NEW YORK FOOD DESERT ANALYSIS

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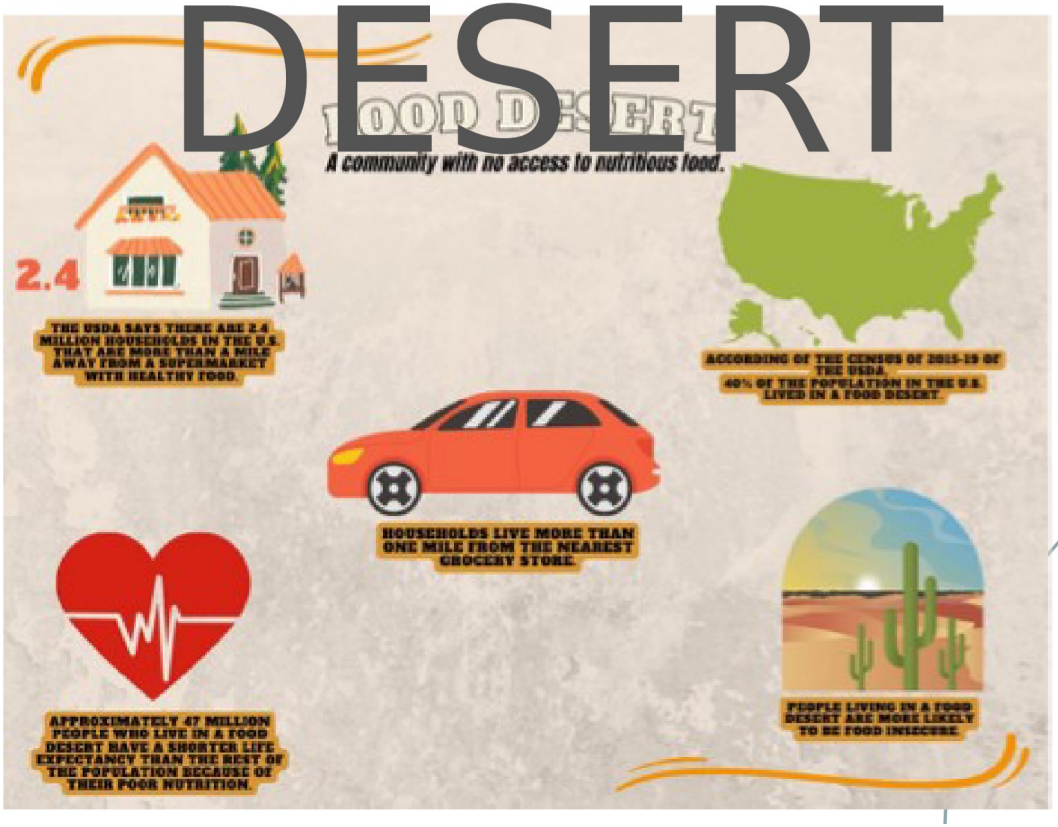
AGENDA

- INTRODUCTION
- REQUIREMENT GATHERING
- PROJECT MANAGEMENT
- DATA COLLECTION AND SOURCES
- ANALYTICAL APPROACH
- RESULTS AND FINDINGS
- DELIVERABLES
- CONCLUSION

RJ

FOOD DESERT BACKGROUND



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PROJECT INITIATIVES

PROJECT SCOPE, TOOLS, DELIVERABLES

- Data Collection
- Database Design
- Data Analysis
- Visualization/Dashboards
- Reporting

IDENTIFYING FOOD DESERTS

- Identify what regions of New York have the lowest access to food

UNDERSTANDING CHARACTERISTICS

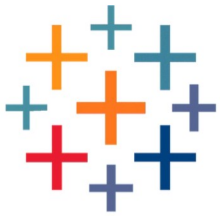
- Understand what makes that region a food desert

PROJECT TOOLS

Jira Software

Drive

Microsoft® SQL Server®



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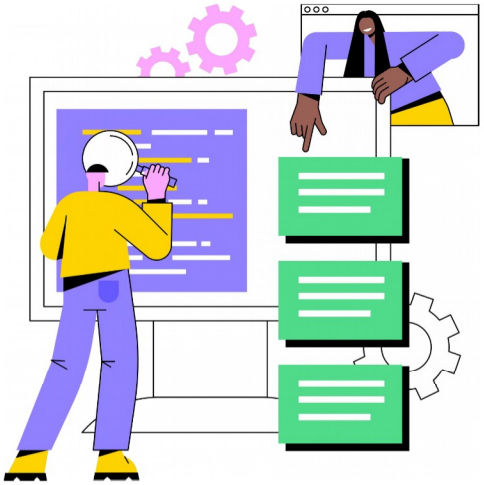
REQUIREMENT GATHERING

- Identifying Key Stakeholders
- Data Requirement
- Functional Requirement



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PROJECT MANAGEMENT

- Implementing Agile Methodology
- Sprint Cycle
  - 4 total cycles
  - 2-week sprints, exception of Sprint 3

Sprint 0	Sprint 1	Sprint 2	Sprint 3
4/15 - 4/29	4/29 - 5/13	5/13 - 5/27	5/27 - 6/3

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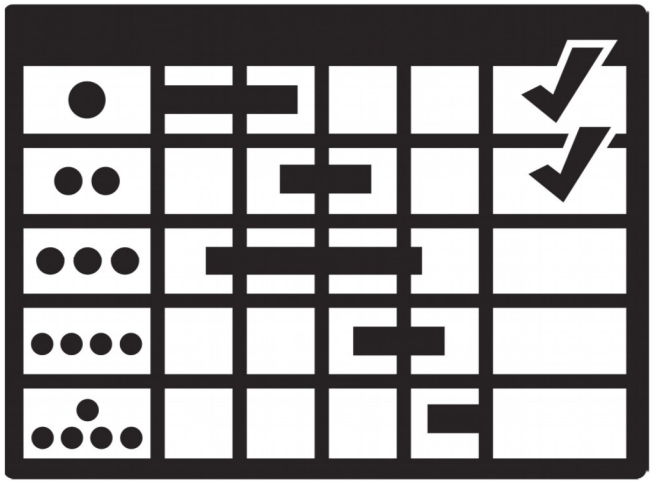
JIRA

- Project Initialization
- Sprint Planning
- Backlog Management



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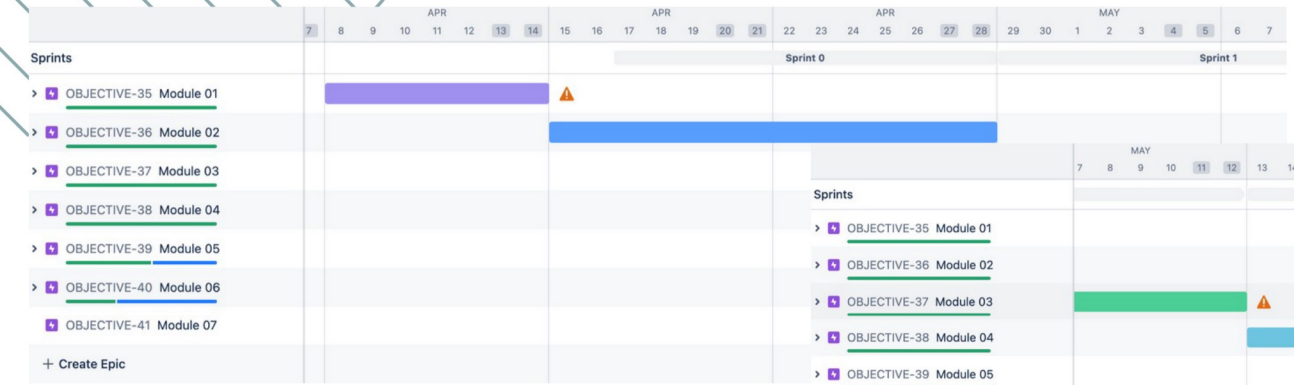
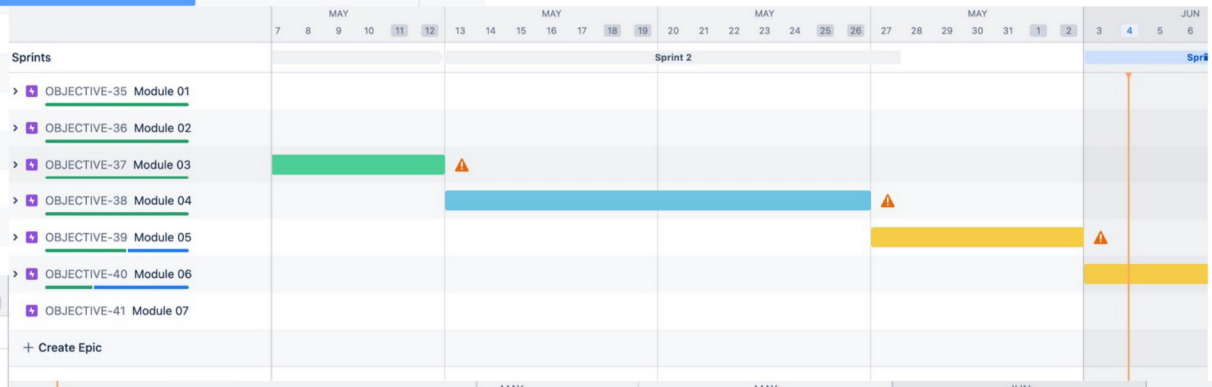
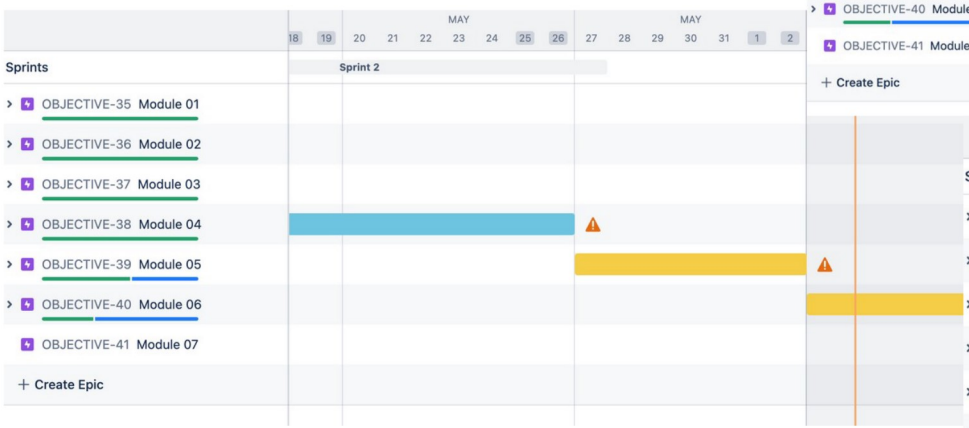
USER STORIES

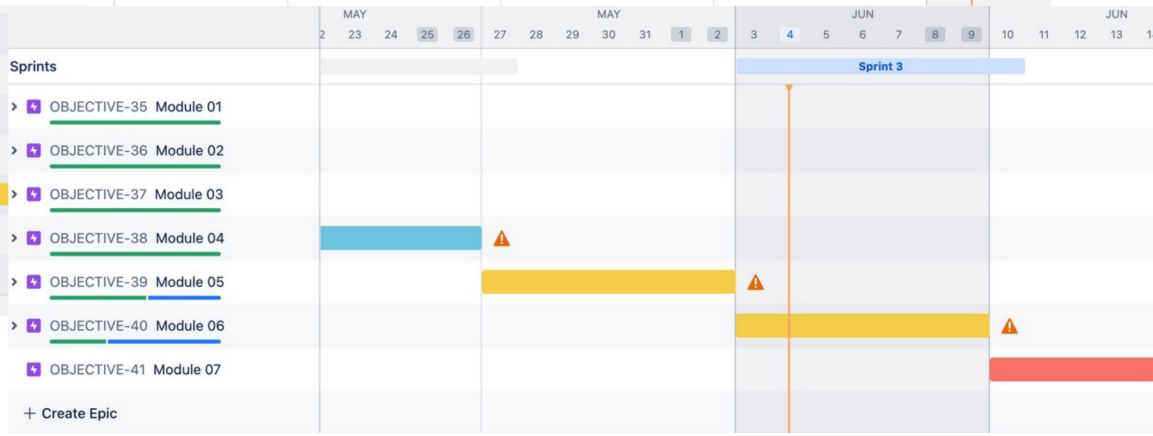
- User Story for State Health Officials: As a state health official, I want to identify regions in New York where access to grocery stores is limited, so that I can prioritize these areas for interventions and support.
- User Story for Data Analysts: As a data analyst working on public health issues, I want to analyze the distribution of SNAP benefits across different neighborhoods, so that I can understand the correlation between SNAP benefit distribution and the availability of grocery stores.
- User Story for Policy Makers: As a policy maker, I want to view a dashboard that shows both food deserts and areas with high concentrations of SNAP recipients, so that I can make informed decisions on where to allocate resources like mobile food markets or subsidies for local groceries.
- User Story for GIS Specialists: As a GIS specialist, I want to create a map overlaying food deserts with SNAP recipient housing, so that stakeholders can visually assess the geographic distribution and scale of these overlaps.

SPRINT PLANNING









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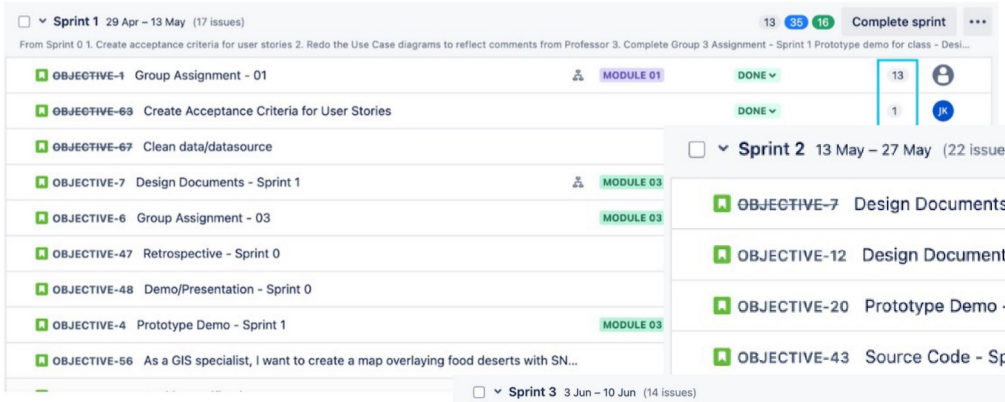
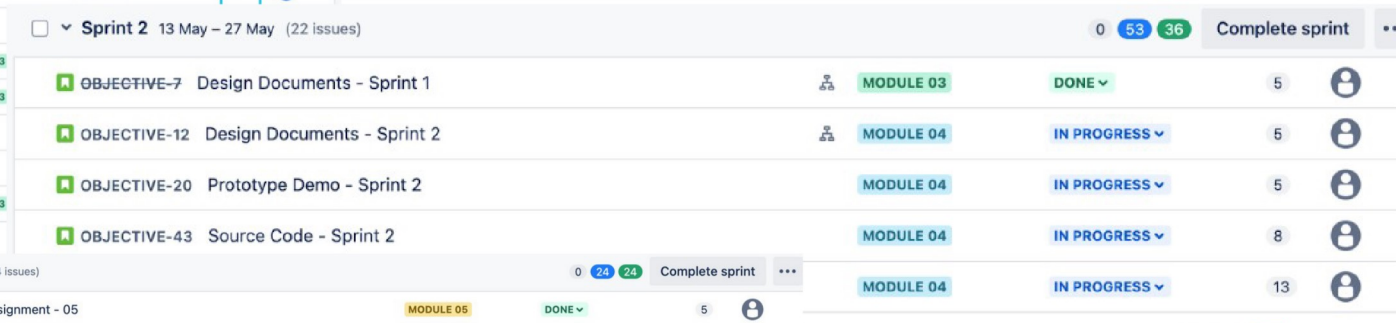
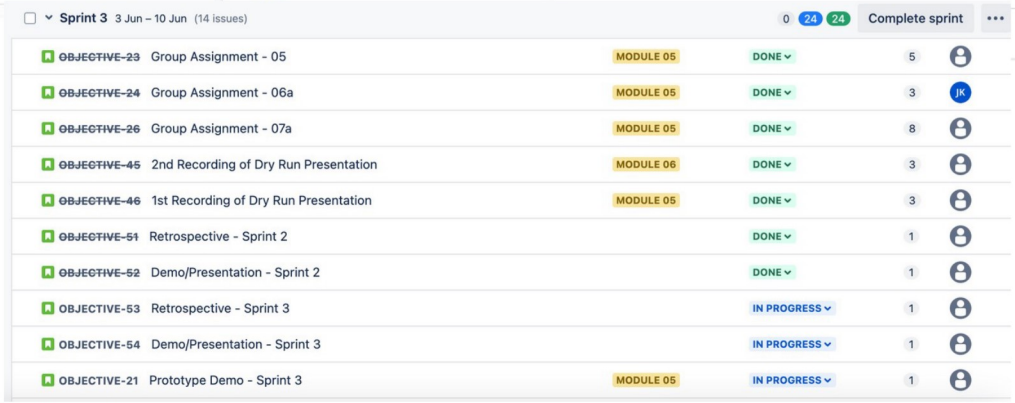
BACKLOG MANAGEMENT







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DATA COLLECTION AND SOURCES

DATA CLEANSING PROCESS

RJ

- Removed non-NY state records from Atlas, turning data source from ‘USA Atlas’ to ‘NY Atlas‘
- Removed columns from NY Atlas that contained high quantities (50% or higher) null values.
- Removed demographic columns that were outside the scope of our project/didn’t fit with our user stories

DATA CLEANSING AND TRANSFORMATION

RJ

	A	B	C	D	E	F	G	H	I	J	K	L
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72505	56033000500	Wyoming	Sheridan County	0	6541	2736	0	0	0.00	0	0	0
72506	56033000600	Wyoming	Sheridan County	0	4697	1716	0	327	6.96	0	0	0
72507	56035000101	Wyoming	Sublette County	0	4321	1541	0	525	12.15	0	0	0
72508	56035000102	Wyoming	Sublette County	0	5926	2365	0	25	0.42	0	0	0
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72515	56037970902	Wyoming	Sweetwater County	1	4105	1485	0	9	0.22	0	0	0
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72526	56041975300	Wyoming	Uinta County	0	7761	2696	0	205	2.64	0	0	0
72527	56041975400	Wyoming	Uinta County	0	6852	2632	0	65	0.95	0	0	0
72528	56043000200	Wyoming	Washakie County	0	3326	1317	0	57	1.71	0	0	0
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72530	56043000302	Wyoming	Washakie County	1	2542	1021	0	73	2.87	0	0	0
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72533												

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Read Me | Variable Lookup | Food Access Research Atlas

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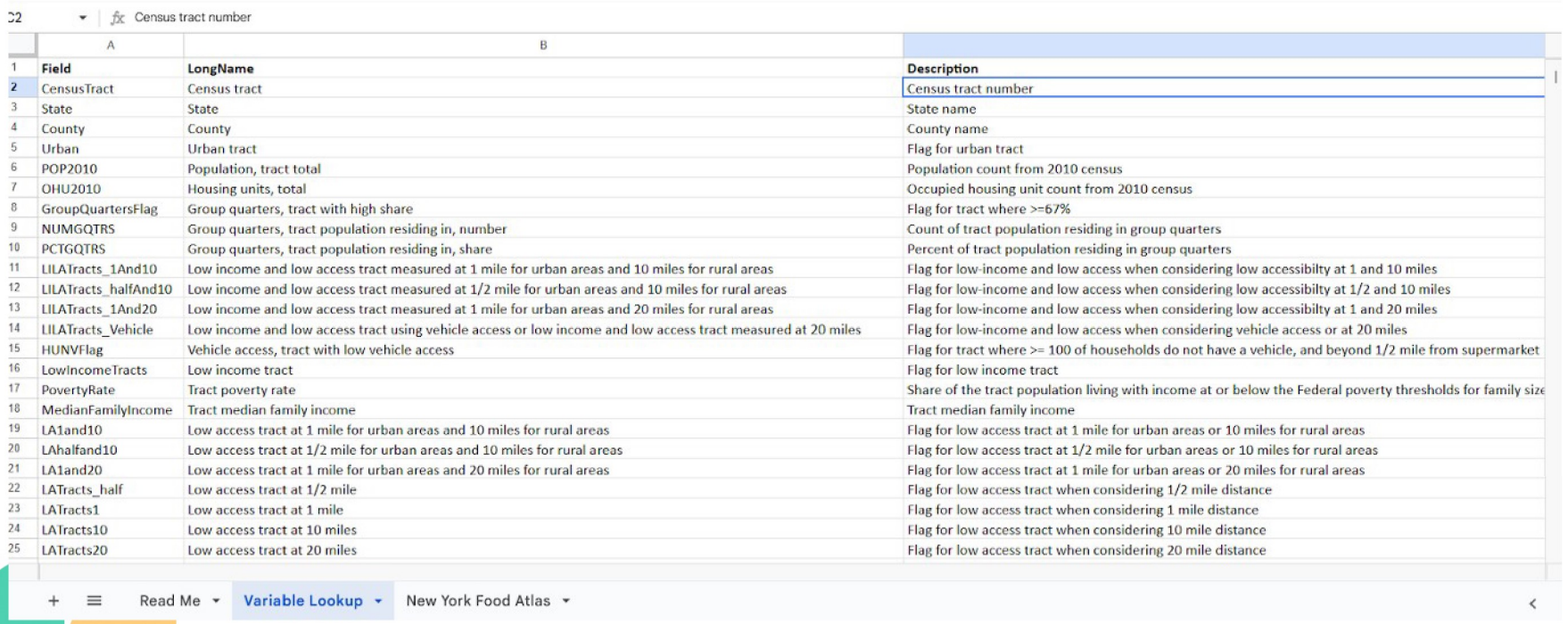
DATA OVERVIEW

Primary entities being measured:

- CensusTract
- PovertyRate
- LowAccessDistance
- HousingUnit
- SNAPAssistance



C2 | Census tract number

	A	B	
1	**Field**	**LongName**	**Description**
2	CensusTract	Census tract	Census tract number
3	State	State	State name
4	County	County	County name
5	Urban	Urban tract	Flag for urban tract
6	POP2010	Population, tract total	Population count from 2010 census
7	OHU2010	Housing units, total	Occupied housing unit count from 2010 census
8	GroupQuartersFlag	Group quarters, tract with high share	Flag for tract where >=67%
9	NUMGQTRS	Group quarters, tract population residing in, number	Count of tract population residing in group quarters
10	PCTGQTRS	Group quarters, tract population residing in, share	Percent of tract population residing in group quarters
11	LILATracts_1And10	Low income and low access tract measured at 1 mile for urban areas and 10 miles for rural areas	Flag for low-income and low access when considering low accessibilty at 1 and 10 miles
12	LILATracts_halfAnd10	Low income and low access tract measured at 1/2 mile for urban areas and 10 miles for rural areas	Flag for low-income and low access when considering low accessibilty at 1/2 and 10 miles
13	LILATracts_1And20	Low income and low access tract measured at 1 mile for urban areas and 20 miles for rural areas	Flag for low-income and low access when considering low accessibilty at 1 and 20 miles
14	LILATracts_Vehicle	Low income and low access tract using vehicle access or low income and low access tract measured at 20 miles	Flag for low-income and low access when considering vehicle access or at 20 miles
15	HUNVFlag	Vehicle access, tract with low vehicle access	Flag for tract where >= 100 of households do not have a vehicle, and beyond 1/2 mile from supermarket
16	LowIncomeTracts	Low income tract	Flag for low income tract
17	PovertyRate	Tract poverty rate	Share of the tract population living with income at or below the Federal poverty thresholds for family size
18	MedianFamilyIncome	Tract median family income	Tract median family income
19	LA1and10	Low access tract at 1 mile for urban areas and 10 miles for rural areas	Flag for low access tract at 1 mile for urban areas or 10 miles for rural areas
20	LAhalfand10	Low access tract at 1/2 mile for urban areas and 10 miles for rural areas	Flag for low access tract at 1/2 mile for urban areas or 10 miles for rural areas
21	LA1and20	Low access tract at 1 mile for urban areas and 20 miles for rural areas	Flag for low access tract at 1 mile for urban areas or 20 miles for rural areas
22	LATracts_half	Low access tract at 1/2 mile	Flag for low access tract when considering 1/2 mile distance
23	LATracts1	Low access tract at 1 mile	Flag for low access tract when considering 1 mile distance
24	LATracts10	Low access tract at 10 miles	Flag for low access tract when considering 10 mile distance
25	LATracts20	Low access tract at 20 miles	Flag for low access tract when considering 20 mile distance

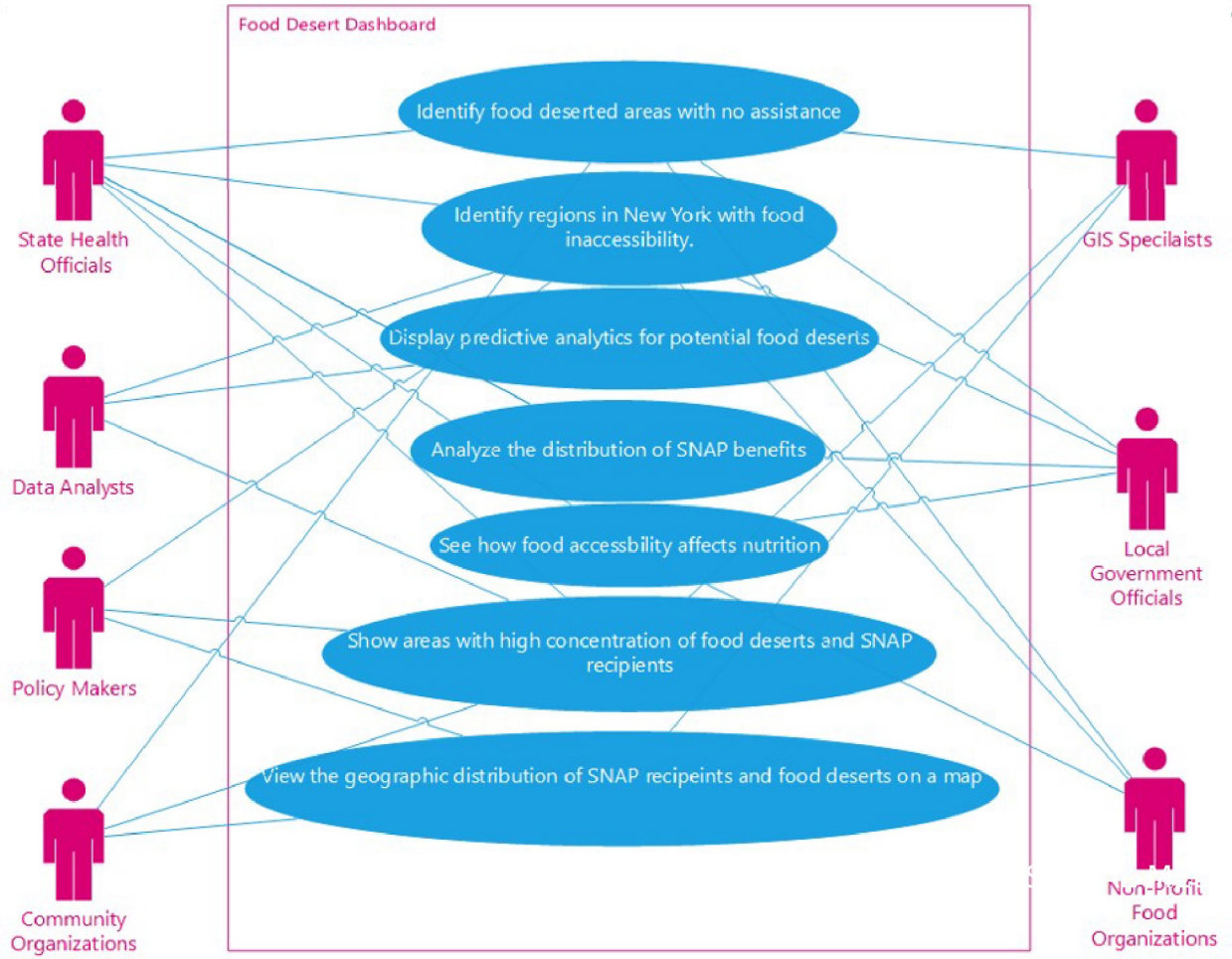
Read Me | Variable Lookup | New York Food Atlas

OBJECTIVES

- Identify Low access regions
- Analyze distribution of SNAP benefits
- Visualize low access regions against distributed aid
- Map out food deserts against SNAP recipients
- Identify food deserts where there is a lack of SNAP aid

UML DESIGN DOCUMENTS

USE CASE DIAGRAM



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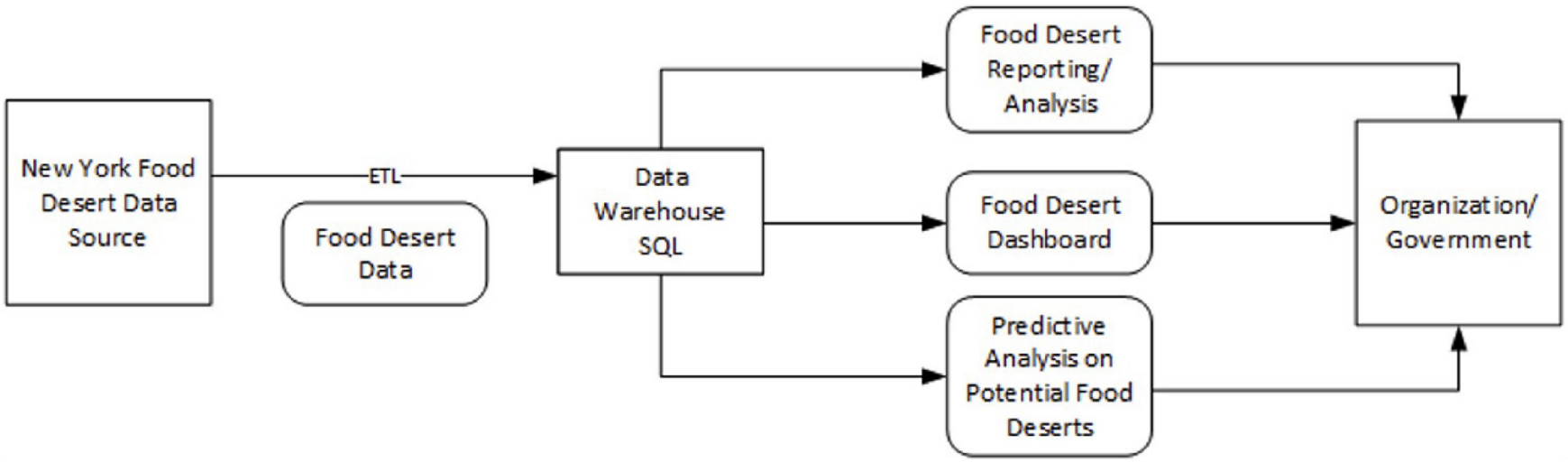
DATA FLOW DIAGRAM



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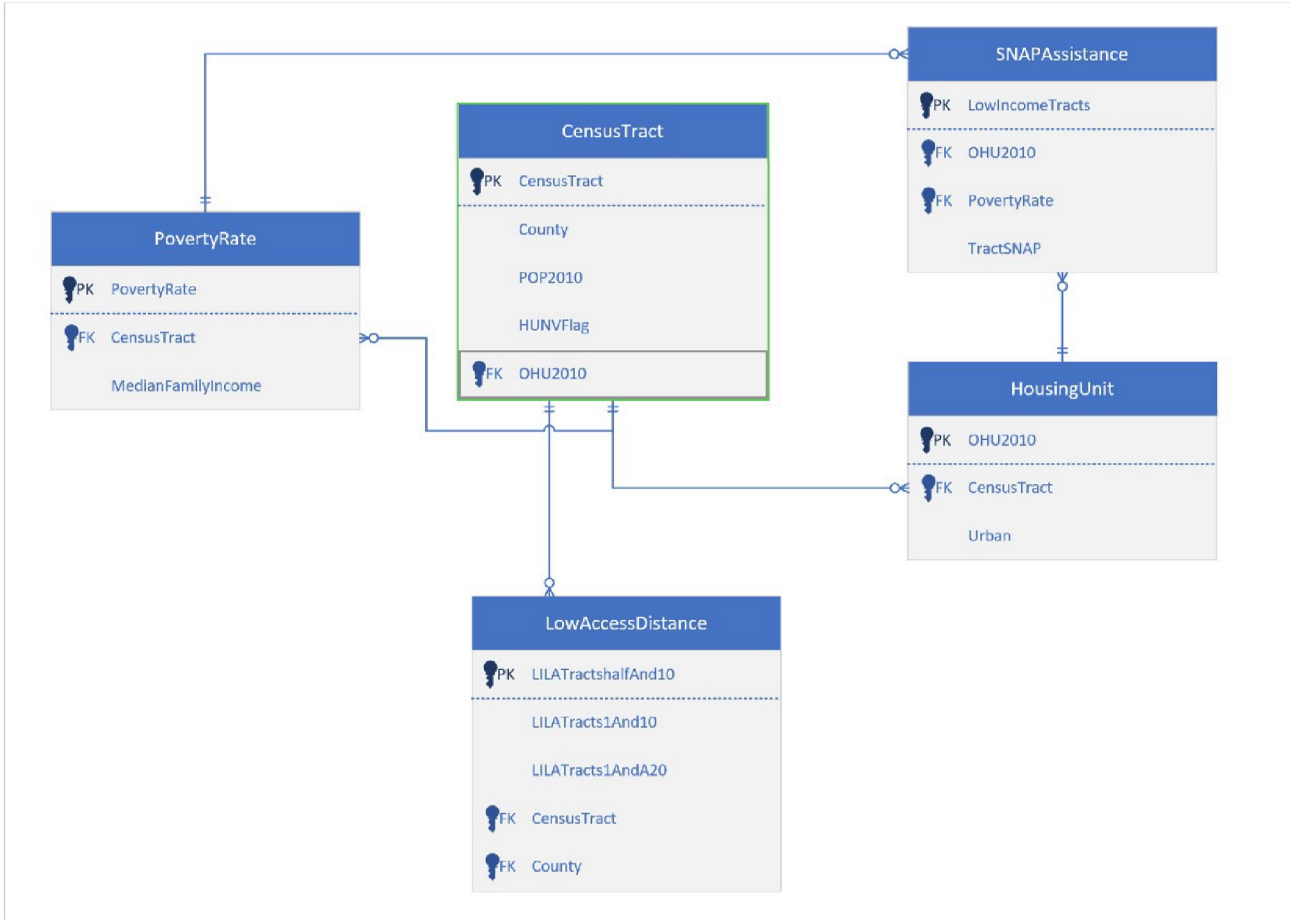
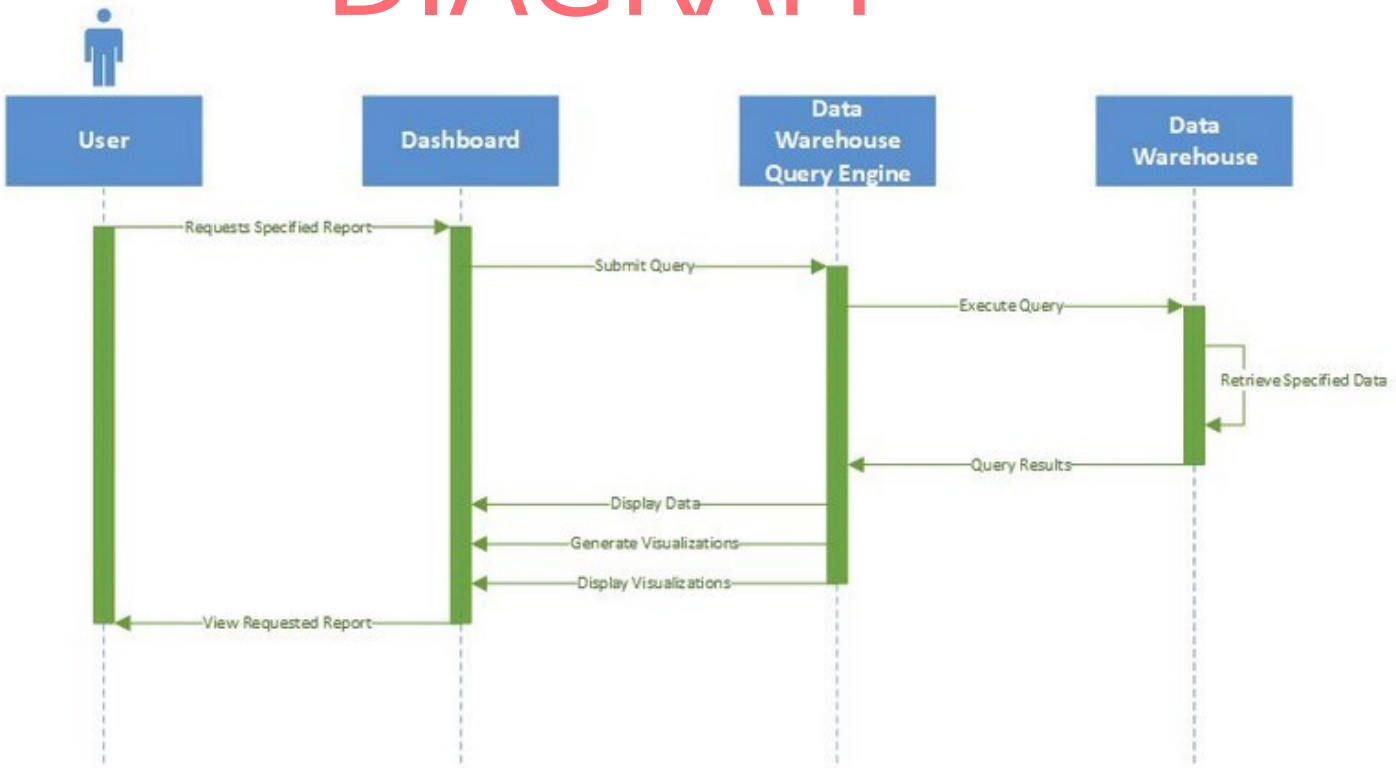
ER DIAGRAM



SEQUENCE DIAGRAM



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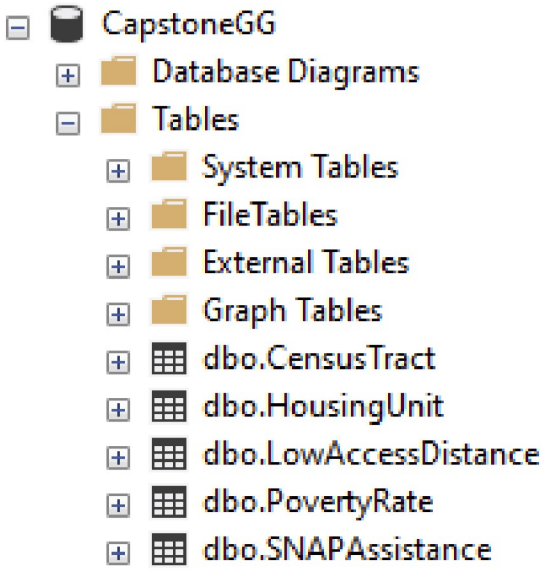
IMPLEMENTATION



AMAZON WEB SERVICES

- Project uploaded and saved on the cloud
- As the world continues to shift to a focus on the cloud, it was important to build our project with this in mind.

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MEDIAN FAMILY INCOME BY COUNTY

New York County has the HIGHEST: $137,917

Bronx County has the LOWEST: $41,946

New York County median family income 3.2 times higher than Bronx County

LOW INCOME TRACTS AND SNAP HOUSEHOLDS PER COUNTY

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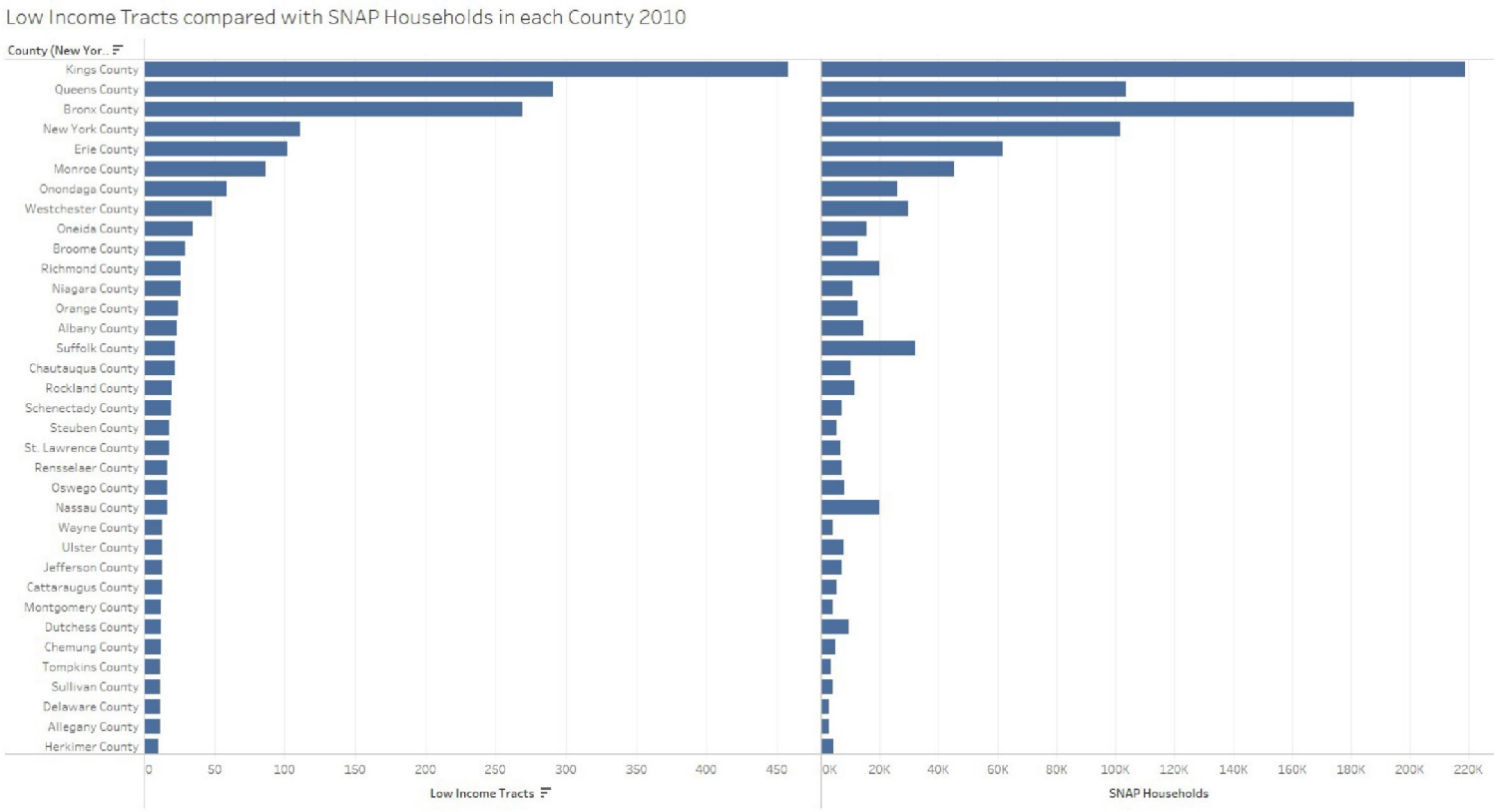
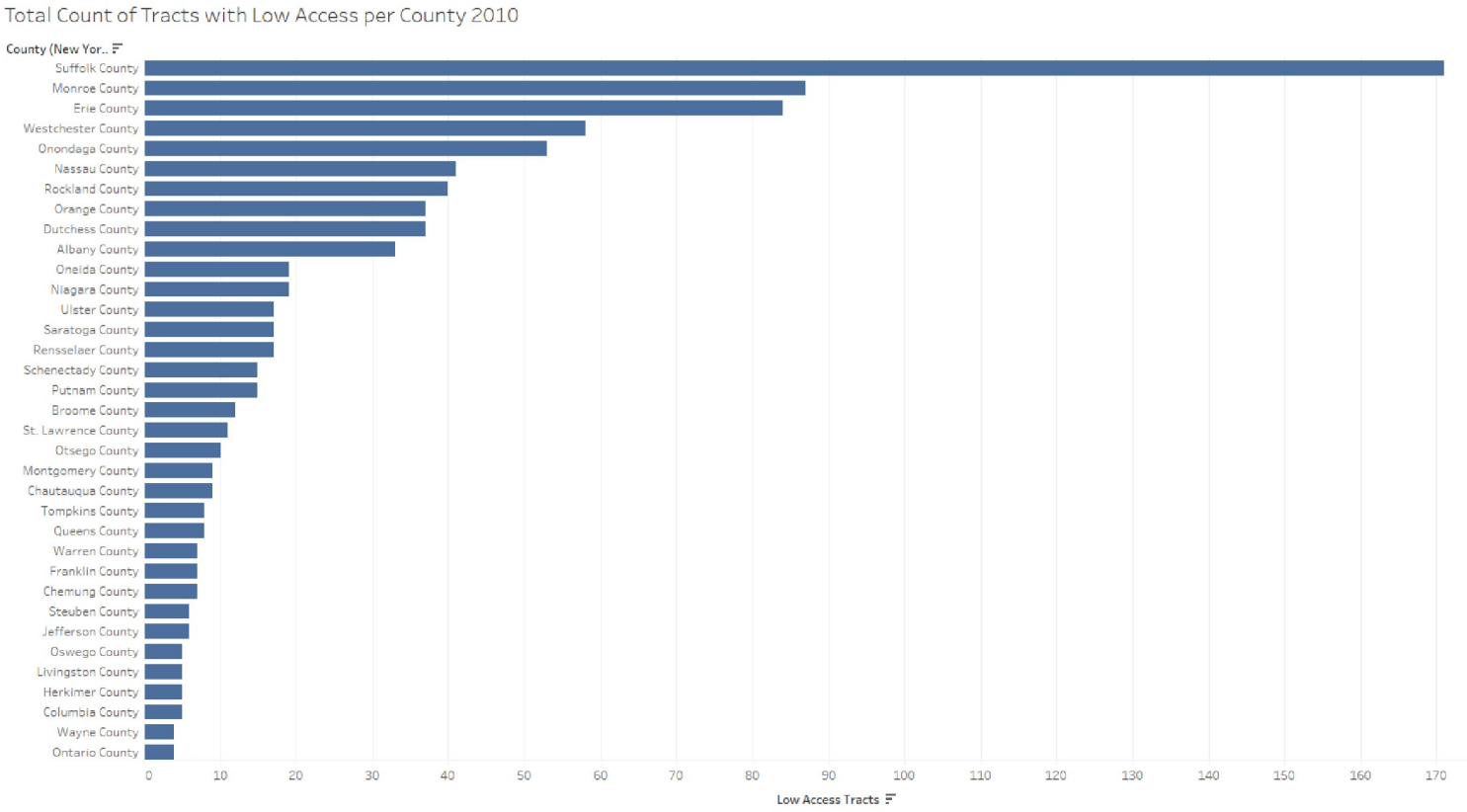


TIP:

- SNAP (Supplemental Nutrition Assistance Program) refers to Food Stamps
- Tract is a subdivision of a county used for census taking

- The counties with the highest number of low income tracts such as Kings, Queens, and Bronx also had the highest numbers of households on SNAP.
- 2,022 of the 4,870 tracts (41.5%) are low income with a total of 1.09 million SNAP households

LOW ACCESS TRACTS



- Suffolk, Monroe, and Erie counties have highest number of tracts with low access.
- These 3 counties combined have 342 tracts that are low access.
- 937 out of the 4,870 tracts in New York are low access tracts (19.2%).

TiP:

- Low Access refers to residents who have a difficult time accessing food due to distance, income, transportation, store availability
- It is considered a Food Desert if the distance to the nearest supermarket is more than a mile for urban areas and more than 10 miles for rural areas

LOW ACCESS AND LOW INCOME TRACTS

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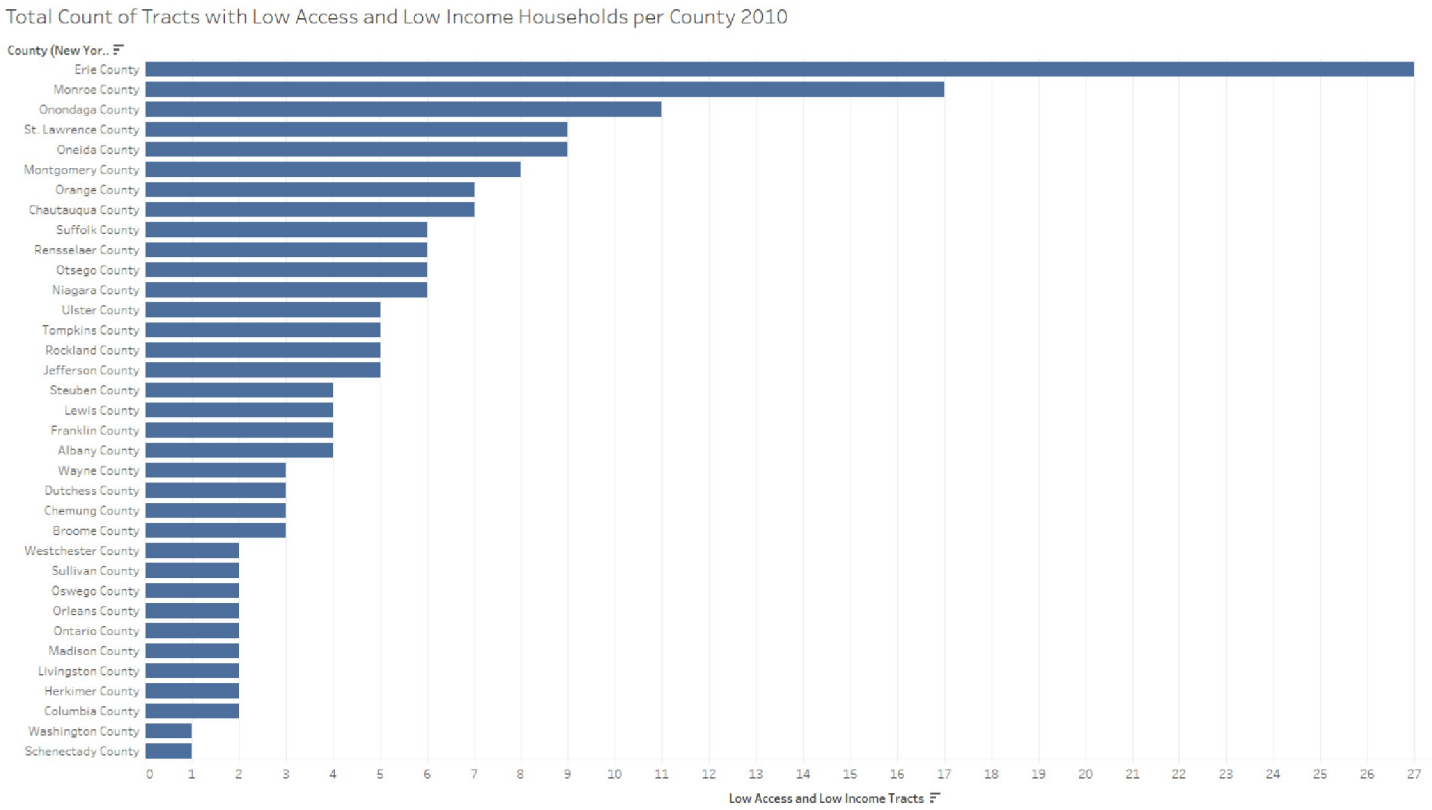
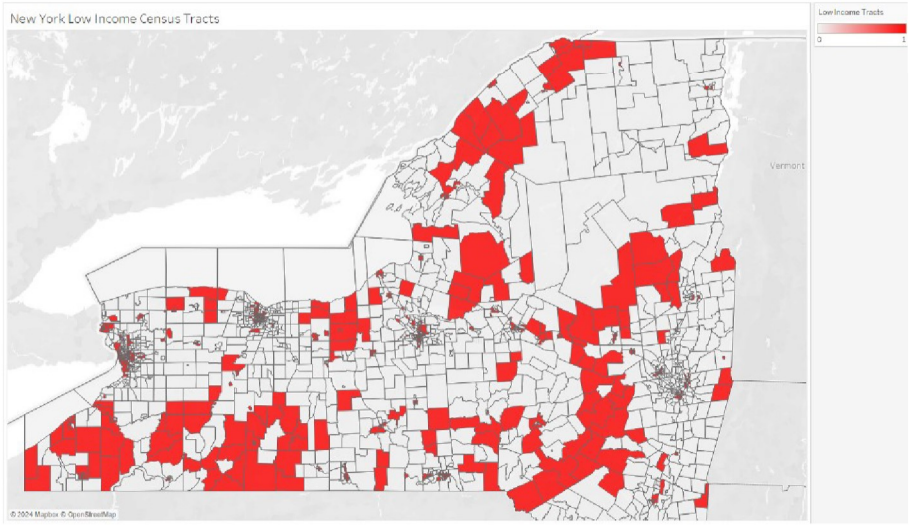


TiP:

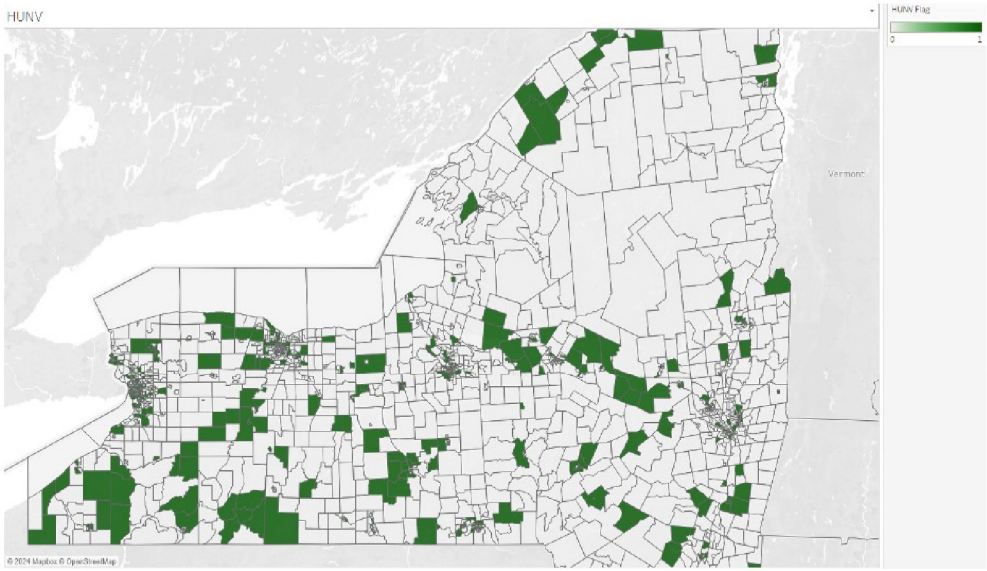
- Low Access refers to residents who have difficulty accessing food due to distance, income, transportation, store availability
- It is considered a Food Desert if the distance to the nearest supermarket is more than a mile for urban areas and more than 10 miles for rural areas

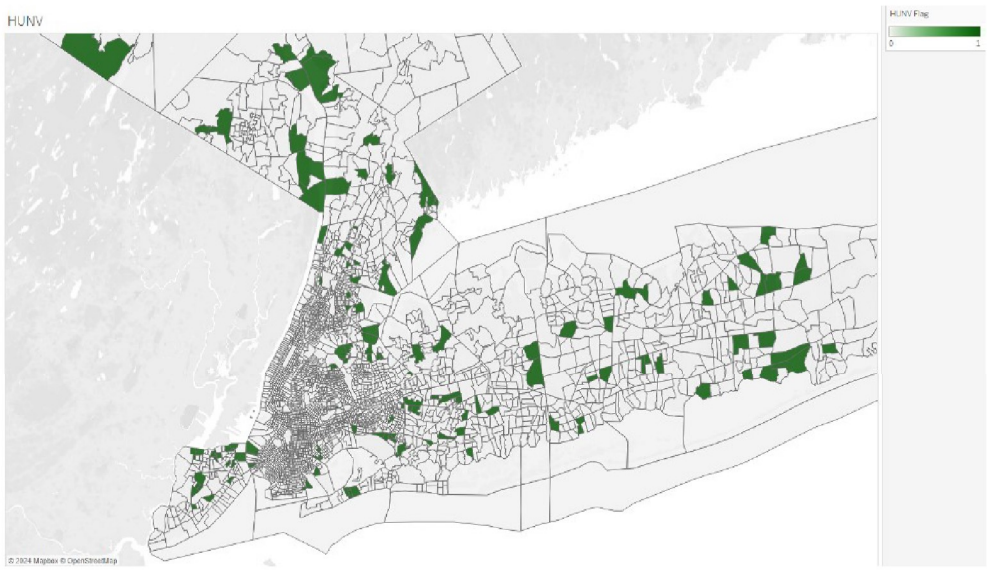
- Erie, Monroe, and Onondaga counties have highest number of tracts with both low access and low income (these 3 counties combined total to 55 low access-low income tracts).
- 194 low access-low income tracts out of the 4,870 tracts in New York (3.98%).

LOW INCOME CENSUS MAP

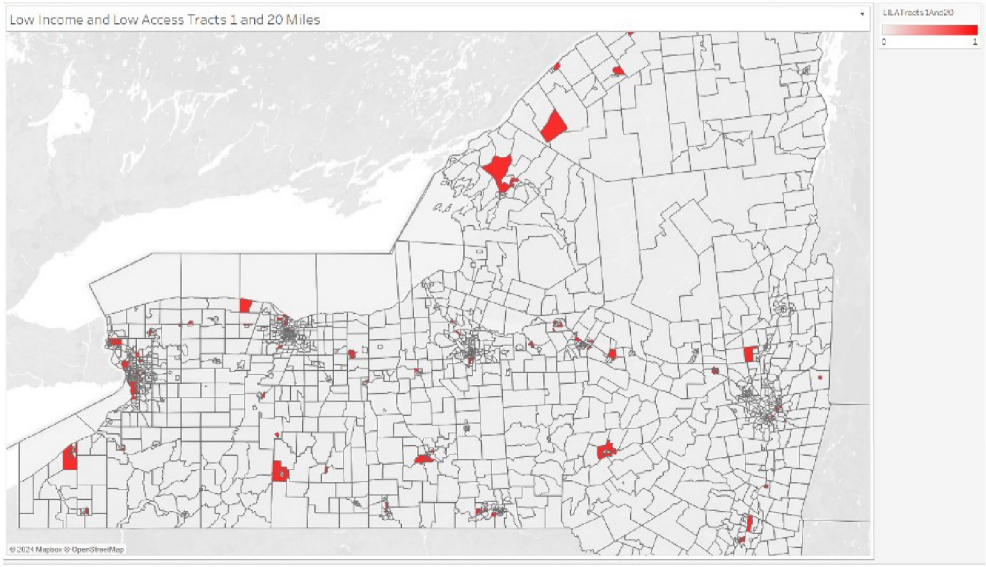


LOW VEHICLE ACCESS MAP

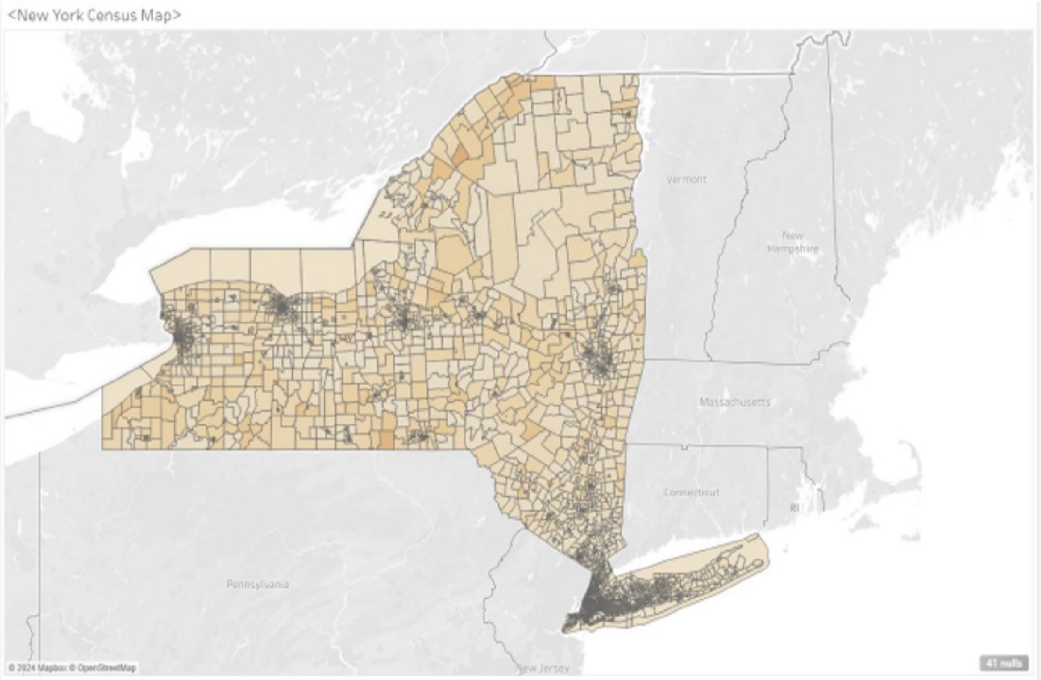


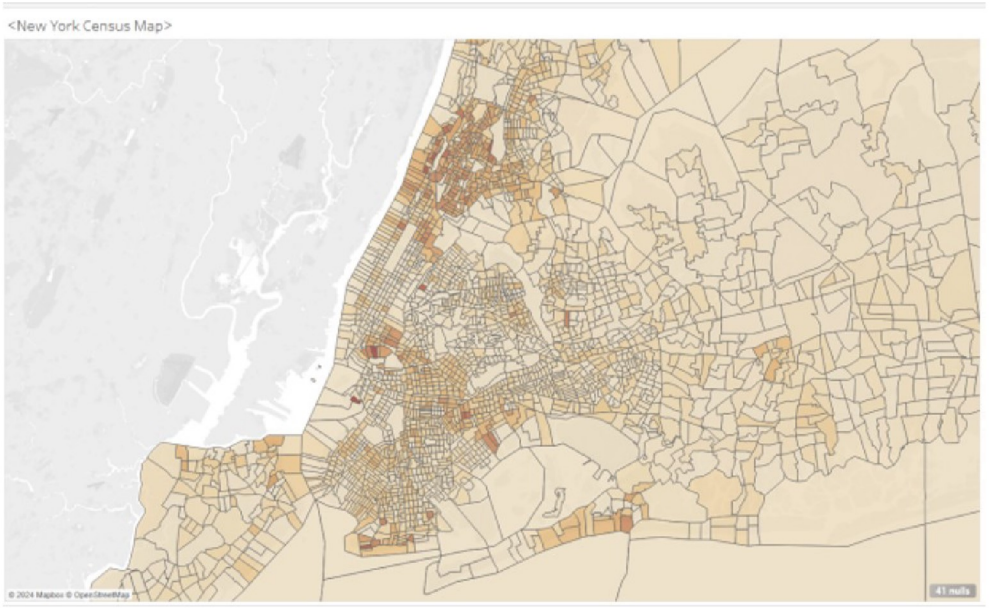


LOW INCOME AND LOW ACCESS



SNAP RECIPIENT MAP





RESULTS AND FINDINGS

- What did the user stories answer?
- What do the dashboards show?
- Where are the largest food deserts?
- What do areas with food deserts have in common?

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CHALLENGES

- What obstacles and challenges did the team face during this project?
- Meetings that worked with everyone's schedules
- Finding a valid data source
- Handling Massive Amounts of Data

KF

CONCLUSION

- Successfully found regions with low food accessibility and high SNAP recipients.
- Mapped the distribution of food benefits and showed the areas where food deserts exist.
- Creation of a dashboard to help stakeholders identify, find, and address food insecurity issues.