

Obesity Epidemic in USA

Name: MD. Saadman Hossain

Student id: 31043313

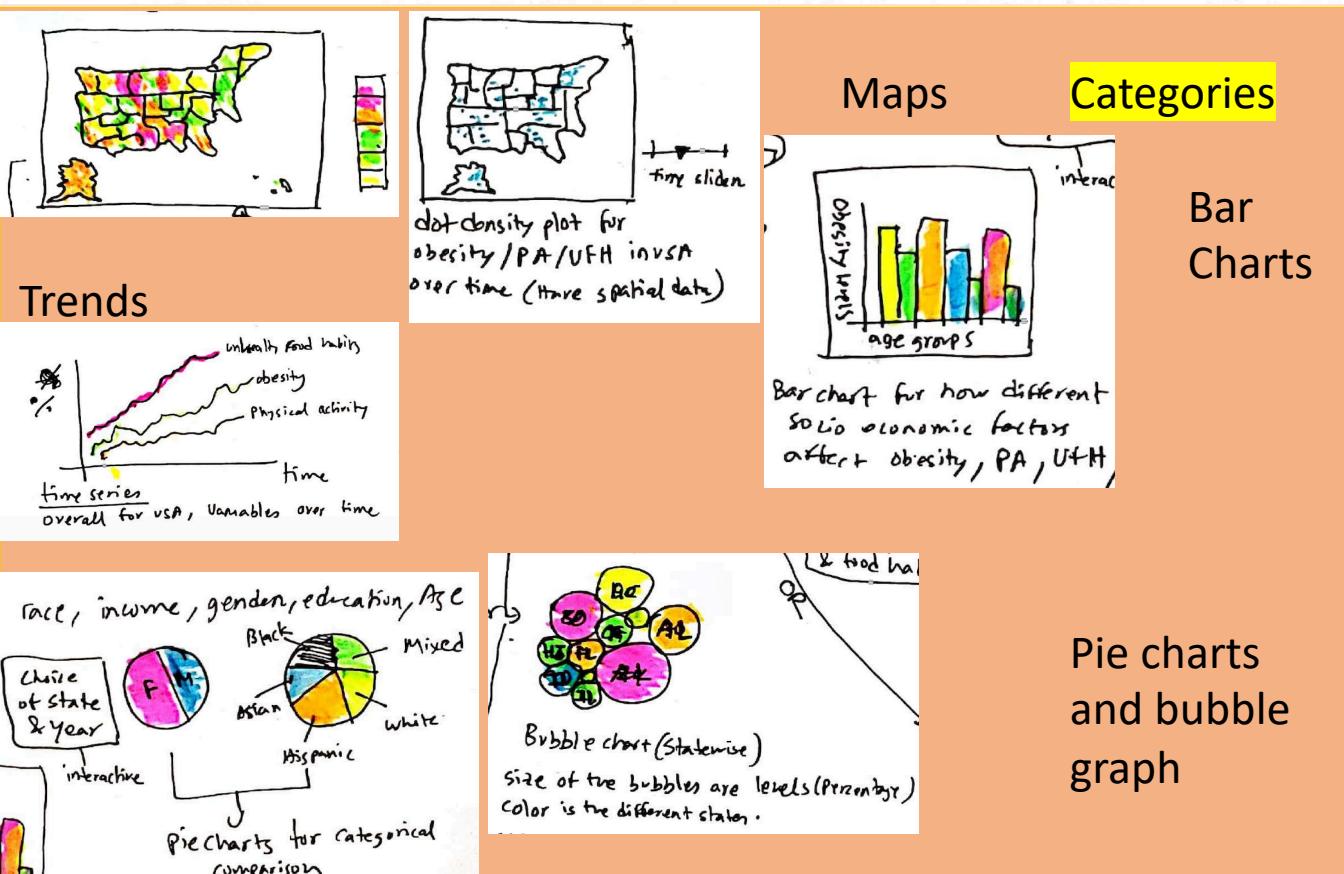
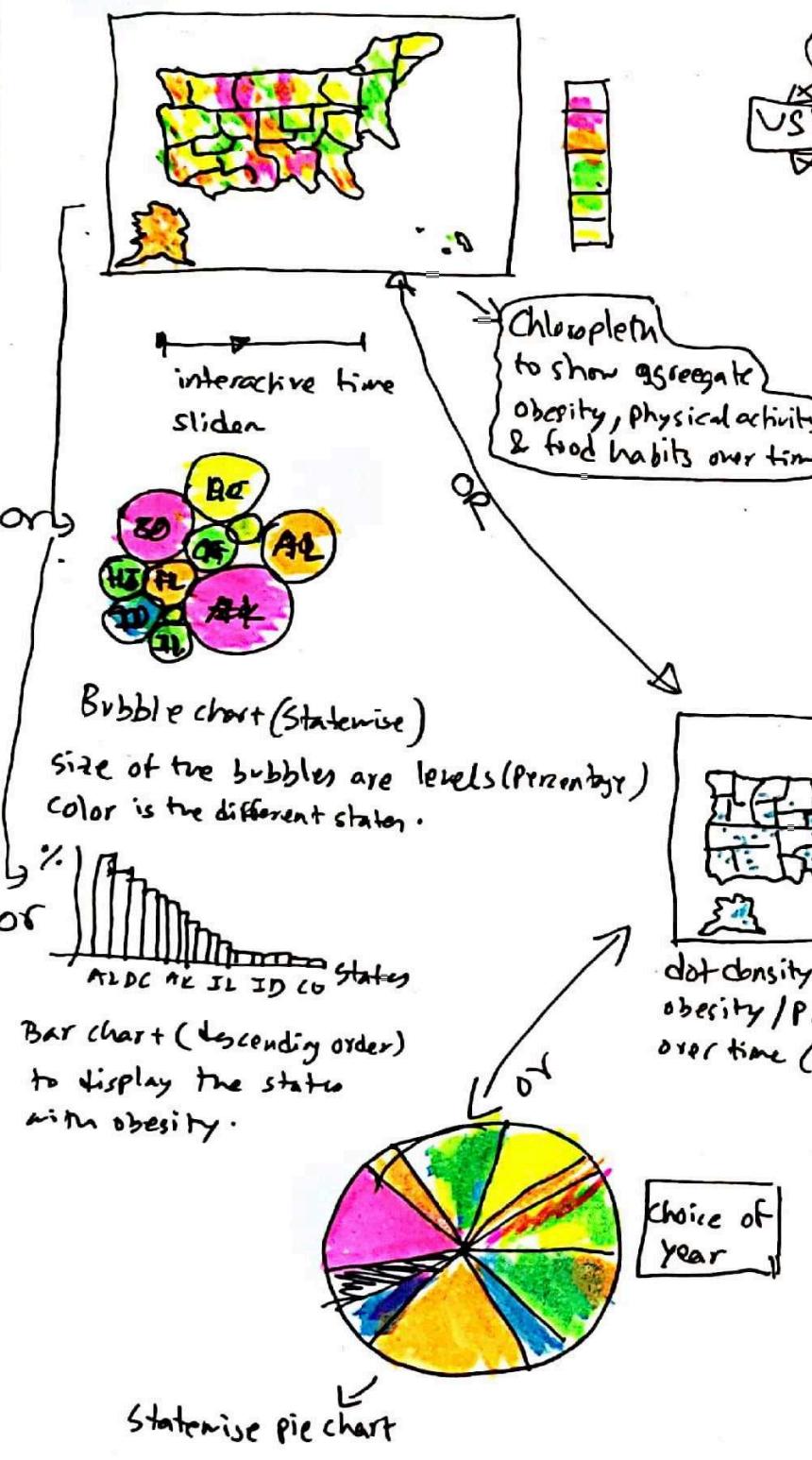
Aims and motivation:

This project aims to analyse and visualise the obesity epidemic in USA to find trends and relations. Particular points of interest include states wise analysis of obesity data, causes of obesity in the US population and insights towards reducing this ever-growing socio- economic problem by analysing the behavioural risk factors associated with obesity.

The idea sheet

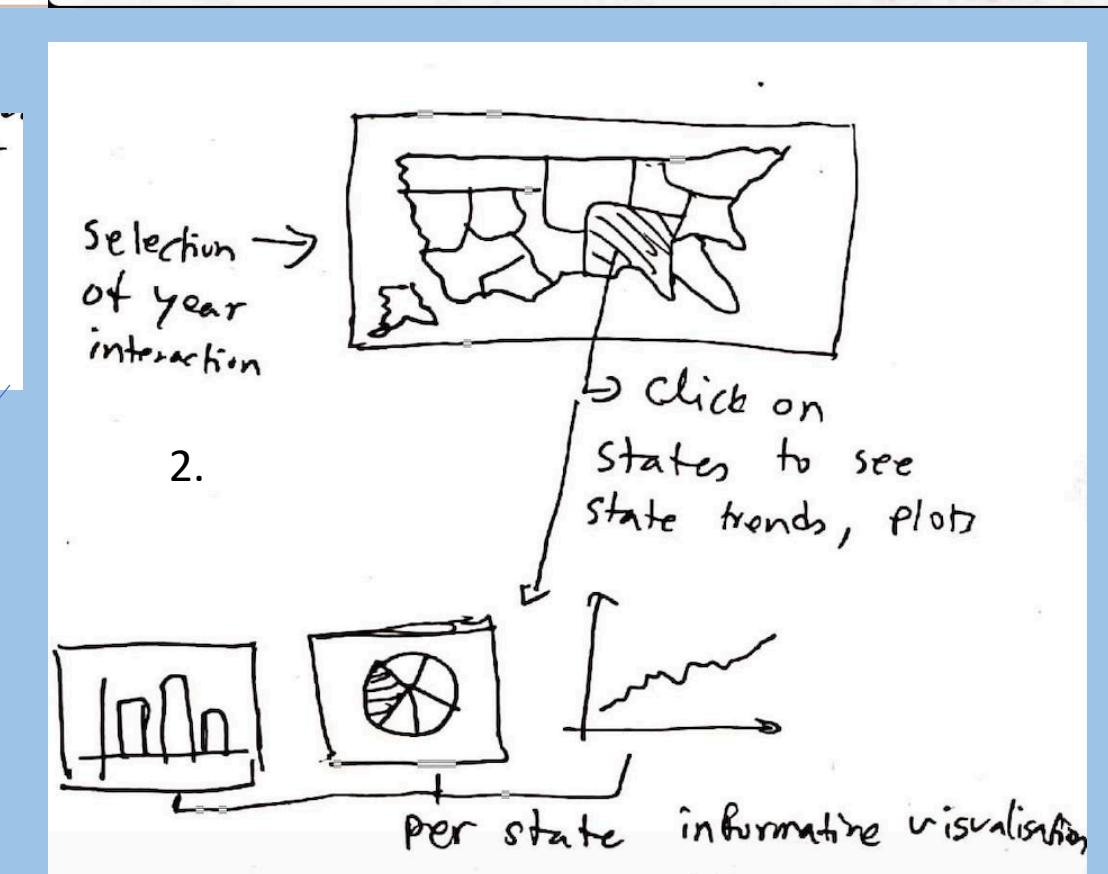
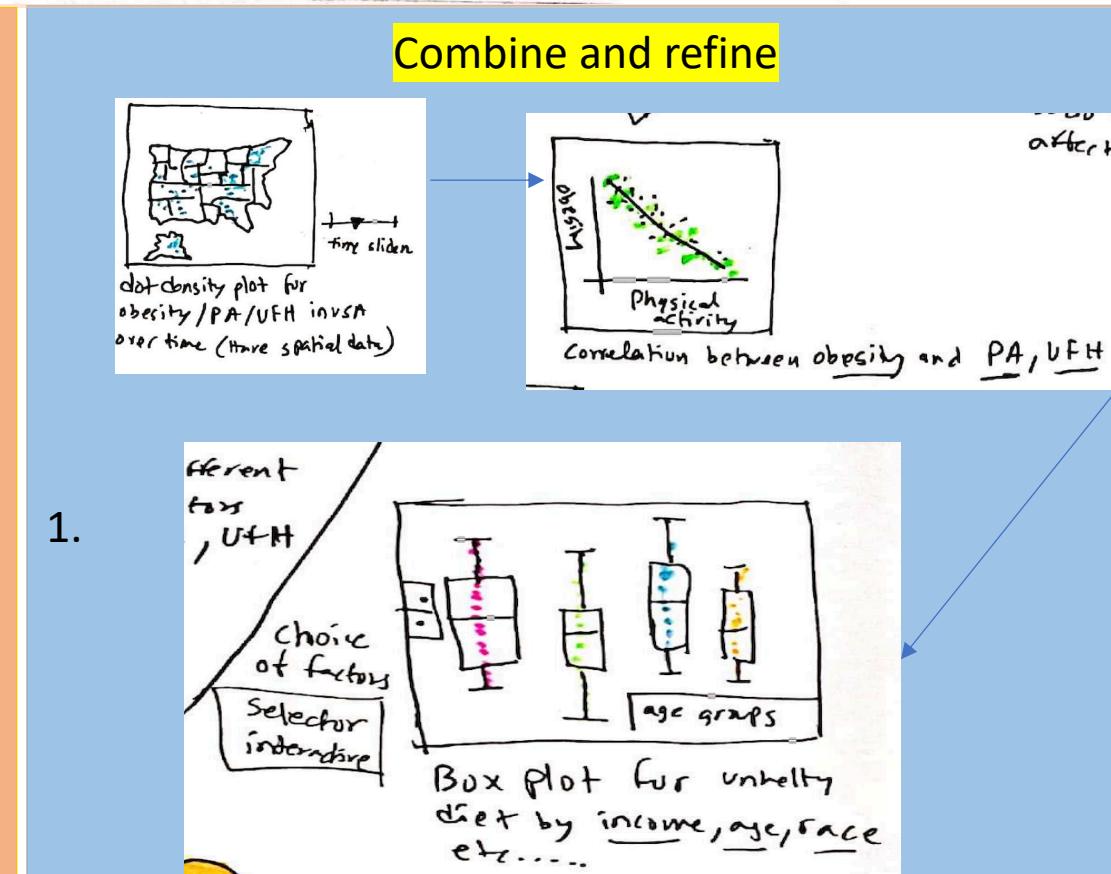
OBESITY EPIDEMIC IN USA

Brainstorming



Filter

Chloropleth, dot density, Bubble chart are more appealing & informative, so Bar chart & pie chart can be removed.



first Design

Information

Title : FDS sheet 2 (1st Design)

Author: MD.Saadman Hossain

Data: CDC obesity data

Date : 03:06:2020

Operations:

- Layout is a chloropleth map displaying intensity/larg percentages.
- Drop down selection of obesity, physical activity & Unhealthy food habits percentages.
- Interactive time slide to show how percentages in each state changes over time.
- Click on states to display individual state information. (Focus)
- We have a trend line appearing which shows particular States percentage levels over time
- selection for ~~for~~ socio-economic factor which shows Bar graphs per state. (age, race, gender, education, income)

Pros

~~relatively easy implementation.~~

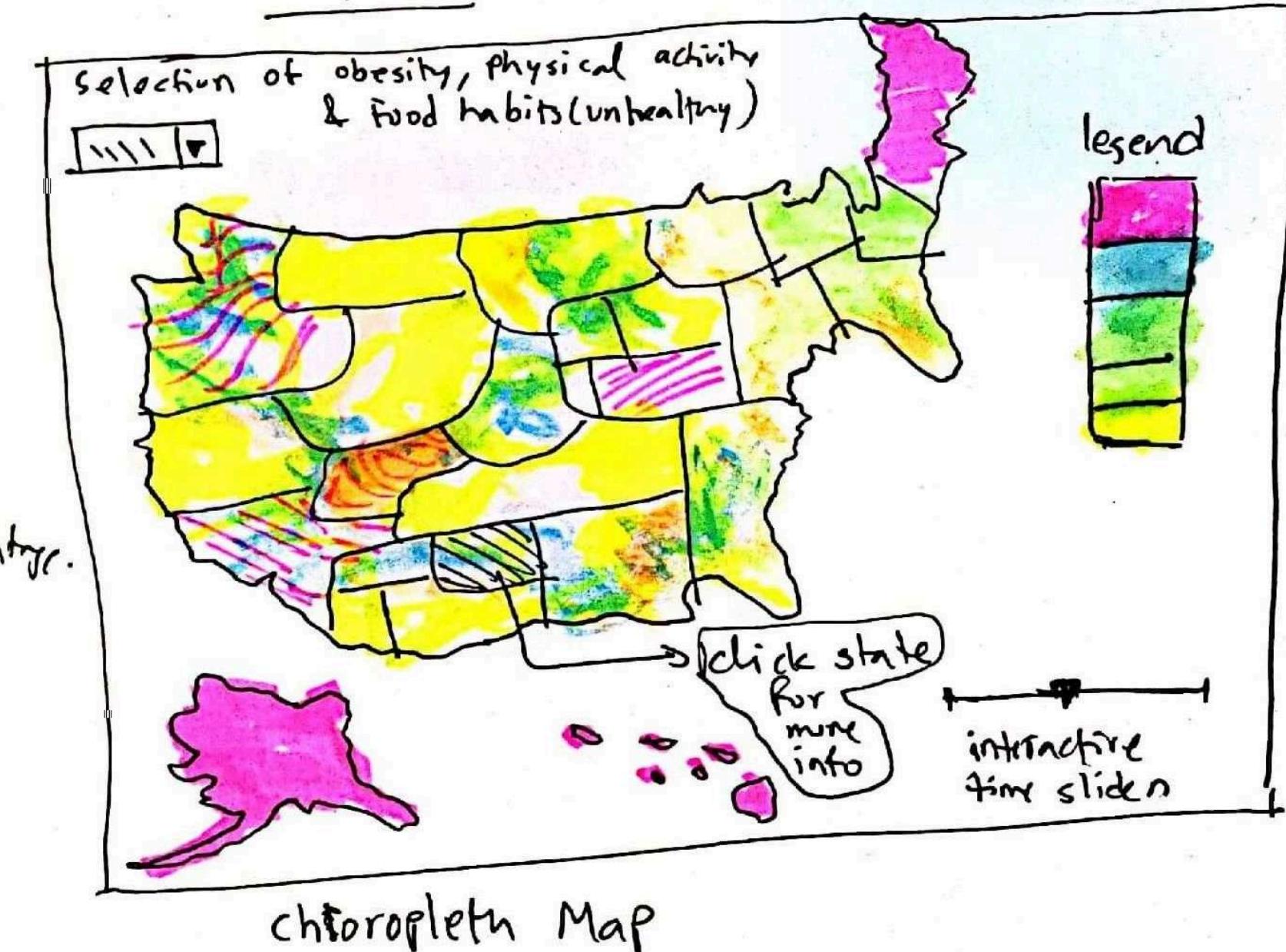
Can see intensity of obesity levels (darker states are more obesity).

Can see How activity levels unhealthy food habits affect obesity

Cons

- don't answer all questions
- Harder implementation
- don't show correlations of different factors with obesity, PA & UFF.

Layout



Focus

→ drop down to select the variable for which to see the bar graph



→ drop down the

Trend line →
for % over time



Second design

Information

Title: FDS sheet 3(2nd Design)
 Author: MD.Saadman Hossain
 Data: CDC Obesity Data
 Date: 07.06.2020

Operations:

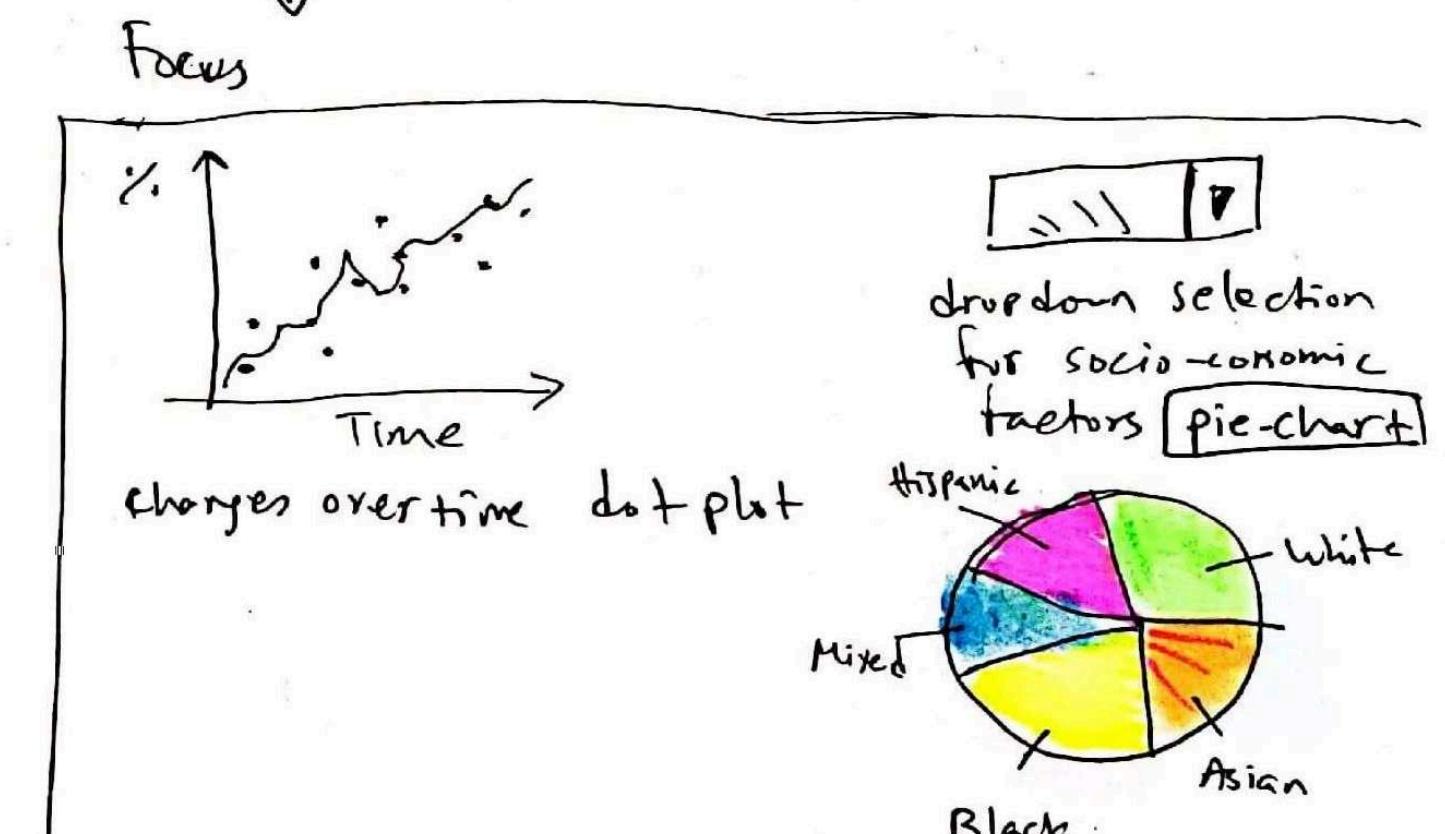
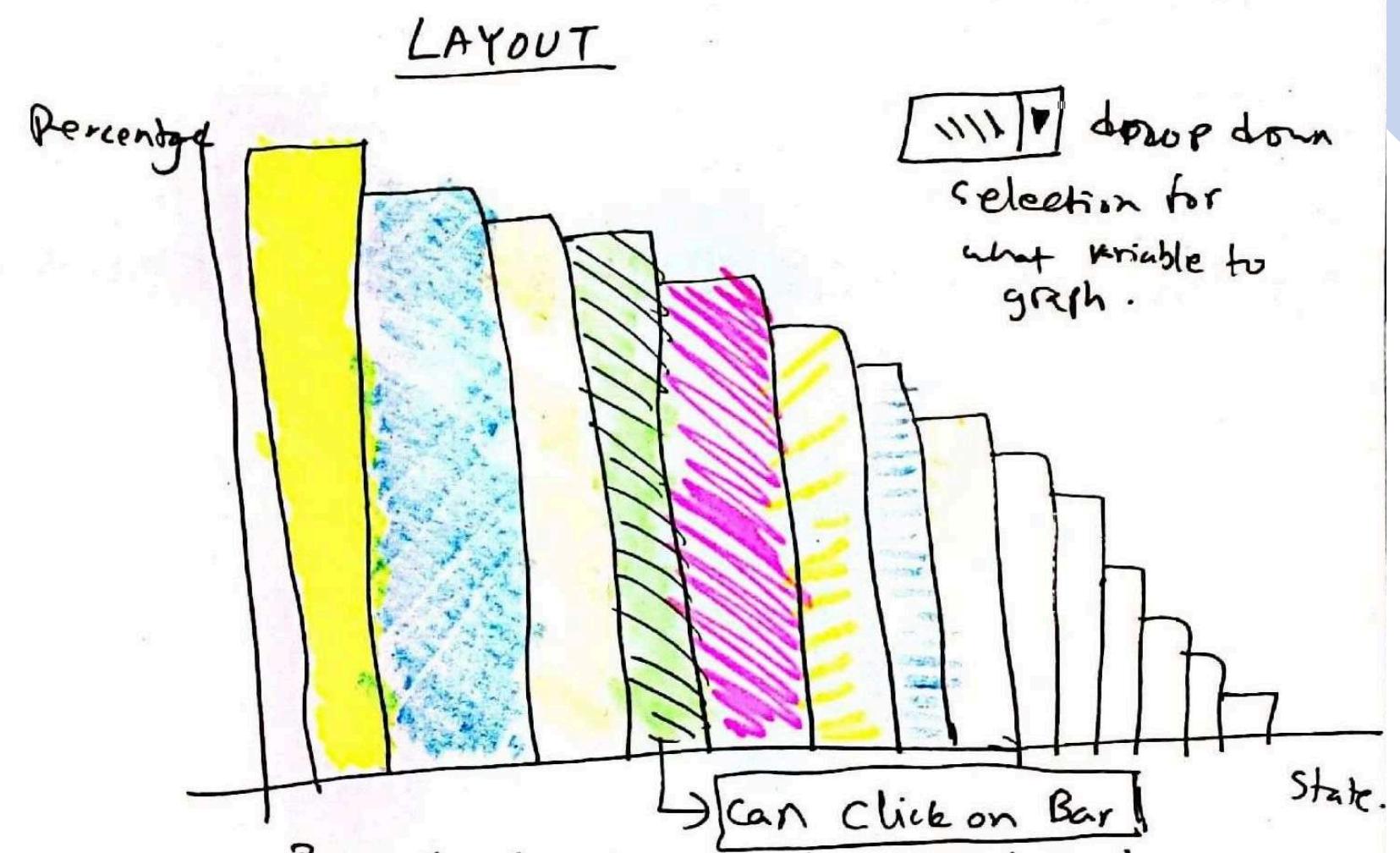
- Bar chart for obesity ; PA , UFH from Most to least. Interactive selection of what variable to graph.
- can click on Bar to display more info in the focus.
- default shows a dot plot , percentages over time.
- drop down selection for socio economic factors . i.e if ~~obesity~~ obesity is chosen & race is chosen , it will show pie-chart of obesity by race .

Pros

- easier implementation
- can see clearly the top states.
- pie-chart breakdown of a socio economic factor gives good

Cons

- doesn't show correlation
- doesn't answer why rates levels vary by gender.



Third design

Information:

Title: FDS sheet of (3rd Design)
 Author: Md.Sandman Hossain
 Data: CDC obesity data
 Date: 07.06.2020

operation

- Select obesity, Unhealthy food habits, Physical activity to display Bubble chart
- Drop down to select state, default produces scatter plot (drop down to select X and Y variables) which shows correlation of var X against var Y. So for ie. unhealthy food habits vs obesity.
- Drop down to choose socio-economic factor, produces breakdown for each state. i.e. distributions of different age groups for a particular state.

Pros

- + implementation may be easier
- + Boxplots give us a good idea how each factor is broken down

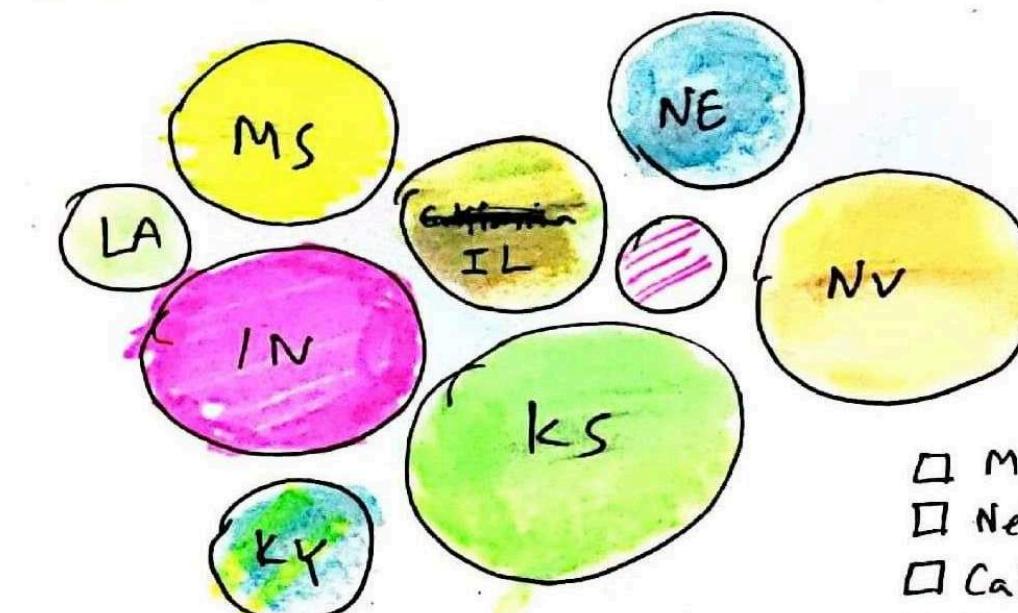
Cons

- doesn't answer all questions.

Layout

→ drop down to select variable.

Bubble chart



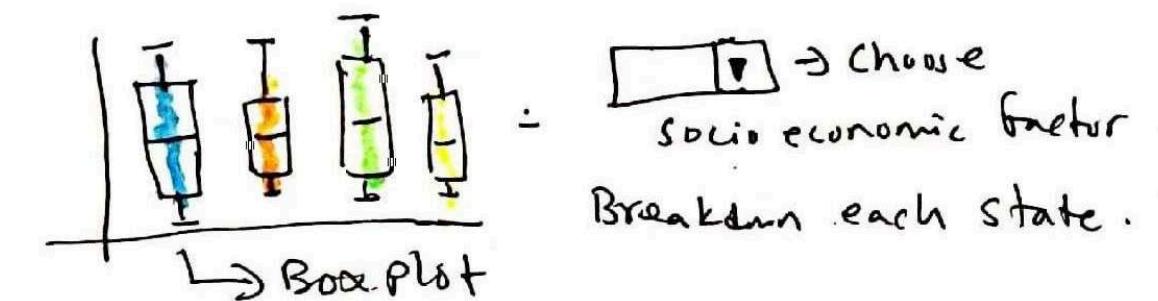
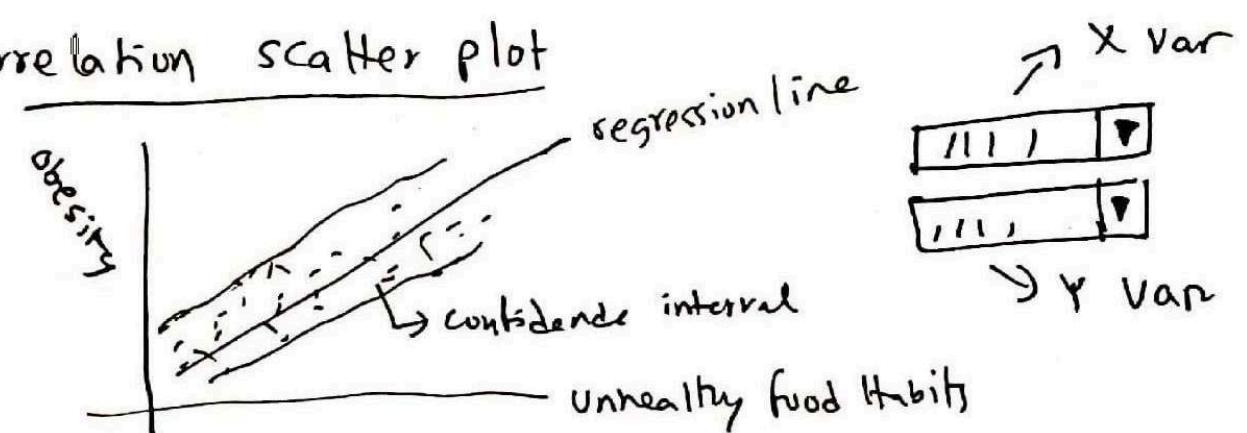
- Michigan
- Nevada
- California
- Montana
- Nebraska
- New York

- Bubble size is percentage
- Bubble color is state

Focus

→ ~~click~~ drop down to select state.

Correlation scatter plot



Realisation

Information:

Title: PDS sheet 5 (final design)
 Author: MD.Saadman Hossain
 Data: CDC obesity data
 Date: 07.06.2020

Description:

- choropleth map with an interactive time slider to display change over the years. selection of variable.
- clickable states to toggle further visualisations.
- dropdown to select socio-economic factor to create pie-chart.
- trend line will show change of the variable over time.
- correlation scatter plot with interactive variable selection .ie. Food Habit vs obesity.

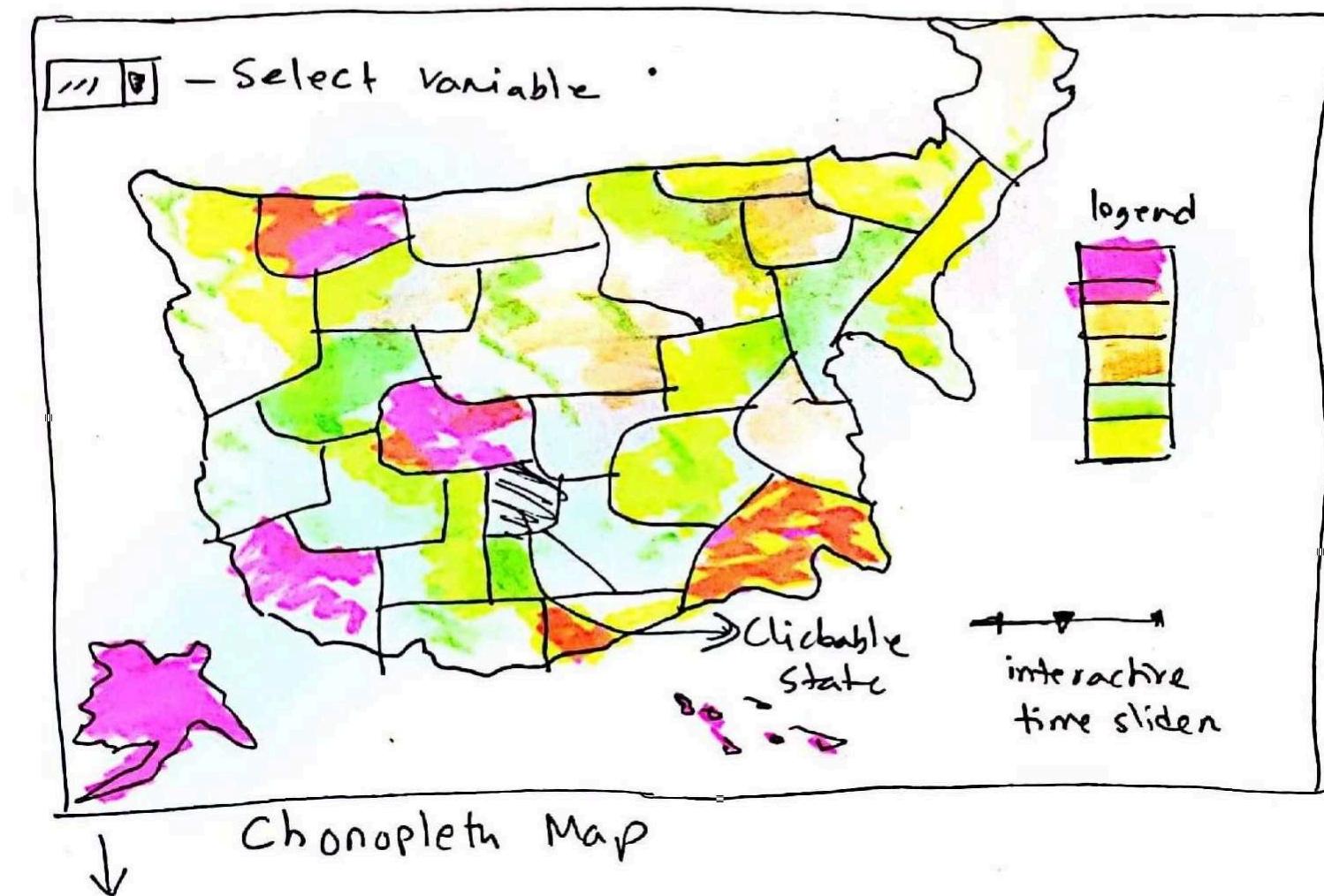
Software Requirements:

R , R packages, shiny for interactive viz, maybe D3.

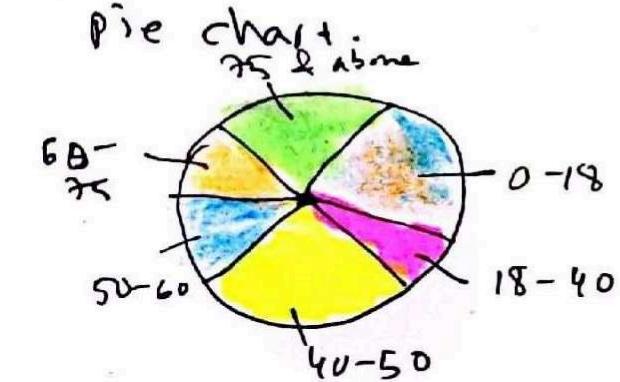
Time requirement : 1 week

<u>Pros</u>	<u>Cons</u>
<ul style="list-style-type: none"> - Answer almost all questions - Finished product should be decent. 	<ul style="list-style-type: none"> - bit harder to implement

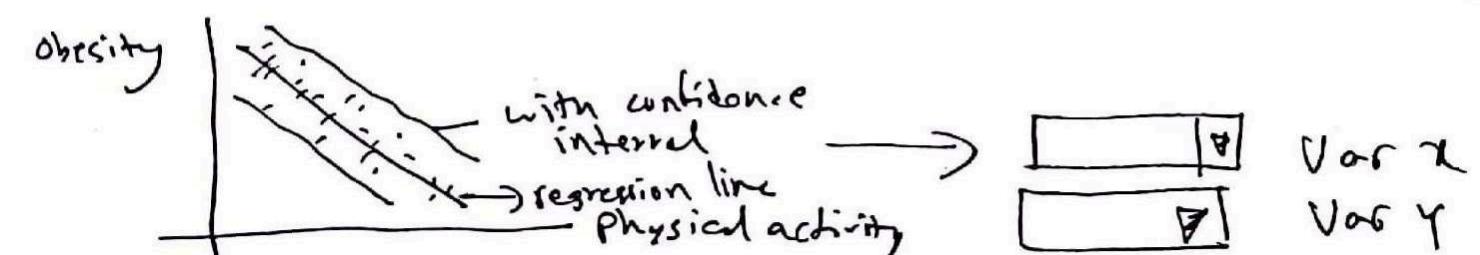
Layout



→ dropdown to select socio-economic factor



Correlation scatterplot



Trend line for variable over time for a state