TALK TO R

https://abhiplot.shinyapps.io/talk_to_r_shiny/ by Abhishek M Shivalingaiah (LinkedIn,GitHub)

Talk to R is a web application prototype built on statistical analysis tool 'R', web app rendering library 'R shiny', voice recognition java script library 'annyang', graph library 'Plotly' and map rendering library 'Leaflet'.

This web app is currently using dataset having population, median income, educations levels and geo coordinates for all the cities in USA. Web app does analysis on data based on voice commands. The application is hosted on cloud space provided by R Shiny apps (https://www.shinyapps.io) .

Recommended Browser: Google Chrome(Desktop) (Microphone Enabled)

Commands currently implement:

1. **Top N places by income/population/education**

   Example: Top 10 places by income.

   Top 3 places by population.

   Top 24 places by education.

2. **Go to zip code 75252**

   Example: Go to zip code 75252

   Go to zip code 18943

   Go to zip code 75252

3. **Zoom in**

4. **Zoom out**

5. **Color by income/population/education**

   Example: Color by income

   Color by population

6. **Size by income/population/education**

   Example: Size by income

   Size by population

7. **Graph income/population/education by income/population/education**

   Example: Graph income by population

   Graph education by income

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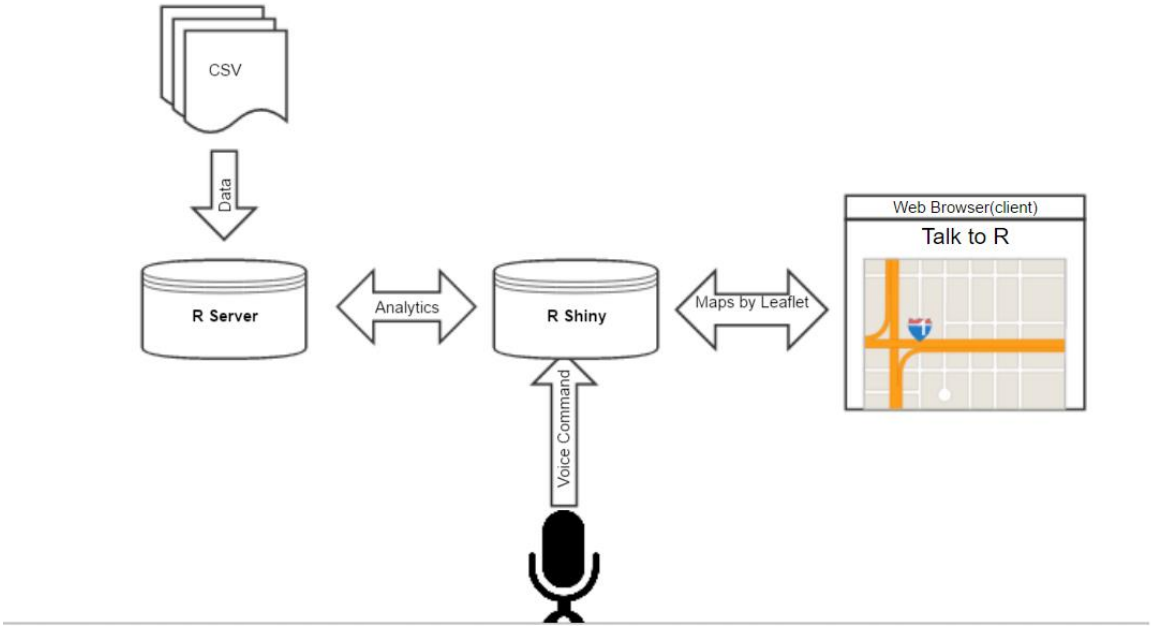
Design



How it Works:

1.Annyan, Leaflet and R Shiny libraries sit on the top of R to render maps, to accept voice commands and to provide web interface.

2.The voice commands are parsed to find the key works like (Zoom, Top 10..)

3.The key words matching predefined criteria would be sent to R server end through R shiny.

4.Analytics will be carried out based on the criteria and results are pushed to Client through the R shiny.

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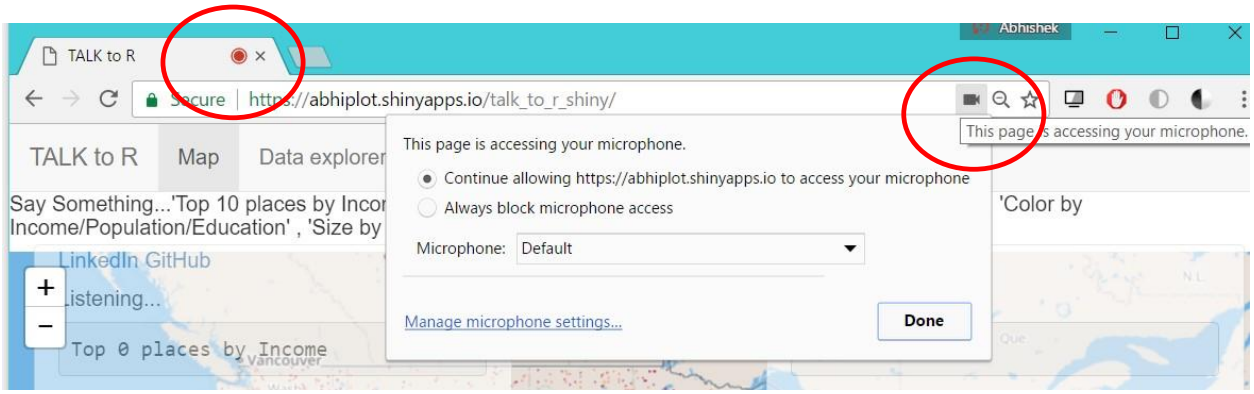
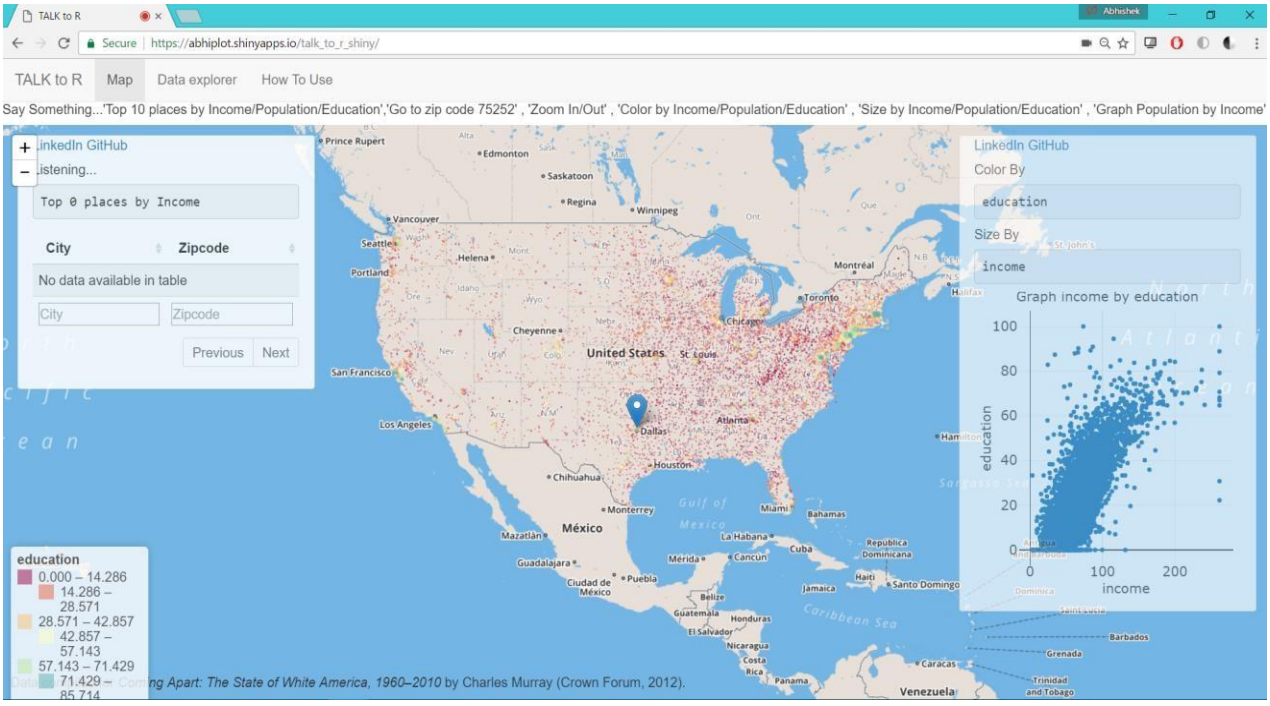
Detailed instructions and screenshots

- Ensure that Microphone is enabled with in chrome browser for the web application



- Web application will load with default features preselected



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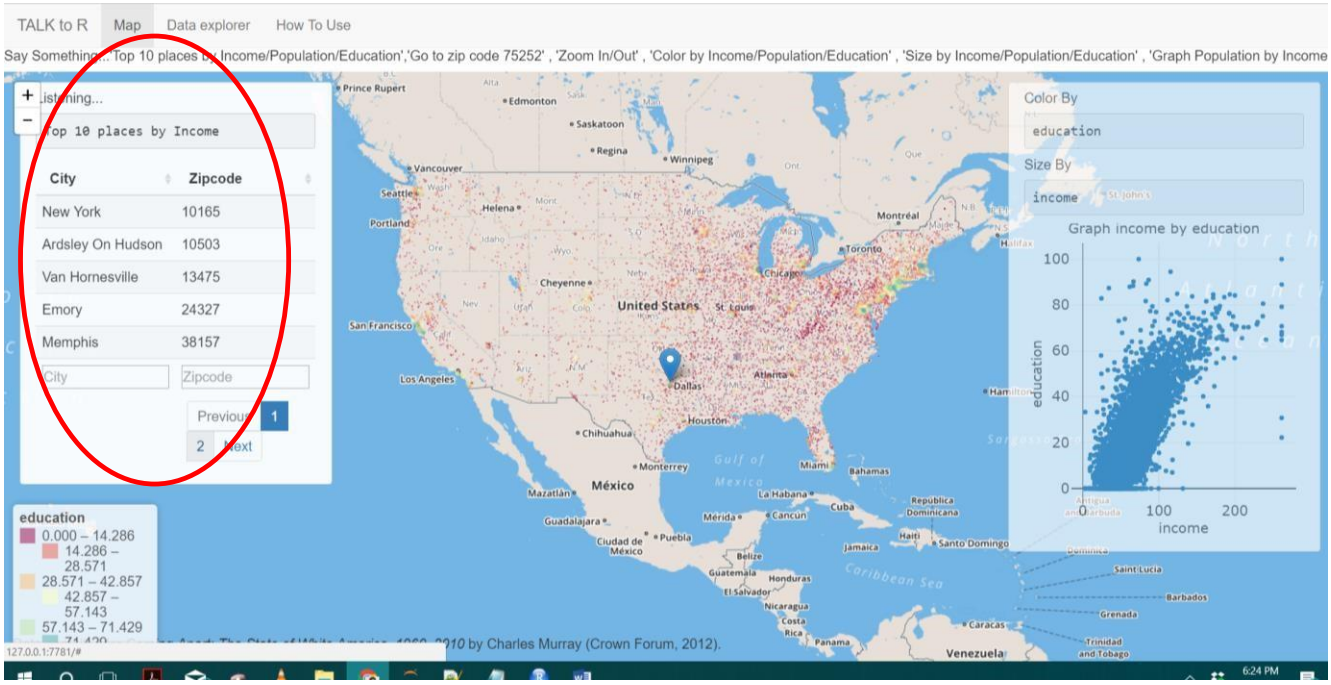
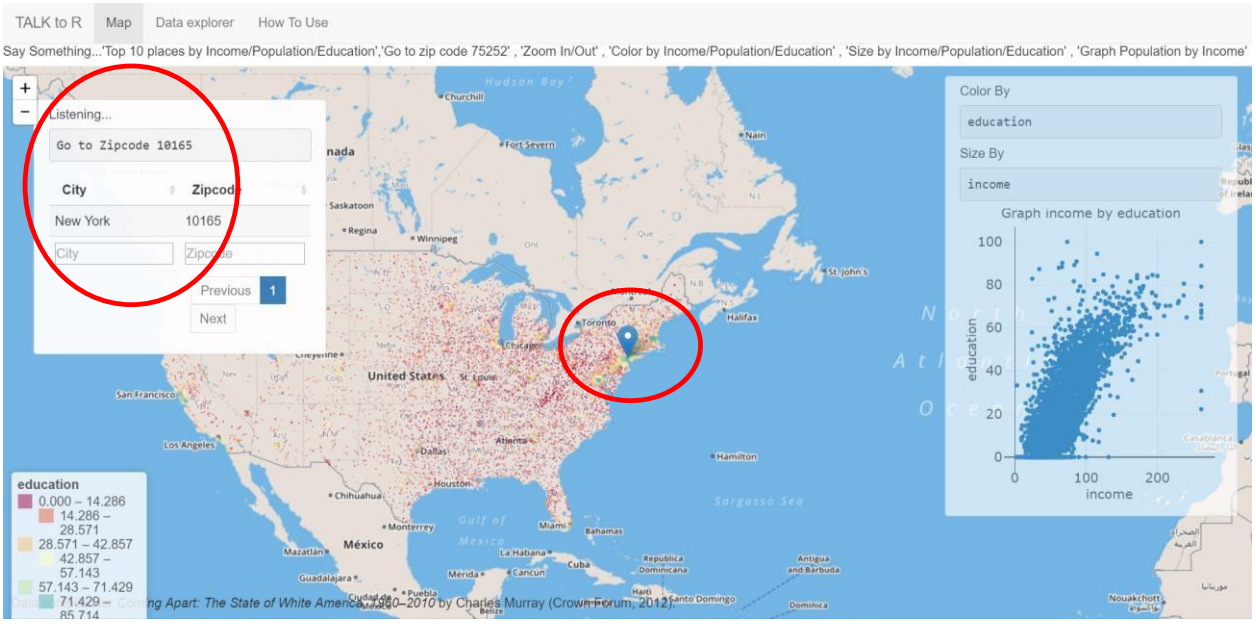
- Issue voice command: “Top 10 places by Income”



- Issue voice Command: “Go to zip code 10165”



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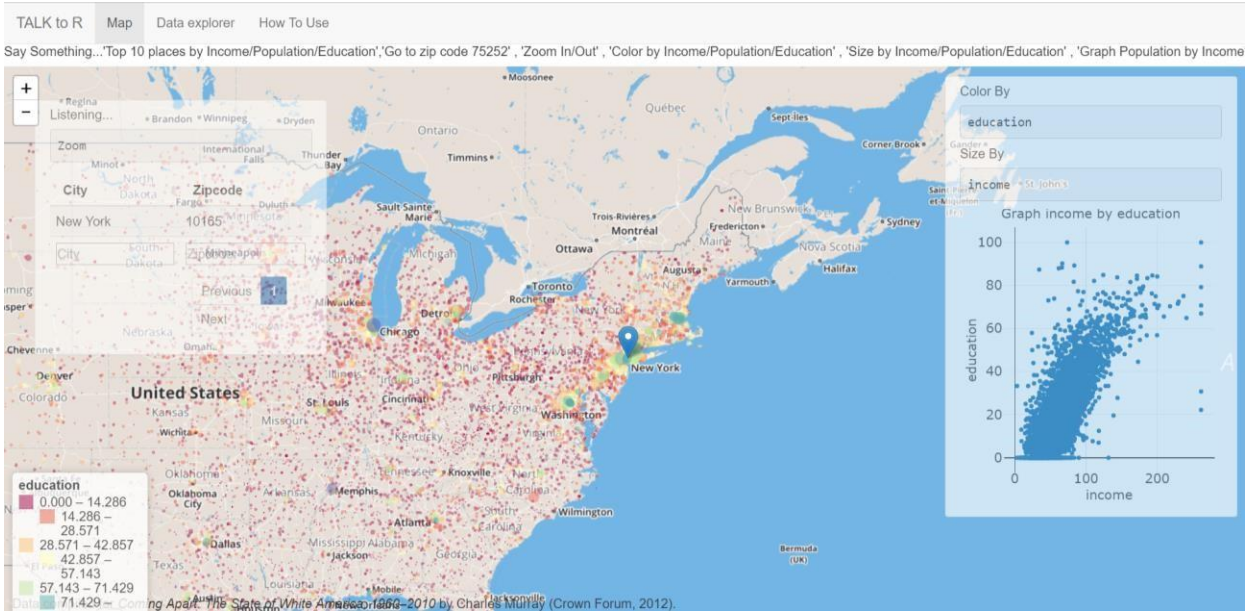
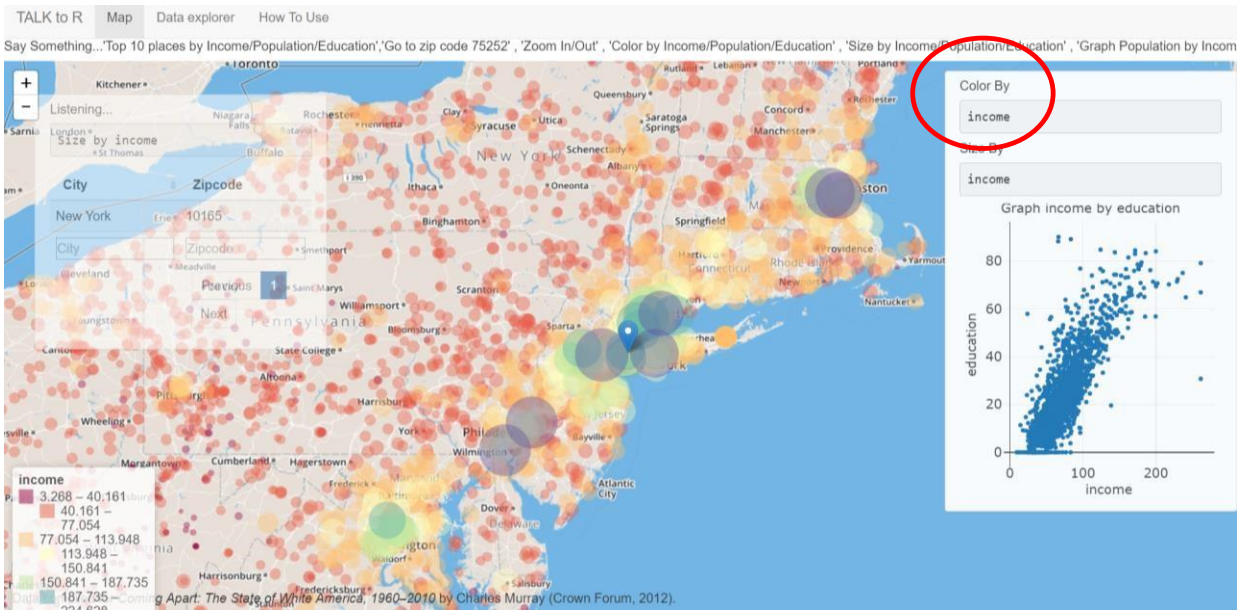
- Issue voice Command: “Zoom In”



- Issue voice command: “Color by income”



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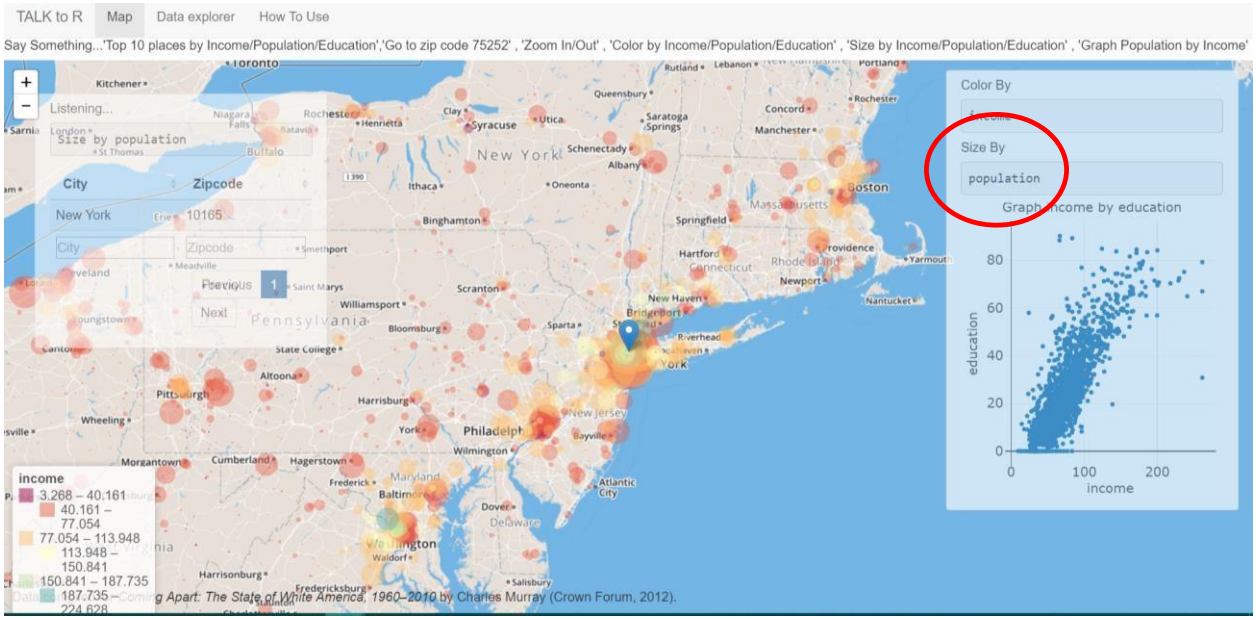
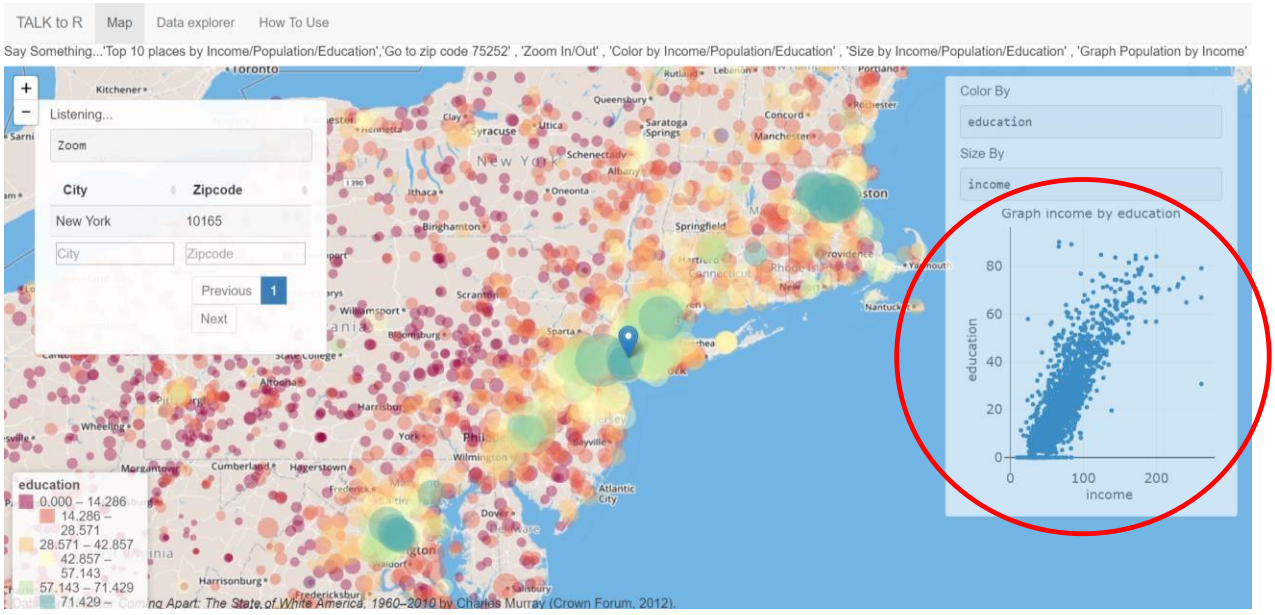
- Issue voice Command: “Size by population”



- Issue voice Command: “Graph income by education”



- Clicking on the bubble would give details about that location

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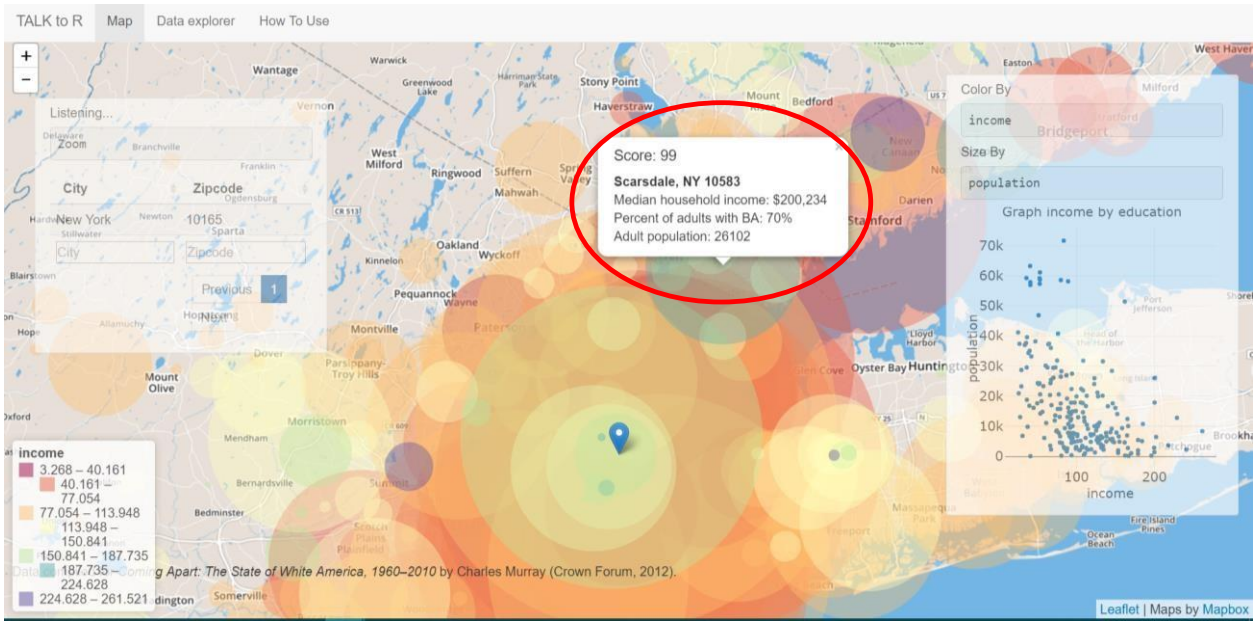
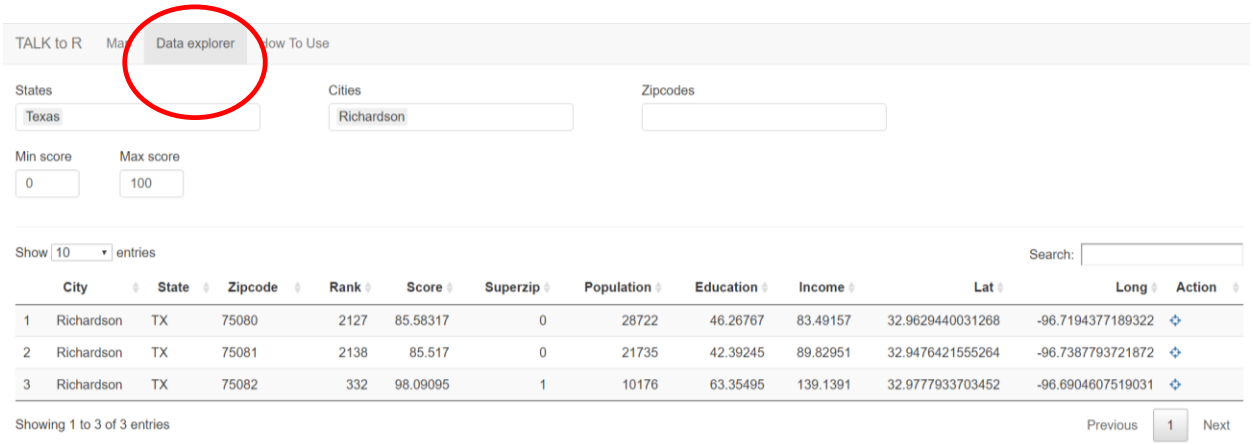


The scatter plot will be re draw to show only the details of places with in the view area (scatter plot changes dynamically, doesn't require voice commands)

- Data Explorer tab can be used to manually filter the detailed records



	City	State	Zipcode	Rank	Score	Superzip	Population	Education	Income	Lat	Long	Action
1	Richardson	TX	75080	2127	85.58317	0	28722	46.26767	83.49157	32.9629440031268	-96.7194377189322	
2	Richardson	TX	75081	2138	85.517	0	21735	42.39245	89.82951	32.9476421555264	-96.7387793721872	
3	Richardson	TX	75082	332	98.09095	1	10176	63.35495	139.1391	32.9777933703452	-96.6904607519031	

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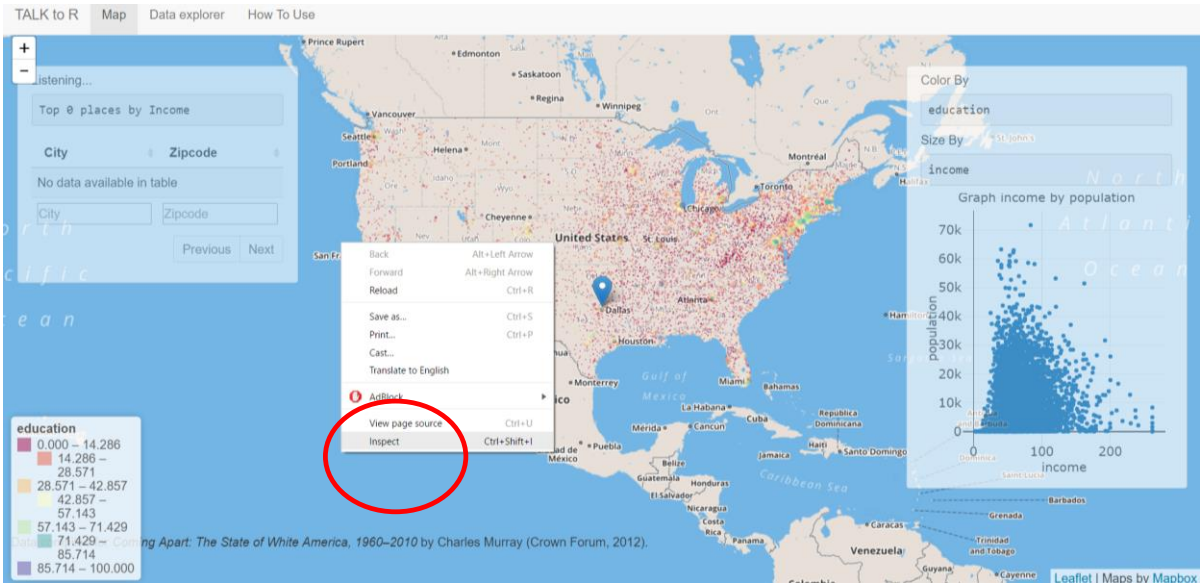
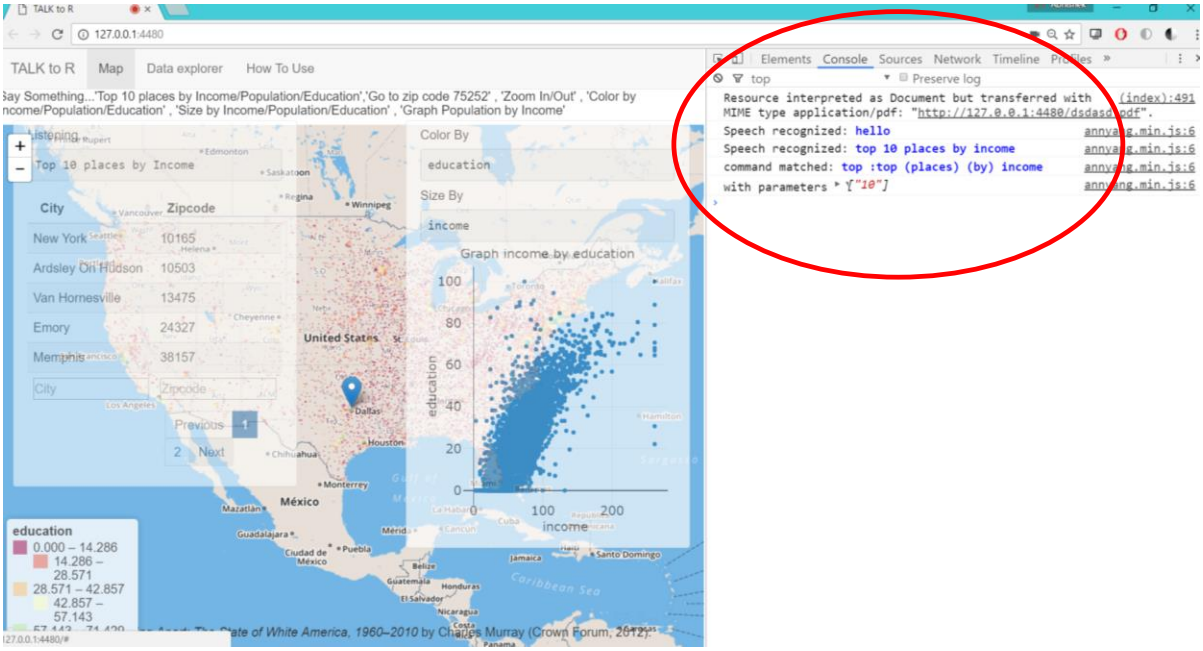
Still facing issues!!

Right click on the screen and select '**Inspect**'



Within the console, if the microphone is enabled then all the voice commands issued should be visible. If the issued voice commands aren't visible, then try speaking loudly with normal speed and check if microphone is enabled for this web app within the chrome and computer.



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Applications of voice enabled R

In this prototype, I have demonstrated how data can be easily analyzed with voice commands over the web app at free of cost using open source libraries. Similarly, applications can be built to carry out data crunching on big data to find advance level statistics and insights.

Applications can be built for,

- Enabling Decision makers (CEOs, CTOs, Managers…) to easily analyze data
- Debugging issues based on real time/historic data
- Customer Churn Modeling and Analysis(Telecom/Retail)
- Credit Risk Modeling & Analysis (Banking)
- Demand Forecasting (Marketing/Retail)
- Market Basket Analysis (Marketing/Retail)
- Marketing Mix Modeling (Marketing)
- Dashboard & Report generation.

Useful References:

Talk to R Code on Github:	https://github.com/abhishekms1047/Talk-to-R-Shiny
R shiny web framework:	https://shiny.rstudio.com/
Annyang Voice recognition:	https://www.talater.com/annyang/
R studio:	https://www.rstudio.com/products/RStudio/
Interactive maps:	http://leafletjs.com/