

2.

a] Jaques Bertin defined marks as basic units and developed a number of methods, including position, scale, shape, or colour, for these units. These changes are referred to as optical variables. Many features may be found in each of these variables. Optical characteristics are sometimes also known as visual features.

b] Visual variables are how map components can be regulated by symbology or visual appearance. Such artistic methods can be used to create an image, to provide detailed spatial details and to create a dynamic structure that the map viewer can recognize.

c]

Position	Size	Shape	Value	Hue (Coloured)	Orientation	Texture
Selective	Selective	Associative	Selective	Selective	Selective	Selective
Associative	Ordered		Ordered	Associative	Associative	Quantitative
Ordered	Quantitative		Quantitative		(Occasional)	(Occasional)
Quantitative						

3.

3.

## Bridges to prosperity

a) Data Field are By stage/year, Completed, Confirmed & Under Construction

b) Visual units:

Purple - Complete

Green - Confirmed

Orange - Under Construction

Variables are used from year 2008 to 2021 & countries

Data	Variable	Geo
Complete	Purple	Visual Data
Confirmed	Green	Visual Country
Orange	Orange	

d) The visualization is great, it needs no change

## NYC Cyclist Collision

I think this project need more data

a) Data Field:

Cyclists Injured in Collisions.

Cyclists Killed in Collisions

Vehicles Involved in Collisions

Contributing factors

b) Visual Units

Red - death

Scale from yellow to red - #cyclists injured Deaths 0-59

d) Yes this data is presented nicely & efficiently. Out of this three in my opinion this was best visually presented.

## Customer Surveys Result

a) Data Fields are Average Interest level, Moving Avg. of Marketing Expense, & Survey Date.

b) Visual Units:

Light purple - Cloud

light yellow - Crowdsourcing

light red - Hosted Solution

light green - SAAS

Variables are used from year 2008 & 2009, State Variable for all charts

Data	Visual (light colors)
Cloud	Purple
Crowdsourcing	yellow
Hosted Solution	red
SAAS	green

d) Yes, for customer service data I think this Book is perfect. It represents Value, States & Duration for demand.

Data	Visual
longitude & latitude	Range of injured cyclists.

Graph:

Data	Visual
Cyclists injured	gray
Deaths	red

Bar chart:

Data	Visual
# of vehicles involved in collision	Red
Deaths	

Bar chart 2/plot chart

Data	Visual
# cyclists injured min	Yellow
# of cyclists injured max	Red
# of cyclists during months	Green

4.

NUMBER OF PROPERTIES IN EACH NEIGHBOURHOOD AND THEIR PROPERTY TYPES

Neighbourhood / Property Type

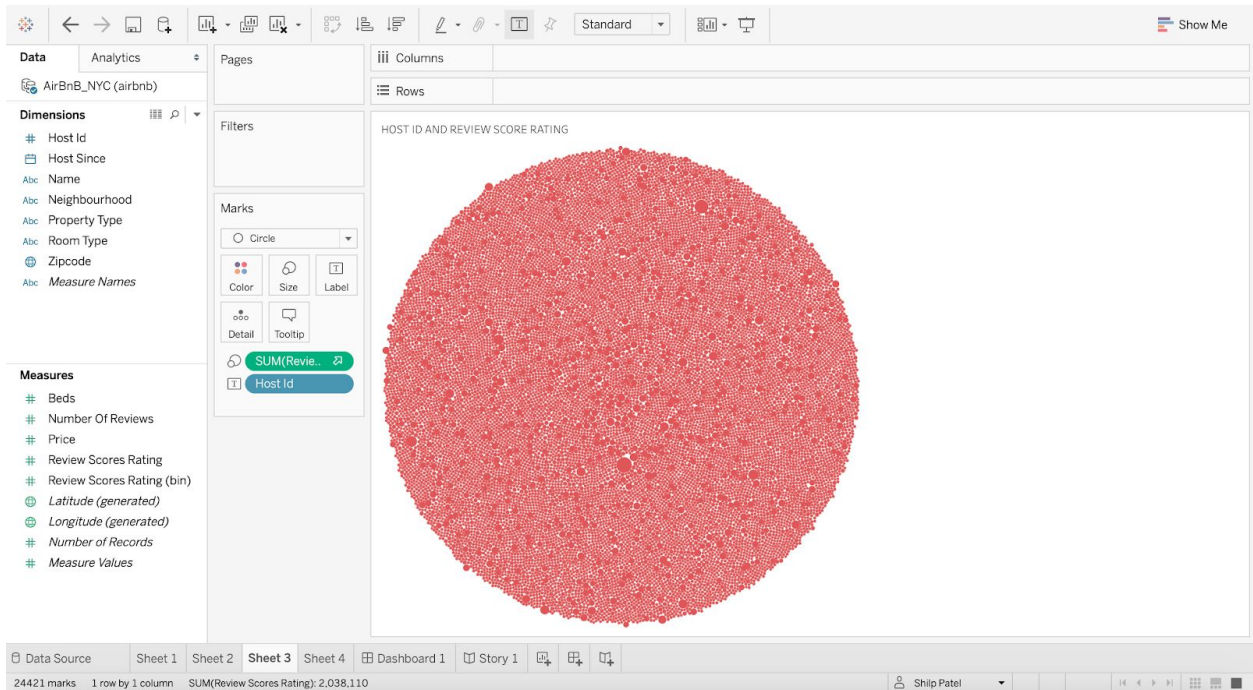
Number of Records

Property Type

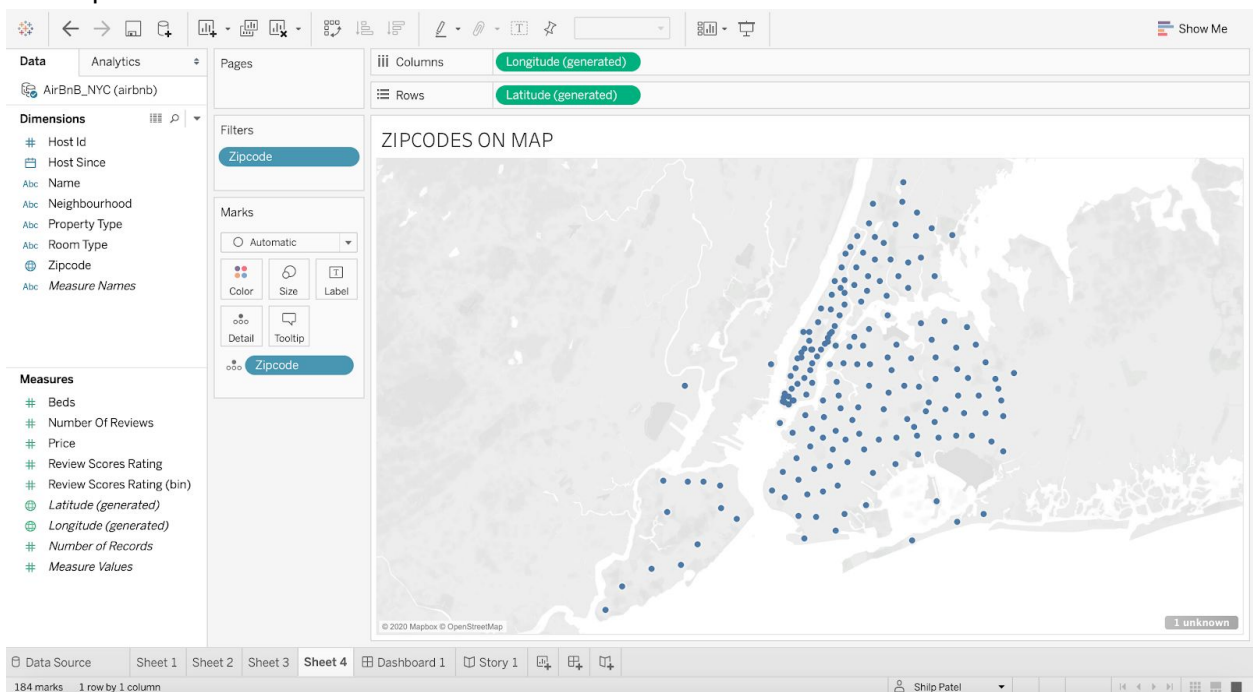
- Null
- Apartment
- Bed & Breakfast
- Boat
- Bungalow
- Cabin
- Camper/RV
- Castle
- Chalet
- Condominium
- Dorm
- House
- Hut
- Lighthouse
- Loft
- Other
- Tent
- Townhouse
- Treehouse
- Villa



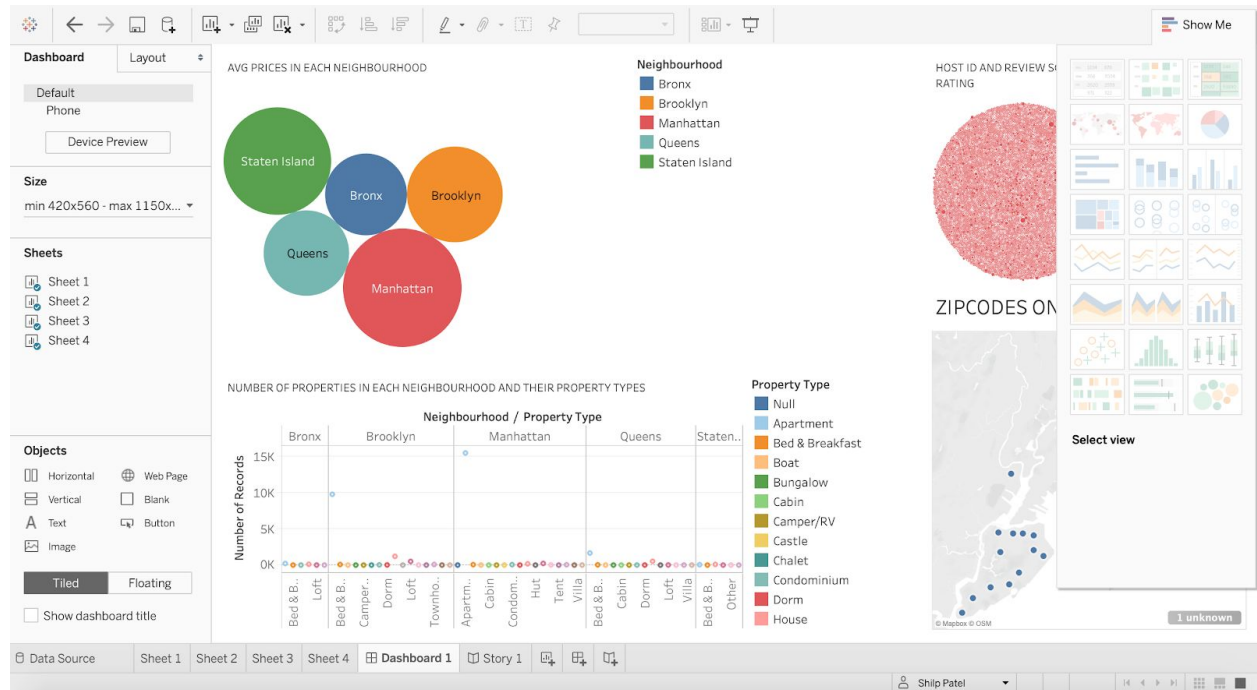
This visualization represents host id and their number of reviews, the biggest the circle is that host has most reviews.



This visualization represents the zipcodes of new york, and shows where each is located on the map.



This the dashboard with all four visualization. It represents an overview of all the sheets in one place which makes it efficient to analyze.



This is a Story which helps us to represent important questions of the data and use the visualization to show the accurate analysis to answer the question.

