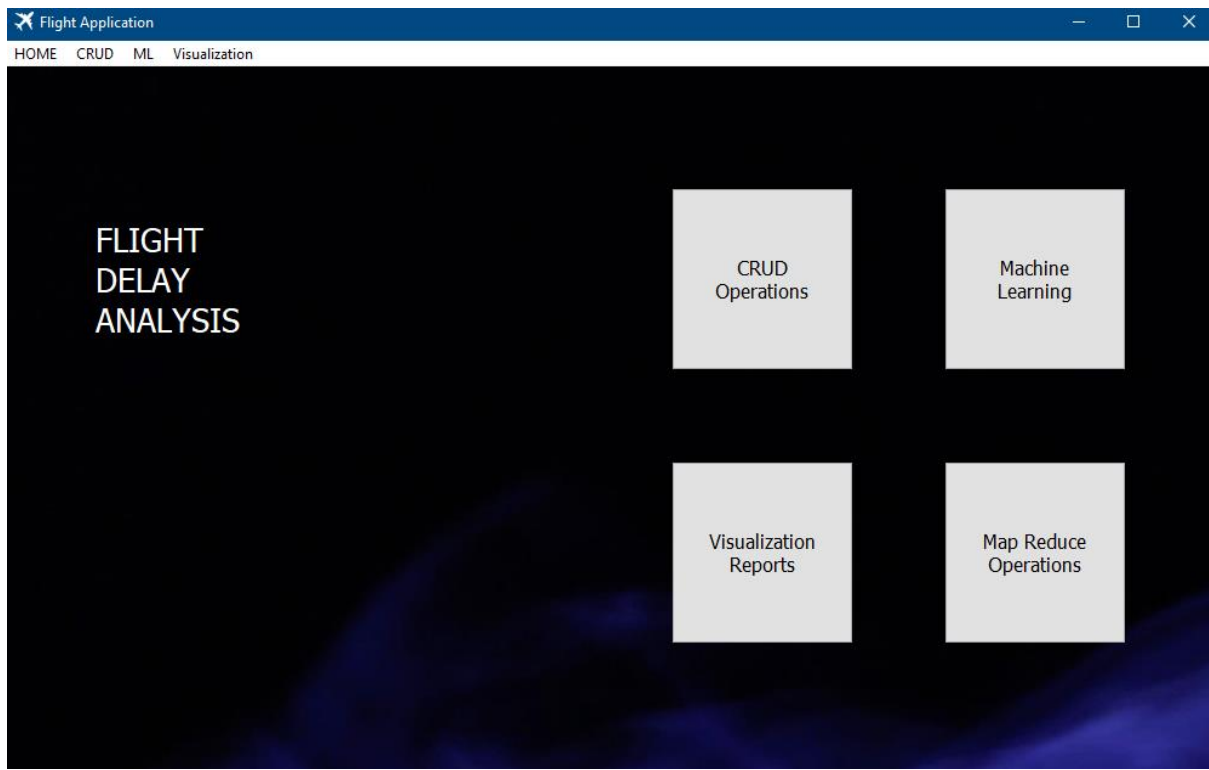
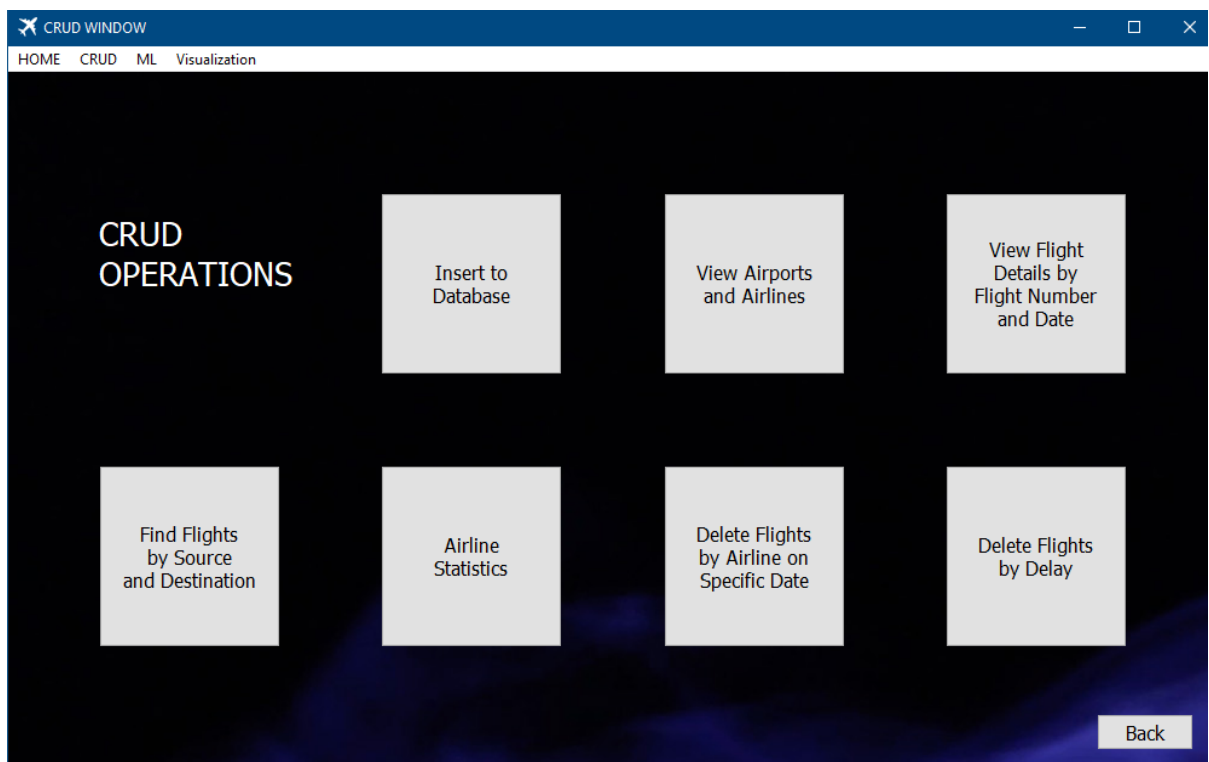


# GUI FRAMEWORK

## HOME SCREEN OF APPLICATION



## CRUD OPERATIONS



## INSERT

✈ Insert Window

HOME CRUD ML Visualization

### Insert into Database

Airline	United Air Lines Inc.	Fl Number		Tail Number	
Source	Hartsfield-Jackson Atlanta International Airport, Atlanta	Distance	0		
Destination	Hartsfield-Jackson Atlanta International Airport, Atlanta	Diverted	<input type="radio"/>	Cancelled	<input type="radio"/>
Scheduled Departure	01-01-2015 00:00	Scheduled Arrival	01-01-2015 00:00		
Departure	01-01-2015 00:00	Arrival	01-01-2015 00:00		
Wheels Off	01-01-2015 00:00	Wheels On	01-01-2015 00:00		

Insert to Database

Back

## READ/SEARCH

✈ Read

HOME CRUD ML Visualization

### View Flight Details by Flight Number and Date

Fl Number	1041
Date	02-01-2015

View

Source :  
Destination :  
Sch Departure :  
Sch Arrival :

Dallas/Fort Worth International Airport, Dallas-Fort Worth  
Charlotte Douglas International Airport, Charlotte  
1105  
1420

Source :  
Destination :  
Sch Departure :  
Sch Arrival :

Charlotte Douglas International Airport, Charlotte  
Dallas/Fort Worth International Airport, Dallas-Fort Worth  
1510  
1705

Back

Read
HOME
CRUD
ML
Visualization

## Find Flights by Source and Destination

Source  
Hartsfield-Jackson Atlanta International Airport, Atlanta

Destination  
Detroit Metropolitan Airport, Detroit

Day  
Tuesday

View

Flight No.	Airline	Sch Dept.	Sch Arr.
2158	DL	725	925
748	DL	910	1110
2352	WN	1030	1235
1640	DL	1050	1256
1260	DL	1205	1407
2221	DL	1355	1553

AIRLINE CODES

WN	Southwest Airlines Co.
DL	Delta Air Lines Inc.

Total Number of Flights : 6

Back

## AGGREGATION FRAMEWORK

Read
HOME
CRUD
ML
Visualization

## Airline Statistics

Airline  
JetBlue Airways

Search

23.0 minutes late on average  
Minimum Delay: -41  
Maximum Delay: 419  
Cancelled : 2 in a week  
Diverted : 2 in a week

Back

# MACHINE LEARNING ALGORITHMS IMPLEMENTATION

ML ALGORITHMS

HOME CRUD ML Visualization

## Predict Delay

Airline

United Air Lines Inc.

Fl Number

1347

Source

Denver International Airport, Denver

Destination

Hartsfield-Jackson Atlanta International Airport, Atlanta

Scheduled Departure

03-01-2015 02:00

Scheduled Arrival

03-01-2015 06:07

Distance

1041

View Prediction

GaussianNB

Prediction : ['D']

Accuracy : 0.980322

Decision Tree

Prediction : ['D']

Accuracy : 0.785246

Random Forest

Prediction : ['D']

Accuracy : 0.930561

KNeighborsClassifier

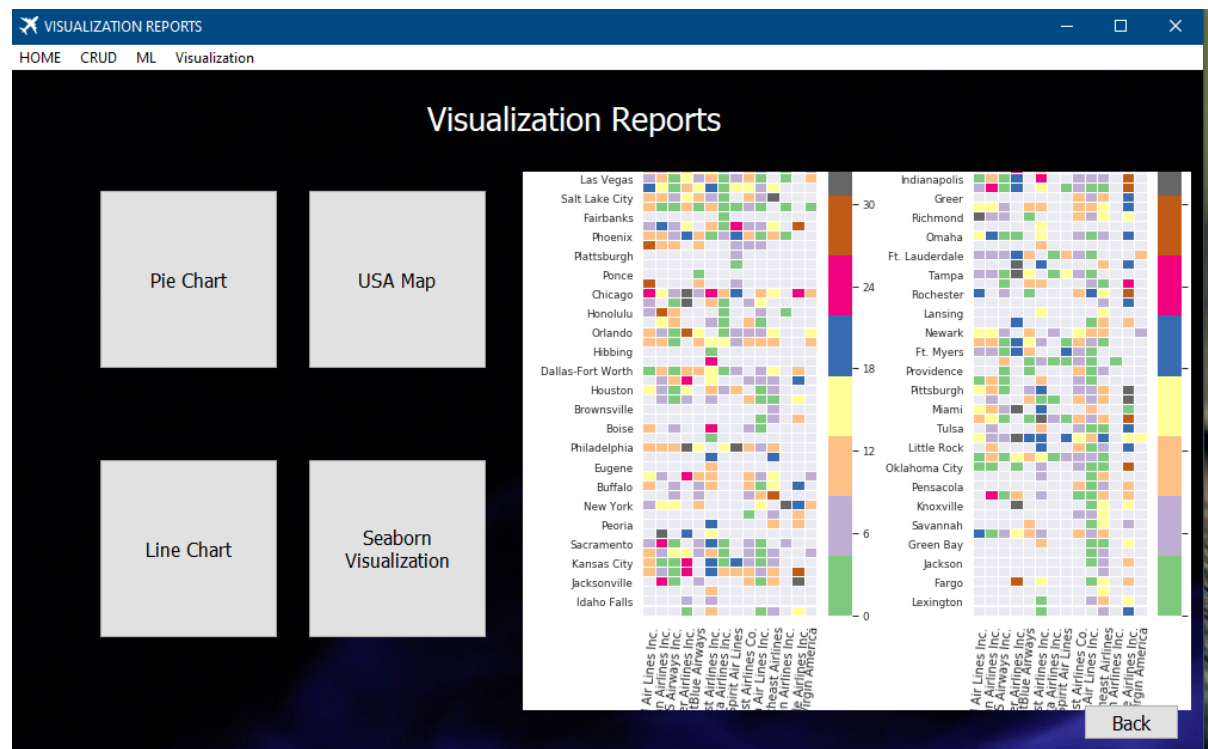
Prediction : ['D']

Accuracy : 0.980322

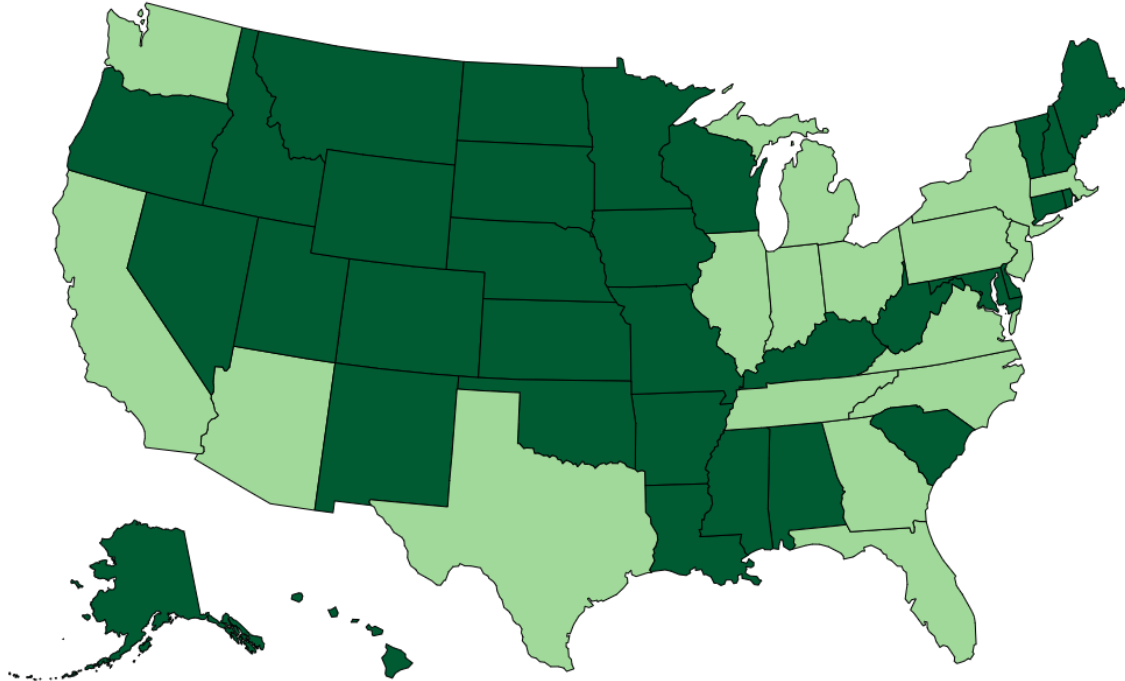
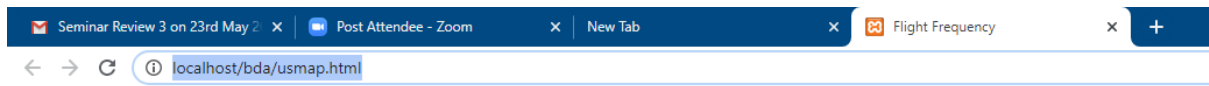
Back

## VISUALIZATION REPORTS

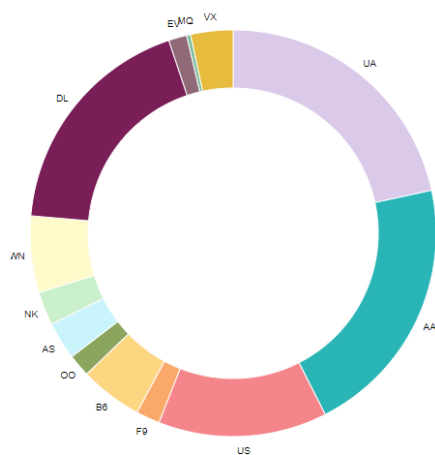
### 1. USING MATPLOTLIB



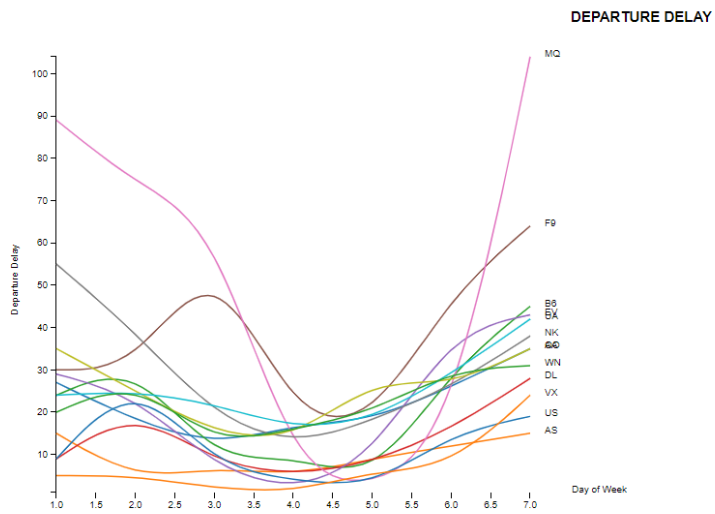
## 2. USING D3.JS



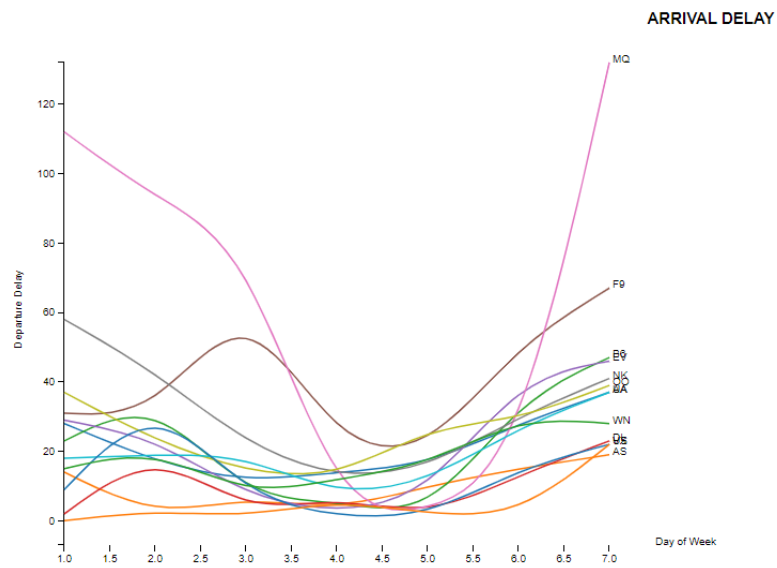
Distance Coverage



IATA_CODE	AIRLINE
UA	United Air Lines Inc.
AA	American Airlines Inc.
US	US Airways Inc.
F9	Frontier Airlines Inc.
B6	JetBlue Airways
OO	Skywest Airlines Inc.
AS	Alaska Airlines Inc.
NK	Spirit Air Lines
WN	Southwest Airlines Co.
DL	Delta Air Lines Inc.
EV	Atlantic Southeast Airlines
MQ	American Eagle Airlines Inc.
VX	Virgin America



A



# MAP REDUCE OPERATIONS

✈ Map Reduce

HOME CRUD ML Visualization

## Frequency of Diverted/Cancelled Flights

Airline

JetBlue Airways

Diverted

☒

Cancelled

☒

View

Frequency of Diverted Flights

by : JetBlue Airways

is : 2.0

Frequency of Cancelled Flights

by : JetBlue Airways

is : 2.0

Back

✈ Map Reduce

HOME CRUD ML Visualization

## Frequency of Diverted/Cancelled Flights

Airport

Gen. Edward Lawrence Logan International Airport, Boston

Diverted

☒

Cancelled

☐

View

Frequency of Diverted Flights

from : Gen. Edward Lawrence Logan International Airport, Boston

is : 3.0

Back