Traffic Jam

Yelaman Sain, Vincent Lin, Joshua Tran, Carla Zhao

iXperience. Data Science and AI.
Summer 2022
Session 1
Green

Problem

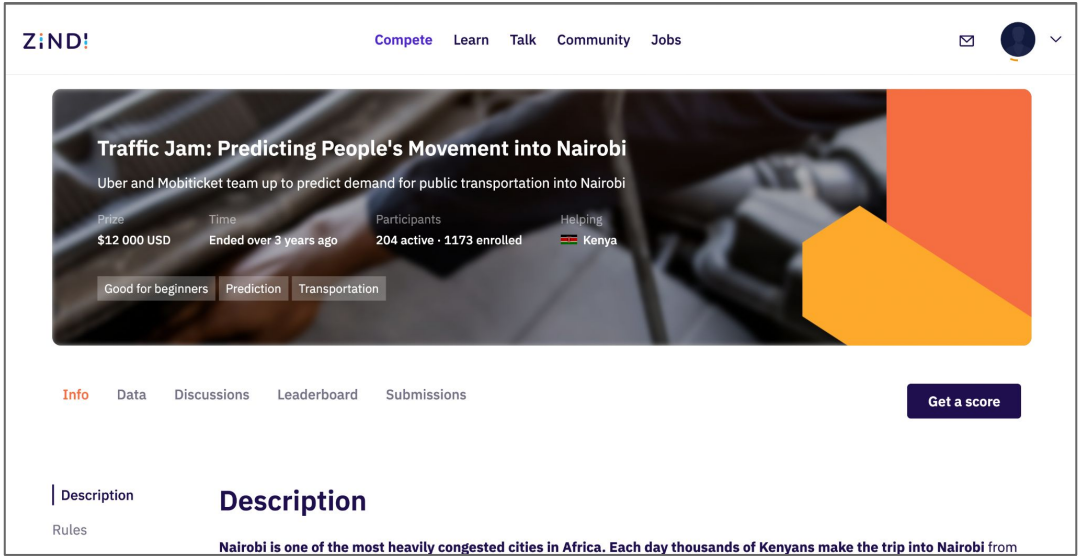
- Nairobi is one of the most congested cities in Africa.
- How do we use travel data to predict ticket sales?

Our Process

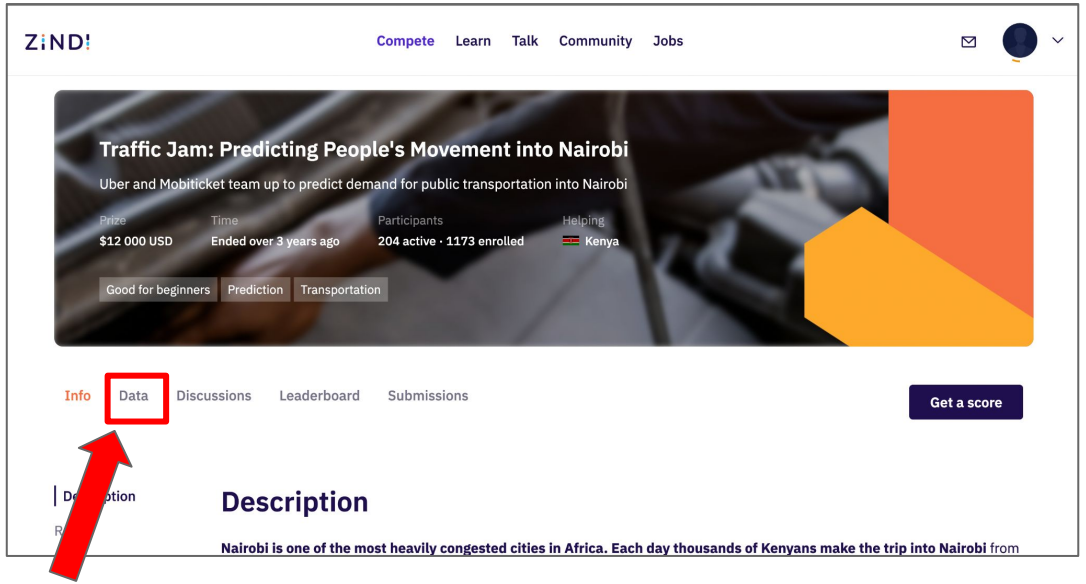
P	O	P	E	M	S
Define goal + project charter	Gather data from relevant sources	Clean + format data	Transform, visualize, hypothesize	Build a model Fit the model Validate the model	Put results to good use, App / Presentation/

Obtaining and Cleaning Data

Where is the data coming from?



Where is the data coming from?



Initial investigation of data

Data Dictionary

- ride_id: unique ID of a vehicle on a specific route on a specific day and time.
- seat_number: seat assigned to ticket
- payment_method: method used by customer to purchase ticket from Mobiticket (cash or Mpesa)
- payment_receipt: unique id number for ticket purchased from Mobiticket
- travel_date: date of ride departure. (MM/DD/YYYY)
- travel_time: scheduled departure time of ride. Rides generally depart on time. (hh:mm)
- travel_from: town from which ride originated
- travel_to: destination of ride. All rides are to Nairobi.
- car_type: vehicle type (shuttle or bus)
- max_capacity: number of seats on the vehicle

Initial investigation of data

```
ride_id              int64
seat_number         object
payment_method      object
payment_receipt     object
travel_date         object
travel_time         object
travel_from         object
travel_to           object
car_type            object
max_capacity         int64
dtype: object
```

Data Dictionary

- ride_id: unique ID of a vehicle on a specific route on a specific day and time.
- seat_number: seat assigned to ticket
- payment_method: method used by customer to purchase ticket from Mobiticket (cash or Mpesa)
- payment_receipt: unique id number for ticket purchased from Mobiticket
- travel_date: date of ride departure. (MM/DD/YYYY)
- travel_time: scheduled departure time of ride. Rides generally depart on time. (hh:mm)
- travel_from: town from which ride originated
- travel_to: destination of ride. All rides are to Nairobi.
- car_type: vehicle type (shuttle or bus)
- max_capacity: number of seats on the vehicle

Initial investigation of data

```
ride_id              int64
seat_number         object
payment_method      object
payment_receipt     object
travel_date         object
travel_time         object
travel_from         object
travel_to           object
car_type            object
max_capacity         int64
dtype: object
```

Data Dictionary

- ride_id: unique ID of a vehicle on a specific route on a specific day and time.
- seat_number: seat assigned to ticket
- payment_method: method used by customer to purchase ticket from Mobiticket (cash or Mpesa)
- payment_receipt: unique id number for ticket purchased from Mobiticket
- travel_date: date of ride departure. (MM/DD/YYYY)
- travel_time: scheduled departure time of ride. Rides generally depart on time. (hh:mm)
- travel_from: town from which ride originated
- travel_to: destination of ride. All rides are to Nairobi.
- car_type: vehicle type (shuttle or bus)
- max_capacity: number of seats on the vehicle

Quite a lot of 'object' data types…
Need to clean it up!

Initial investigation of data

	ride_id	seat_number	payment_method	payment_receipt	travel_date	travel_time	travel_from	travel_to	car_type	max_capacity
0	1442	15A	Mpesa	UZUEHCBUSO	17-10-17	7:15	Migori	Nairobi	Bus	49
1	5437	14A	Mpesa	TIHLBUSGTE	19-11-17	7:12	Migori	Nairobi	Bus	49
2	5710	8B	Mpesa	EQX8Q5G19O	26-11-17	7:05	Keroka	Nairobi	Bus	49
3	5777	19A	Mpesa	SGP18CL0ME	27-11-17	7:10	Homa Bay	Nairobi	Bus	49
4	5778	11A	Mpesa	BM97HFRGL9	27-11-17	7:12	Migori	Nairobi	Bus	49
...	...	...	...	...	...	...	...	...	...	...
51640	13826	9B	Mpesa	8V2XDDZR6V	20-04-18	8:00	Awendo	Nairobi	Bus	49
51641	13809	18A	Mpesa	4PEBSVJSNK	20-04-18	8:00	Migori	Nairobi	Bus	49
51642	13809	17A	Mpesa	LVN64LZDNN	20-04-18	8:00	Migori	Nairobi	Bus	49
51643	13796	16B	Mpesa	REYBSKTYWN	20-04-18	7:08	Awendo	Nairobi	Bus	49
51644	14304	7	Mpesa	AQN7FBUSGP	14-11-17	5:10	Kisii	Nairobi	Bus	49

51645 rows × 10 columns

Initial investigation of data

1. Remove unnecessary features
2. Aggregate the tickets bought per ride
3. Check and remove for duplicates
4. Look for missing values
5. Format other columns

Initial investigation of data

1. Remove unnecessary features

	ride_id	seat_number	payment_method	payment_receipt	travel_date	travel_time	travel_from	travel_to	car_type	max_capacity
0	1442	15A	Mpesa	UZUEHCBUSO	17-10-17	7:15	Migori	Nairobi	Bus	49
1	5437	14A	Mpesa	TIHLBUSGTE	19-11-17	7:12	Migori	Nairobi	Bus	49
2	5710	8B	Mpesa	EQX8Q5G19O	26-11-17	7:05	Keroka	Nairobi	Bus	49
3	5777	19A	Mpesa	SGP18CL0ME	27-11-17	7:10	Homa Bay	Nairobi	Bus	49
4	5778	11A	Mpesa	BM97HFRGL9	27-11-17	7:12	Migori	Nairobi	Bus	49
...	...	...	...	...	...	...	...	...	...	...
51640	13826	9B	Mpesa	8V2XDDZR6V	20-04-18	8:00	Awendo	Nairobi	Bus	49
51641	13809	18A	Mpesa	4PEBSVJSNK	20-04-18	8:00	Migori	Nairobi	Bus	49
51642	13809	17A	Mpesa	LVN64LZDNN	20-04-18	8:00	Migori	Nairobi	Bus	49
51643	13796	16B	Mpesa	REYBSKTYWN	20-04-18	7:08	Awendo	Nairobi	Bus	49
51644	14304	7	Mpesa	AQN7FBUSGP	14-11-17	5:10	Kisii	Nairobi	Bus	49

51645 rows × 10 columns

Initial investigation of data

1. Remove unnecessary features

	ride_id	seat_number	payment_method	payment_receipt	travel_date	travel_time	travel_from	travel_to	car_type	max_capacity
0	1442	15A	Mpesa	UZUEHCBUSO	17-10-17	7:15	Migori	Nairobi	Bus	49
1	5437	14A	Mpesa	TIHLBUSGTE	19-11-17	7:12	Migori	Nairobi	Bus	49
2	5710	8B	Mpesa	EQX8Q5G19O	26-11-17	7:05	Keroka	Nairobi	Bus	49
3	5777	19A	Mpesa	SGP18CL0ME	27-11-17	7:10	Homa Bay	Nairobi	Bus	49
4	5778	11A	Mpesa	BM97HFRGL9	27-11-17	7:12	Migori	Nairobi	Bus	49
...	...	...	...	...	...	...	...	...	...	...
51640	13826	9B	Mpesa	8V2XDDZR6V	20-04-18	8:00	Awendo	Nairobi	Bus	49
51641	13809	18A	Mpesa	4PEBSVJSNK	20-04-18	8:00	Migori	Nairobi	Bus	49
51642	13809	17A	Mpesa	LVN64LZDNN	20-04-18	8:00	Migori	Nairobi	Bus	49
51643	13796	16B	Mpesa	REYBSKTYWN	20-04-18	7:08	Awendo	Nairobi	Bus	49
51644	14304	7	Mpesa	AQN7FBUSGP	14-11-17	5:10	Kisii	Nairobi	Bus	49

51645 rows × 10 columns

Initial investigation of data

2. Aggregate the tickets bought per ride

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5777	27-11-17	7:10	Homa Bay	Bus	49	5
...	...	...	...	...	...	...	...
51640	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
51641	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
51642	13825	20-04-18	7:09	Rongo	Bus	49	1
51643	13826	20-04-18	8:00	Awendo	Bus	49	1
51644	14304	14-11-17	5:10	Kisii	Bus	49	1

51645 rows × 7 columns

Initial investigation of data

2. Aggregate the tickets bought per ride

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5777	27-11-17	7:10	Homa Bay	Bus	49	5
...	...	...	...	...	...	...	...
51640	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
51641	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
51642	13825	20-04-18	7:09	Rongo	Bus	49	1
51643	13826	20-04-18	8:00	Awendo	Bus	49	1
51644	14304	14-11-17	5:10	Kisii	Bus	49	1

51645 rows × 7 columns

Initial investigation of data

3. Check and remove duplicates

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

3. Check and remove duplicates

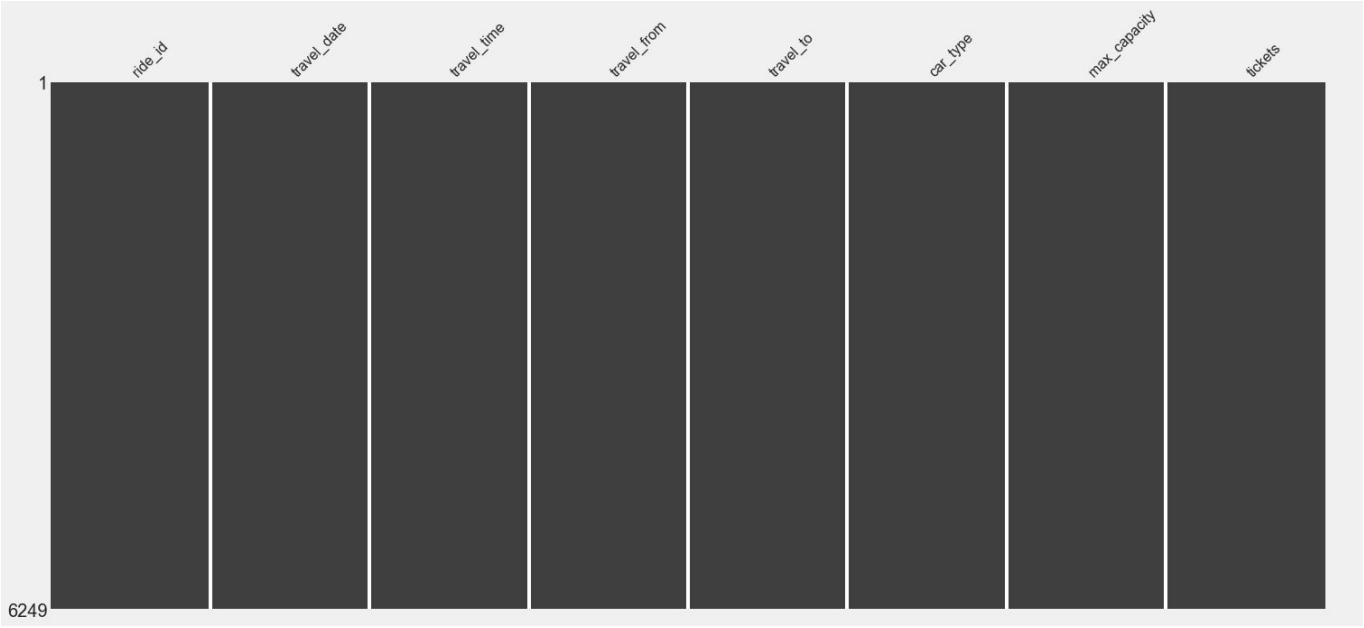
	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

From 51645 rows down to 6249

Initial investigation of data

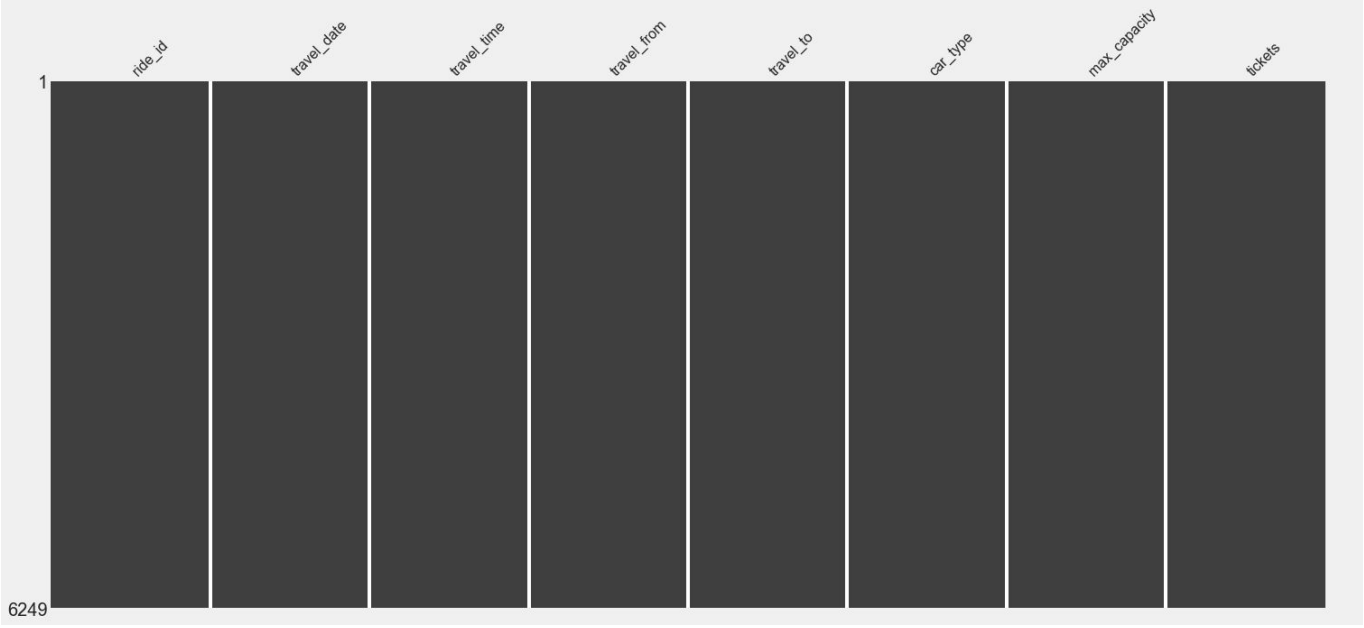
4. Look for missing values



Initial investigation of data

4. Look for missing values

Missingno matrix showing missing entries… there are none!



Initial investigation of data

5. Format other columns

travel_date

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

travel_date

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

travel_date ->

day,
month,
year,
weekday

travel_date

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

travel_time

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

travel_time

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

travel_time ->

departure_hour, departure_mins

travel_time

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

car_type & travel_from

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

car_type & travel_from

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

Encode car_type & travel_from categories into integers:

Bus = 0
Shuttle = 1

car_type & travel_from

	ride_id	travel_date	travel_time	travel_from	car_type	max_capacity	tickets
0	1442	17-10-17	7:15	Migori	Bus	49	1
1	5437	19-11-17	7:12	Migori	Bus	49	1
2	5710	26-11-17	7:05	Keroka	Bus	49	1
3	5777	27-11-17	7:10	Homa Bay	Bus	49	5
4	5778	27-11-17	7:12	Migori	Bus	49	31
...	...	...	...	...	...	...	...
6244	13812	20-04-18	23:10	Ndhiwa	Bus	49	11
6245	13813	20-04-18	7:05	Ndhiwa	Bus	49	11
6246	13825	20-04-18	7:09	Rongo	Bus	49	1
6247	13826	20-04-18	8:00	Awendo	Bus	49	1
6248	14304	14-11-17	5:10	Kisii	Bus	49	1

6249 rows × 7 columns

Initial investigation of data

5. Format other columns

Encode car_type & travel_from categories into integers:

Bus = 0
Shuttle = 1

car_type & travel_from

Codes for travel_from locations:

1. Awendo
2. Homa Bay
3. Kehancha
4. Kendu Bay
5. Keroka
6. Keumbu
7. Kijauri
8. Kisii
9. Mbita
10. Migori
11. Ndhiwa
12. Nyachenge
13. Oyugis
14. Rodi
15. Rongo
16. Sirare
17. Sori

Initial investigation of data

Final Cleaned Data Set

	travel_from	car_type	max_capacity	tickets	year	month	day	weekday	departure_mins	departure_hour	travel_from_int	car_type_int
0	Migori	Bus	49	1	2017	10	17	1	435	7	10	0
1	Migori	Bus	49	1	2017	11	19	6	432	7	10	0
2	Keroka	Bus	49	1	2017	11	26	6	425	7	5	0
3	Homa Bay	Bus	49	5	2017	11	27	0	430	7	2	0
4	Migori	Bus	49	31	2017	11	27	0	432	7	10	0
...	...	...	...	...	...	...	...	...	...	...	...	...
6244	Ndhiwa	Bus	49	11	2018	4	20	4	1390	23	11	0
6245	Ndhiwa	Bus	49	11	2018	4	20	4	425	7	11	0
6246	Rongo	Bus	49	1	2018	4	20	4	429	7	15	0
6247	Awendo	Bus	49	1	2018	4	20	4	480	8	1	0
6248	Kisii	Bus	49	1	2017	11	14	1	310	5	8	0

6249 rows × 12 columns

Initial investigation of data

Final Cleaned Data Set

(Kept these for reference in plotting)

	travel_from	car_type	max_capacity	tickets	year	month	day	weekday	departure_mins	departure_hour	travel_from_int	car_type_int
0	Migori	Bus	49	1	2017	10	17	1	435	7	10	0
1	Migori	Bus	49	1	2017	11	19	6	432	7	10	0
2	Keroka	Bus	49	1	2017	11	26	6	425	7	5	0
3	Homa Bay	Bus	49	5	2017	11	27	0	430	7	2	0
4	Migori	Bus	49	31	2017	11	27	0	432	7	10	0
...	...	...	...	...	...	...	...	...	...	...	...	...
6244	Ndhiwa	Bus	49	11	2018	4	20	4	1390	23	11	0
6245	Ndhiwa	Bus	49	11	2018	4	20	4	425	7	11	0
6246	Rongo	Bus	49	1	2018	4	20	4	429	7	15	0
6247	Awendo	Bus	49	1	2018	4	20	4	480	8	1	0
6248	Kisii	Bus	49	1	2017	11	14	1	310	5	8	0

6249 rows × 12 columns

Data Cleaning Summary:

1. Removed unnecessary features
2. Aggregated the tickets bought per ride
3. Checked and removed duplicates
4. Looked for missing values
5. Formated other columns

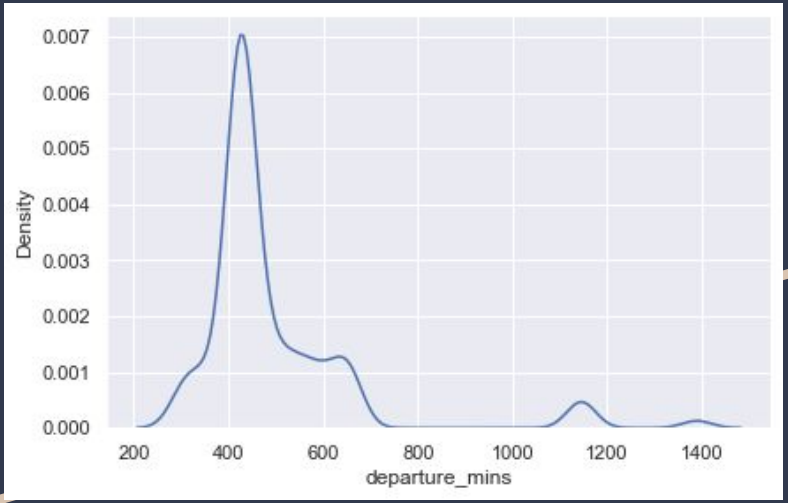
Data Cleaning Summary:

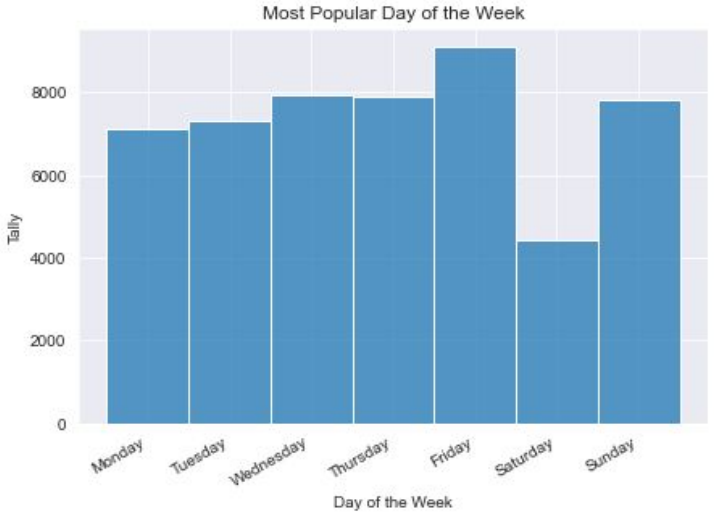
1. Removed unnecessary features
2. Aggregated the tickets bought per ride
3. Checked and removed duplicates
4. Looked for missing values
5. Formated other columns

Now we are ready to investigate the relations of and between these features and start modeling

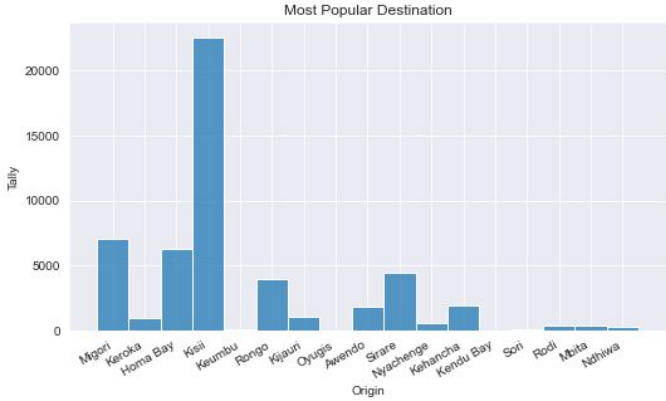
Exploratory Data Analysis

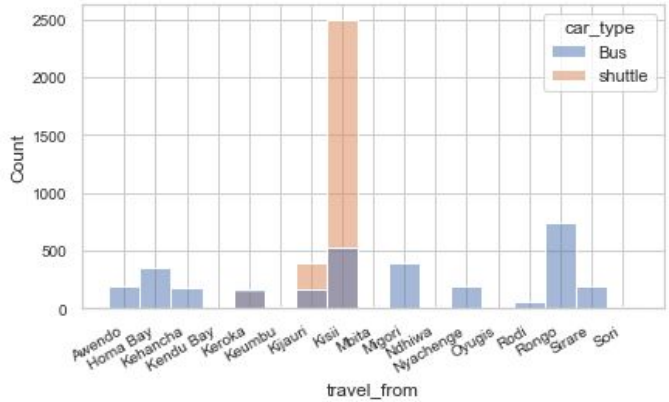
Most Popular Time to Travel



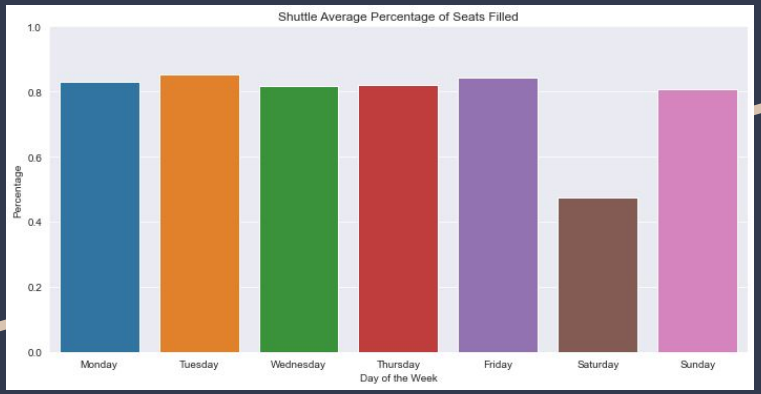


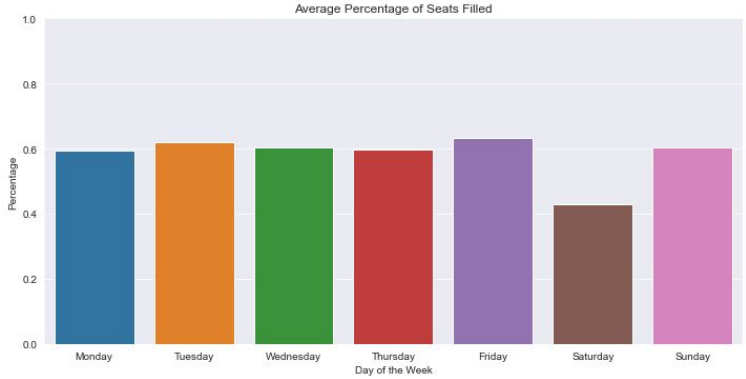
Most Popular Origin

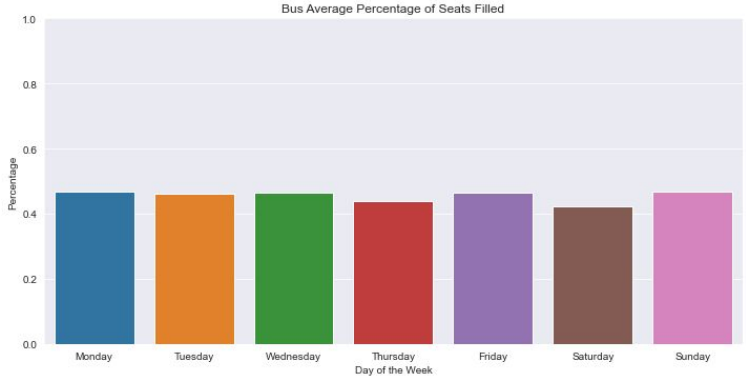


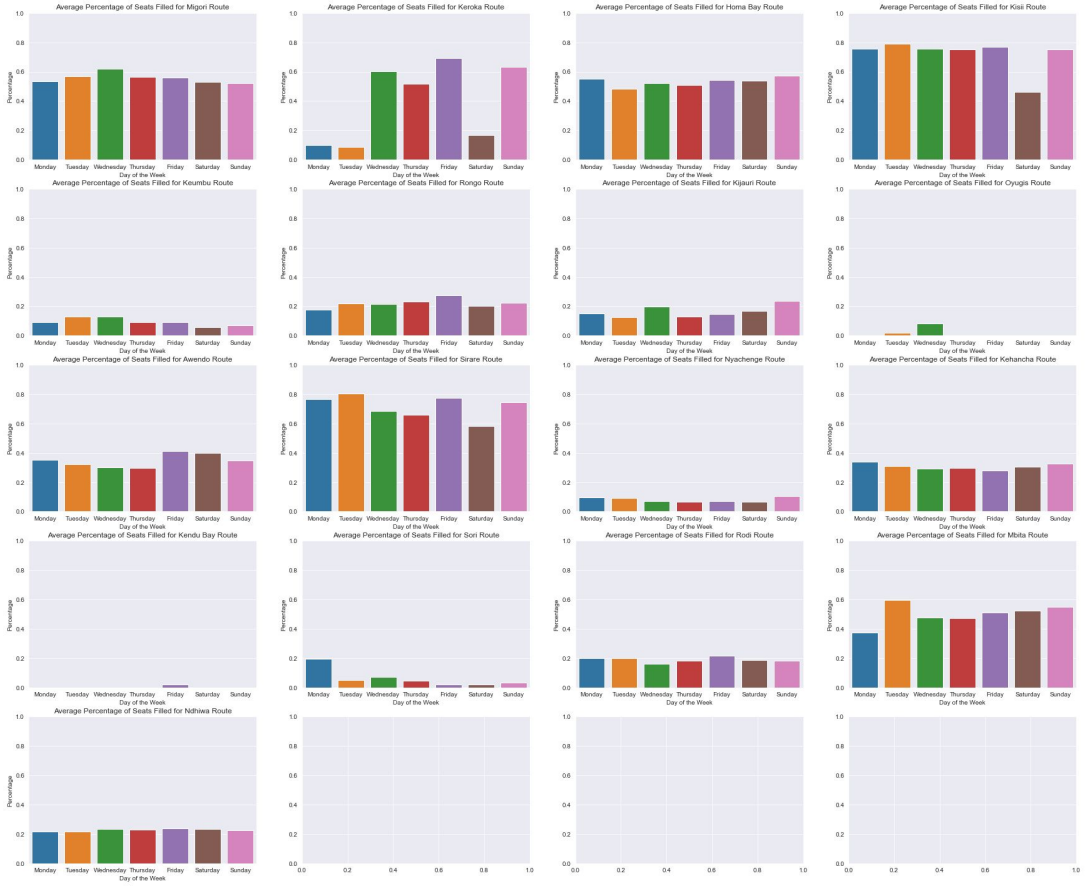


Percentage of Seats Filled

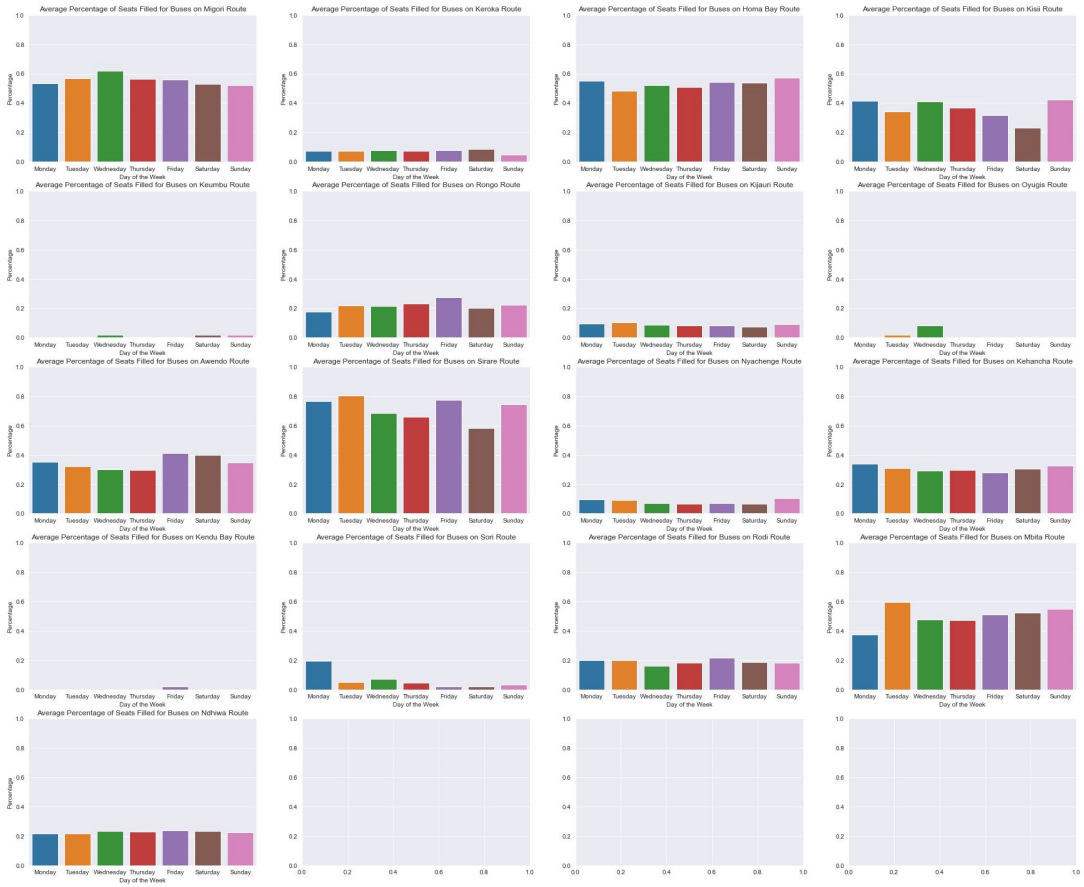




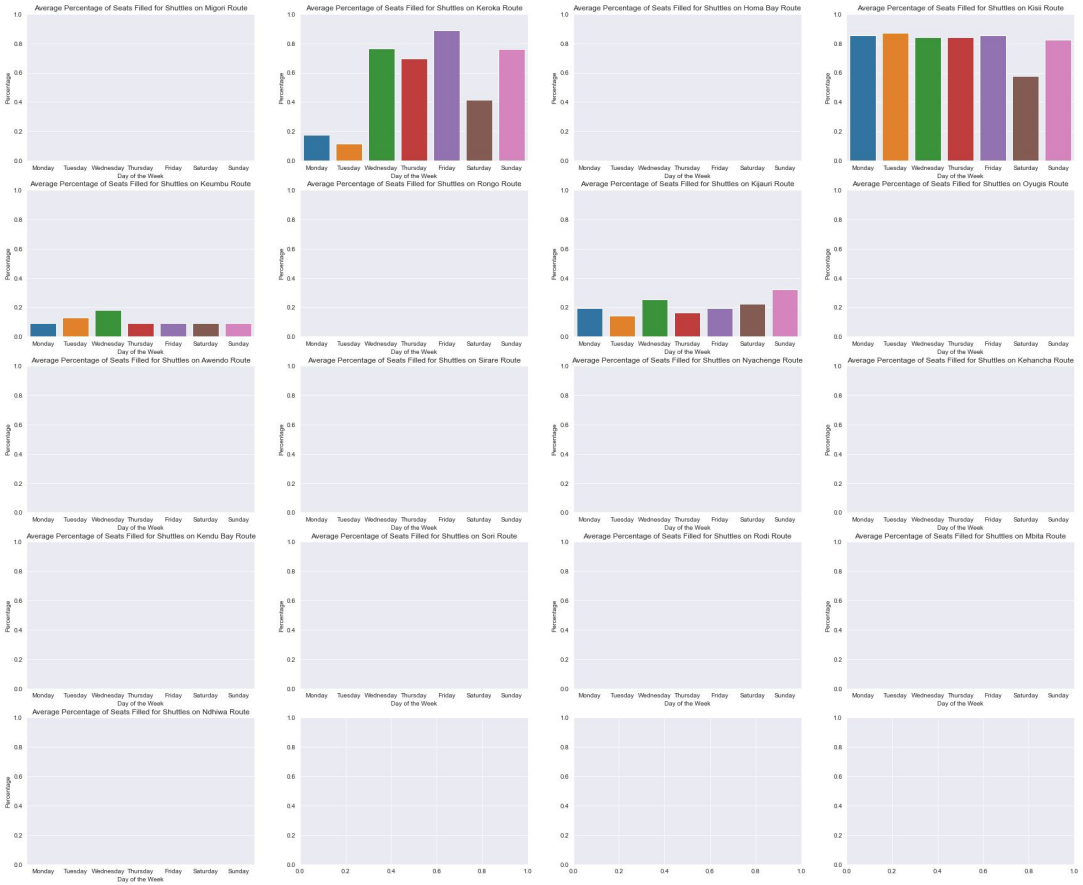




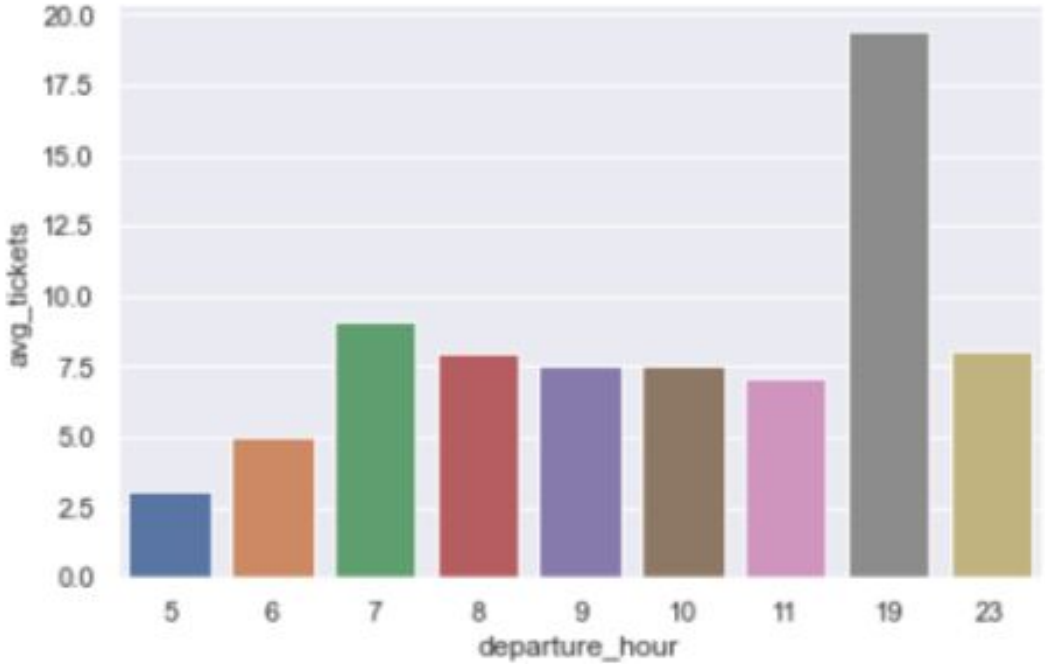
Average Percentage of Seats Filled For Each Route



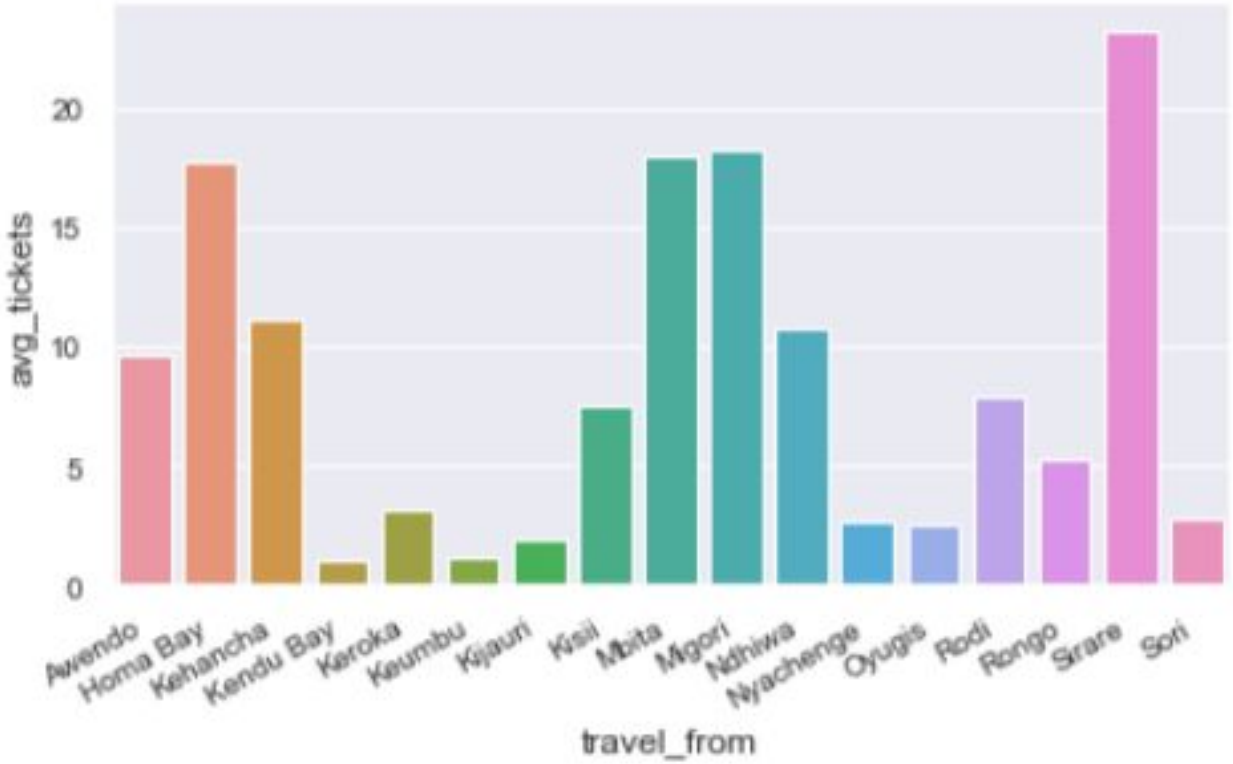
Average Percentage of Bus Seats Filled For Each Route



Average Percentage of Shuttle Seats Filled For Each Route



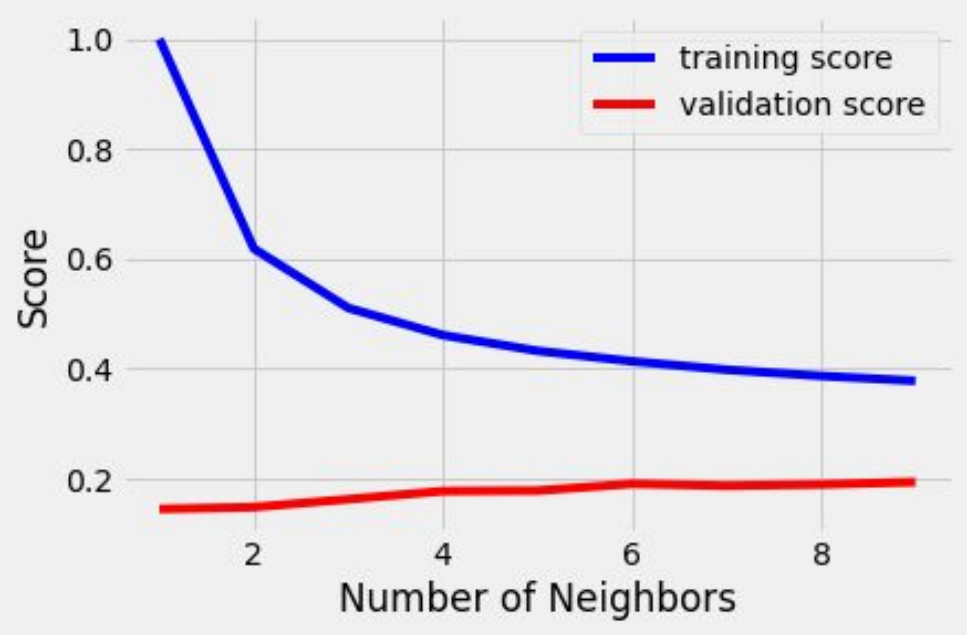
Average Tickets Sold of a Ride by Departure Hour



Average Tickets Sold of a Ride by Each Origin Destination

Modeling

Modeling: KNN



MSE and MAE Scores (With KNN of 1-7)

-102.881302	-6.216125
-81.292274	-6.002240
-82.390816	-5.465846
-79.270996	-5.497200
-77.034714	-5.643897
-86.354263	-6.105381
-72.359863	-5.853139

Modeling

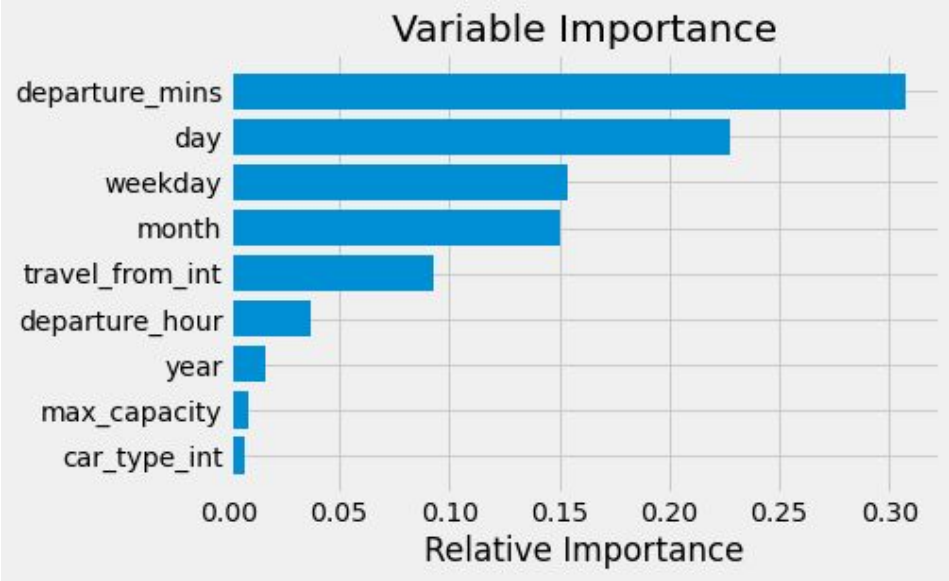
Random Forest Regressor

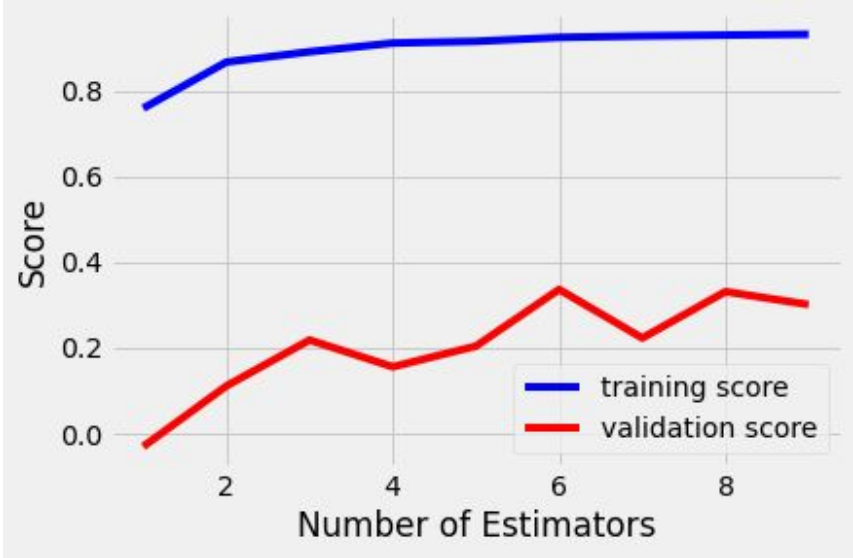
Our Results

Train/Test Split: 3.30

Best in Competition (On test data): 3.30

Test Dataset: 3.49




0.8
0.6
0.4
0.2
0.0
Score
2
4
6
8
Number of Estimators
training score
validation score

Thanks for Listening!

Competition Leaderboard

This is the final leaderboard. The competition is officially closed and will not accept any more submissions. Congratulations to all that participated.

RANK	USER	SCORE	LAST SUBMISSION
1	 Mohamed_Salam_Jedidi InstaDeep	3.3024302430243	over 3 years ago
2	 [illegible] [illegible]	3.[illegible]703870387	over 3 years ago
3	 steveoni Aims-senegal	3.40774077407741	over 3 years ago
4	 OLALEYE_ENIOLA_DSN University of lagos	3.44554455445545	over 3 years ago
5	 Holar	3.457387886586	over 3 years ago