lower()
traffic_data['date'] = pd.to_datetime(traffic_data[['day', 'month', 'year']])
traffic_data = traffic_data[['case_id', 'date', 'state', 'latitude', 'longitude',
                             'drunk_drivers', 'fatalities']].sort_values('date')
```

Processing math: 100%

12:03
05-04-2018

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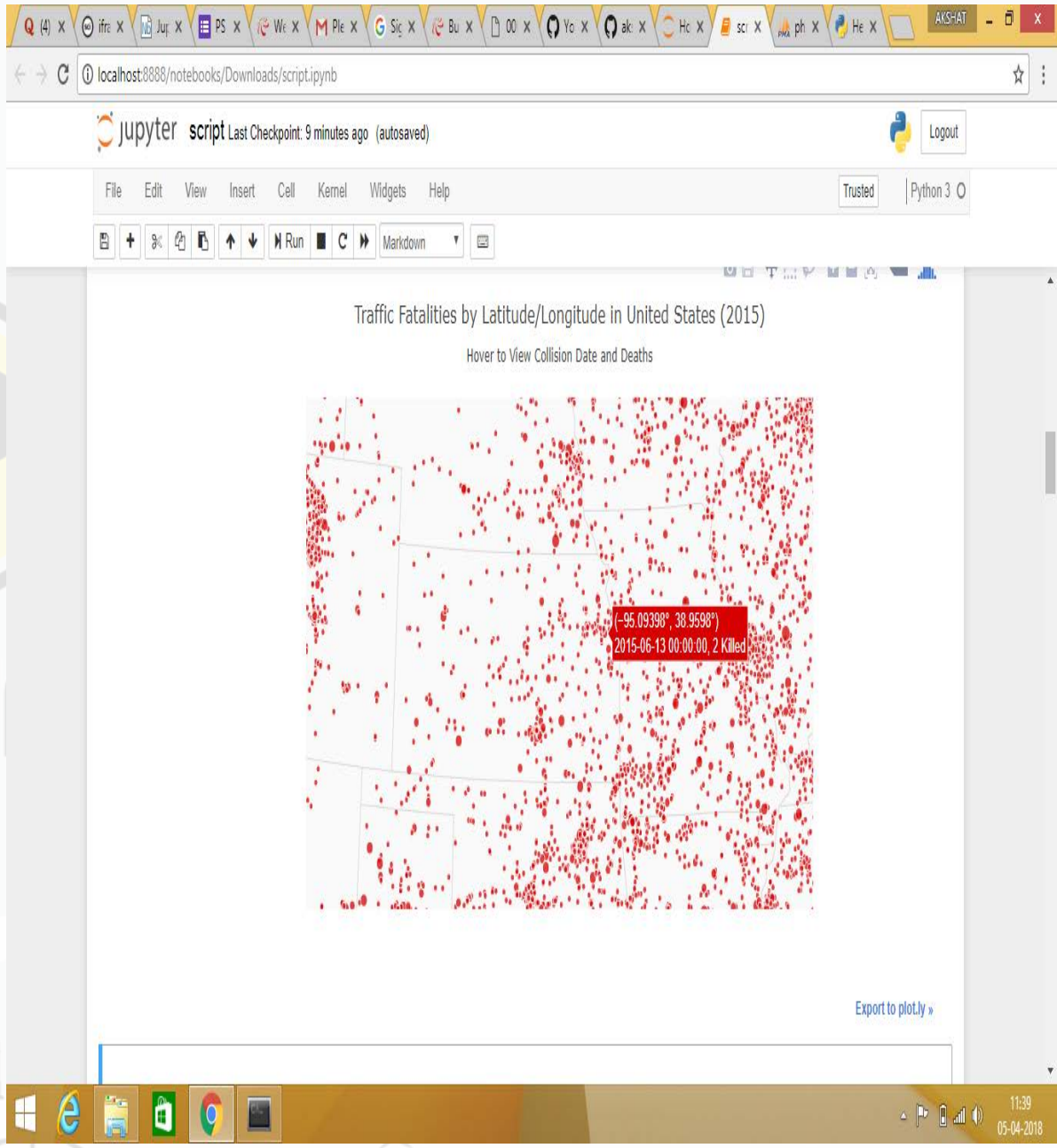
Traffic Fatalities by Latitude/Longitude in United States (2015)

Hover to View Collision Date and Deaths

Export to plot.ly »

Processing math: 100%

11:54
05-04-2018



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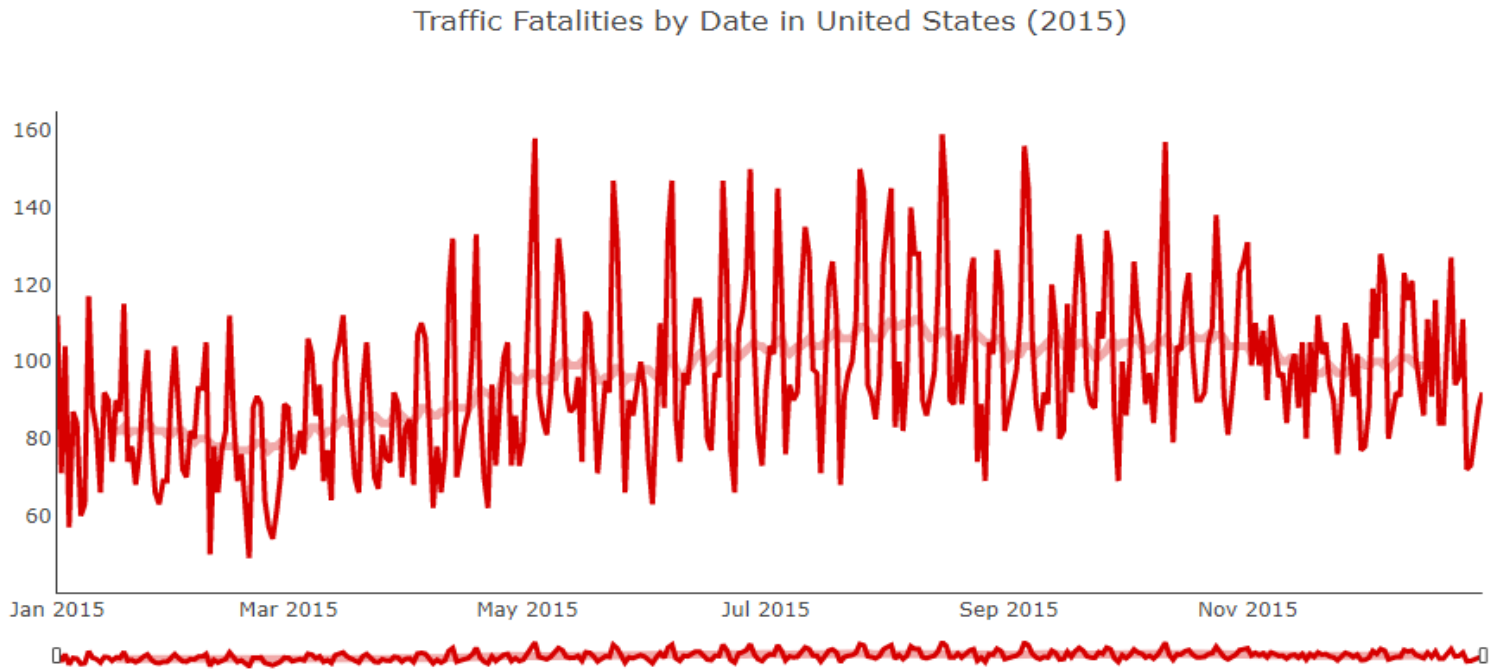

Export to plot.ly »

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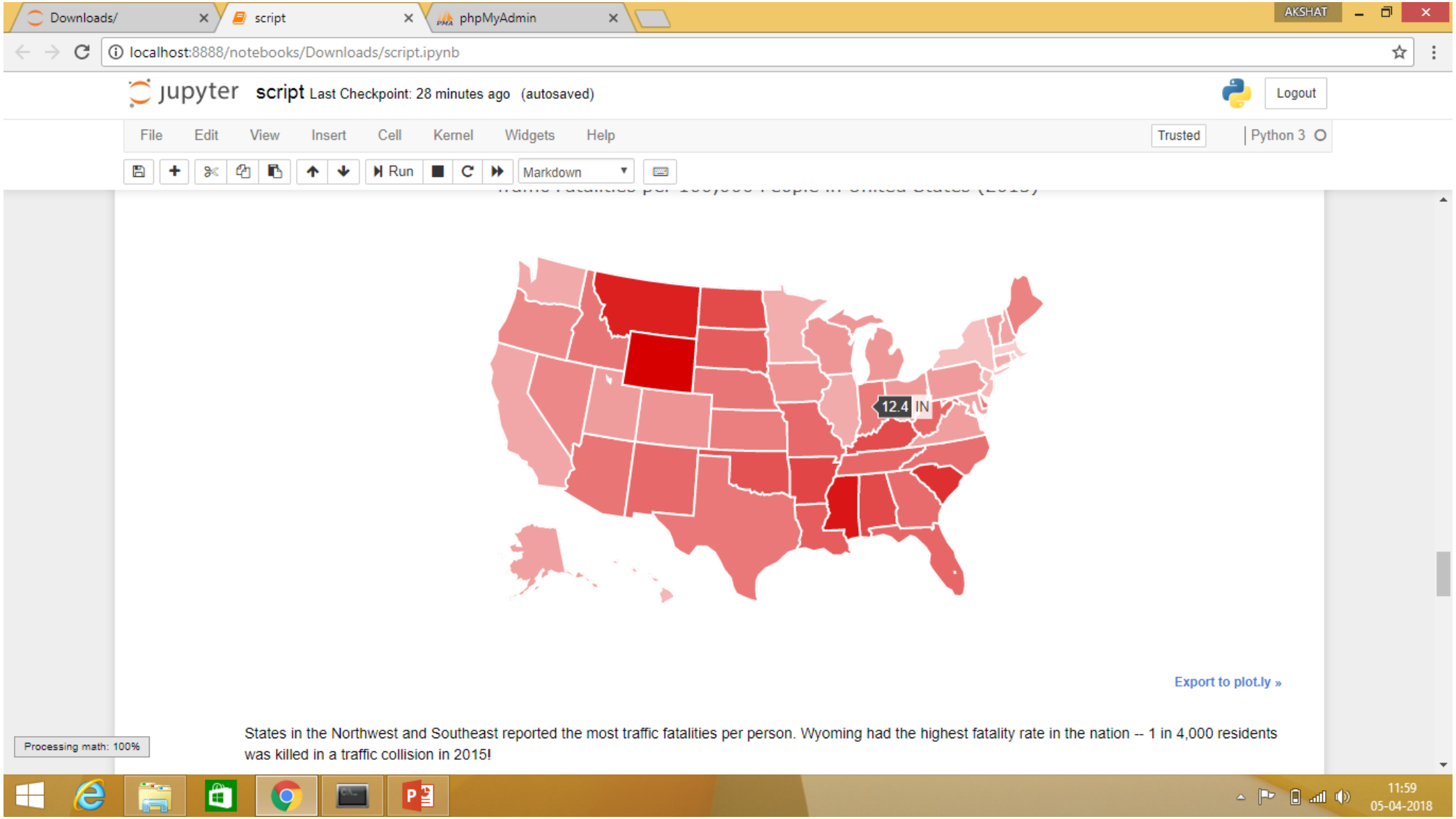
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Export to plot.ly »
Processing math: 100%
States in the Northwest and Southeast reported the most traffic fatalities per person. Wyoming had the highest fatality rate in the nation -- 1 in 4,000 residents was killed in a traffic collision in 2015!
11:59
05-04-2018

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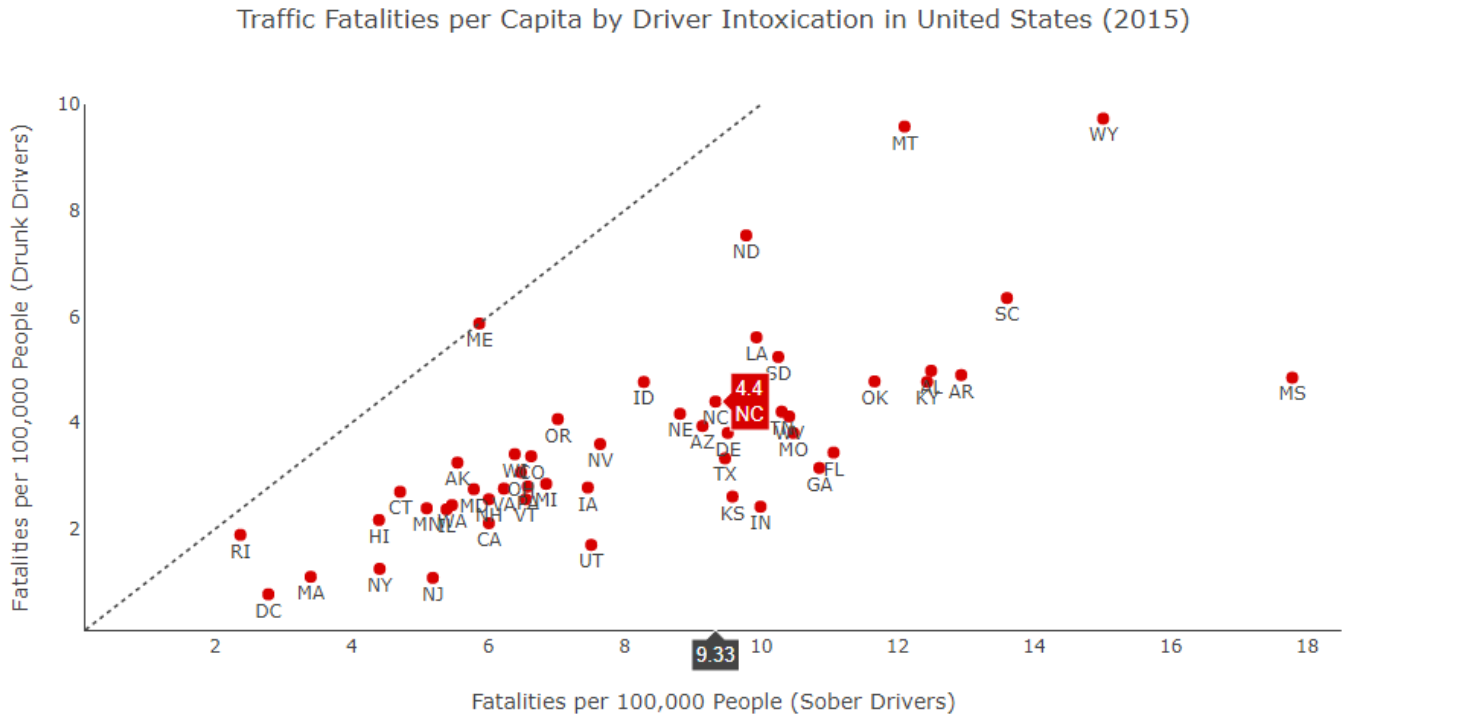

Export to plot.ly »

Processing math: 100%

Most states reported twice as many traffic fatalities from collisions with no driver intoxication as from those involving one or more drunk drivers. Wyoming had

12:01
05-04-2018

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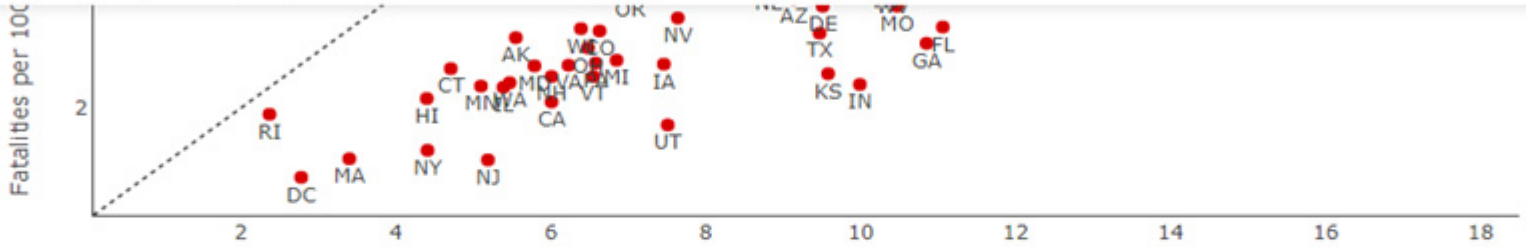
Run Code



Fatalities per 100,000 People (Sober Drivers)

Export to plot.ly »

Most states reported twice as many traffic fatalities from collisions with no driver intoxication as from those involving one or more drunk drivers. Wyoming had the highest fatality rate in alcohol-related collisions, followed by Montana and North Dakota.

```
From Database Records Fatalities in your area is high due to Driver Intoxication. Therefore we recommend you to drive within th
e speed limit of : 30 km/h
```

In [ ]:

Processing math: 100%

12:24
05-04-2018

Future Roadmap

- Increase the number of country and area covered
- Link this with the police database
- Improving the machine model
- To develop mobile app of this website

Thank You