

General feedback:

- Streamline the number of visualizations
- Be mindful of the number of slicers overall
- Make sure all graphs are clearly labeled
- Distinguish different categories with colors

Original	Revised																											
<p>1. What types of business owners (gender, race, geography) received Paycheck Protection Plan loans?</p> <p># Loans Received based of Race & Sex</p> <p>Bar graph of Demographics.</p> <table border="1"> <caption>Data for Original Bar Graph</caption> <thead> <tr> <th>Race Demographic</th> <th>Male (# of Loans)</th> <th>Female (# of Loans)</th> </tr> </thead> <tbody> <tr> <td>Category 1</td> <td>10</td> <td>12</td> </tr> <tr> <td>Category 2</td> <td>15</td> <td>18</td> </tr> <tr> <td>Category 3</td> <td>12</td> <td>10</td> </tr> <tr> <td>Category 4</td> <td>18</td> <td>20</td> </tr> </tbody> </table> <p>Race demographic</p>	Race Demographic	Male (# of Loans)	Female (# of Loans)	Category 1	10	12	Category 2	15	18	Category 3	12	10	Category 4	18	20	<p>1.1) What types of business owners, by race & sex, received Paycheck Protection Program loans?</p> <p>Percent of Loans Received by Race and Sex</p> <table border="1"> <caption>Data for Revised Bar Graph</caption> <thead> <tr> <th>Race</th> <th>Male (%)</th> <th>Female (%)</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>50</td> <td>20</td> </tr> <tr> <td>Y</td> <td>30</td> <td>5</td> </tr> <tr> <td>Z</td> <td>10</td> <td>40</td> </tr> </tbody> </table> <p>Percent of Loans Received</p> <p>Race</p>	Race	Male (%)	Female (%)	X	50	20	Y	30	5	Z	10	40
Race Demographic	Male (# of Loans)	Female (# of Loans)																										
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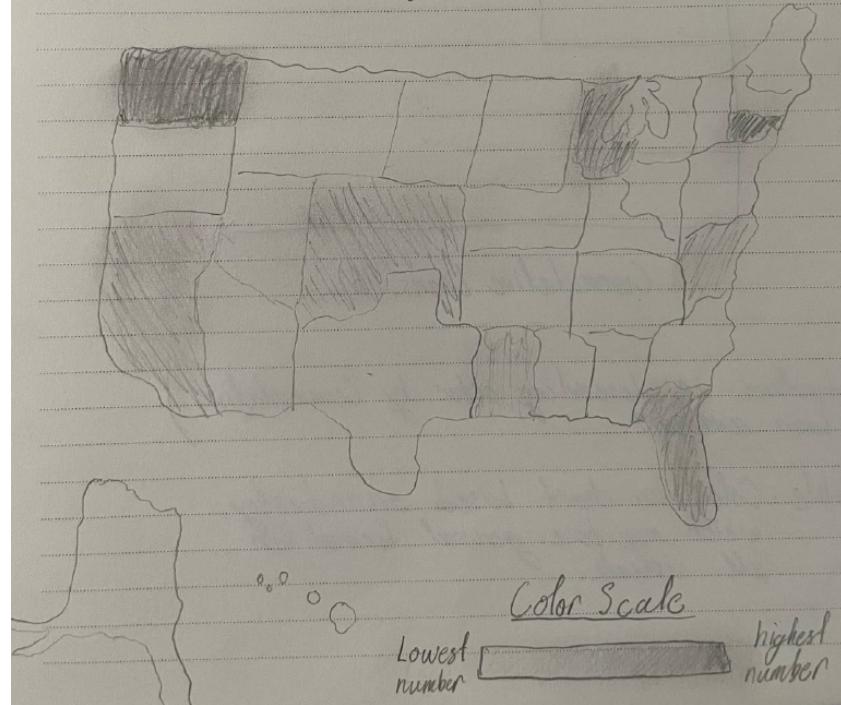
Feedback:

- Make sure formatting Sex is consistent across all visuals.
- Consider the percentage of the number of loans to show a more digestible understanding of how the quantity of loans relate.

Revisions:

- Changed bars in graph to be based on percentage of total loans received rather than number of loans received in order to better illustrate how loans are distributed.

Loans Received Geographically



Feedback:

- Consider scaling data to percentages to show how states relate to each other without population skewing
- Make heatmap coloring consistent for all maps

1.2) What type of business owners, by state, received Paycheck Protection Program loans?

Percentage of Loans by State (Heatmap)

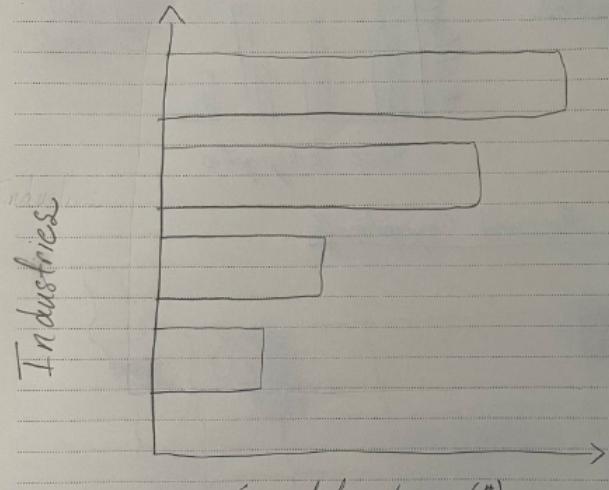


Revisions:

- Changed heat of map to be based on percentage of total loans received rather than number of loans received.
- Added State acronyms to each state in order to easier find desired state by audience.

2. Which industries (based on NAICS codes) received the largest amount of loans?

Loans by Industry based on NAICS codes



(Industries in descending order by Cumulative Loan amount.)

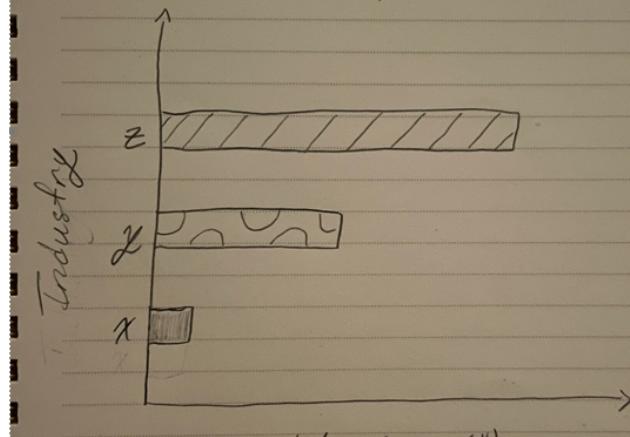
Possible: Color bar chart based on industry, which may be a general format for all visuals.

Feedback:

- If Industry types are colored by type make sure whenever industry is referenced the color to describe visuals is consistent.

2. Which industries (based on NAICS code) received the largest amount of loans?

Loans by Industry based on NAICS code



Revisions:

- Implemented individual color for each industry

Q # 3

How did businesses in each state /industry use the loans they received?

Payroll	Rent	\$	x
		\$\$\$	y
			z

state slices
<input type="checkbox"/> AL
<input type="checkbox"/> AK
... etc
Industry slices
<input type="checkbox"/> Manufacturing
<input type="checkbox"/> Mining
... etc

Tree map that shows how borrowers used their loans. User can look at specific state and/or industry.

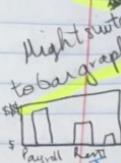
Feedback:

- Make sure that all the payment \$ amounts would fit in a tree graph
- We were considering putting a table next to the graph that shows the \$ amount for each sector (ex: payroll → \$xxx, rent → \$xx) - this might not be the best way to visualize this info
- Group 1 suggested that if the tree graph doesn't work, potentially switch to a bar graph.

- Numbers might be hard to see on tree map
- Jared said instructors do not like tables next to visuals so can't have table w/ amount
- Group 1 suggests that if tree map doesn't work, switch to bar graph

How did businesses in each state /industry use the loans they received?

How business used their loans



Rent	\$	x
Payroll	\$	y
		z

state slices
<input type="checkbox"/> AL
<input type="checkbox"/> AK
... etc
Industry slices
<input type="checkbox"/> Manufacturing
<input type="checkbox"/> Mining
... etc

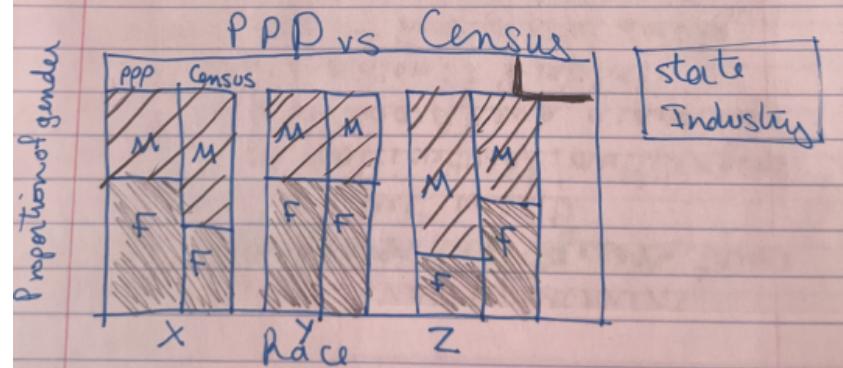
Tree map that shows how borrowers used their loans. User can look at specific state and/or industry.

Revisions:

- Added title to graph.
- Scratching the idea of a table w/ \$ amounts.
- Potentially switching over to bar graph instead of tree graph, TBD till we start making visuals.

Q #4

Was the quantity of loans given proportional to the demographic breakdown of business in each state / industry?



In state A / Industry B, for race X, more female owned businesses received PPP than male owned businesses even though the census showed that more males of race X owned a business.

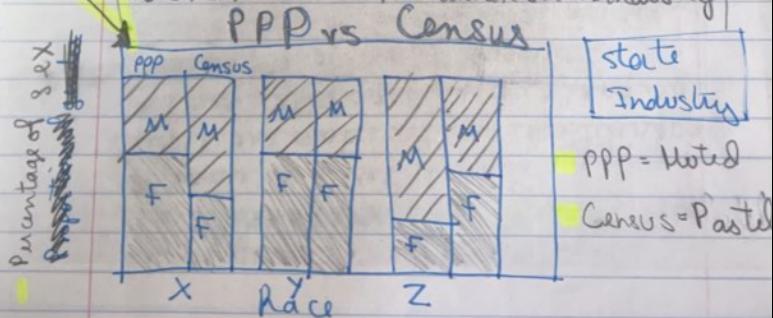
Feedback:

- Make sure colors/labels clearly differentiate different demographic groups
- Group 1 fears this visual might be too difficult/advanced to make.

- Need distinguishing colors for PPP + Census. Muted / Pastel
- Group 1 likes this but think it might be hard to make

Was the quantity of loans given proportional to the demographic breakdown of business in each state / industry?

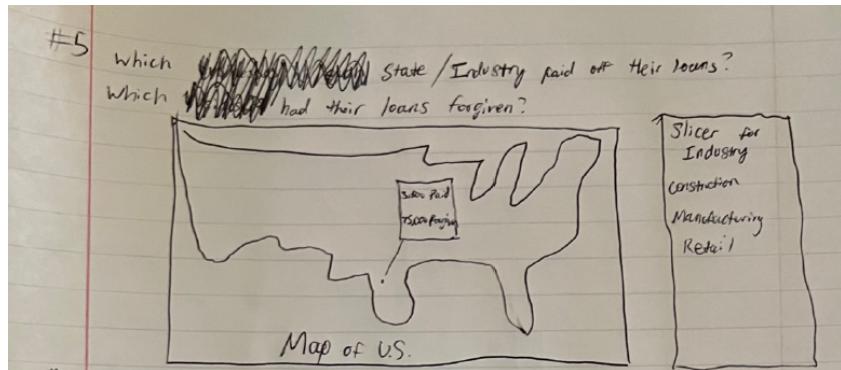
% of sex for each race within state / industry



In state A / Industry B, for race X, more female owned businesses received PPP than male owned businesses even though the census showed that more males of race X owned a business.

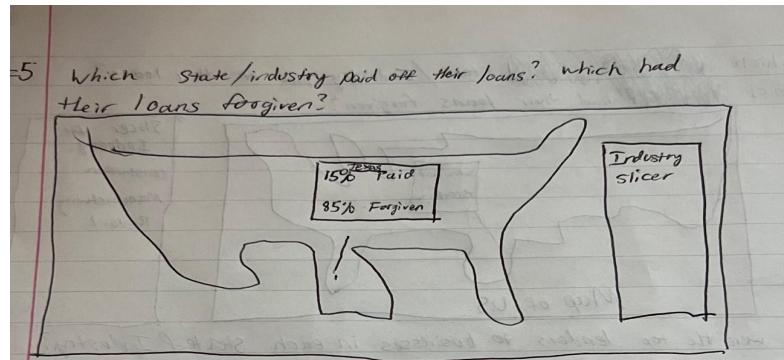
Revisions:

- Added title and edited axis label.
- Will make PPP muted and Census pastel. That way, if the female and male parts are two diff colors (red/blue), they will be different shades of blue.



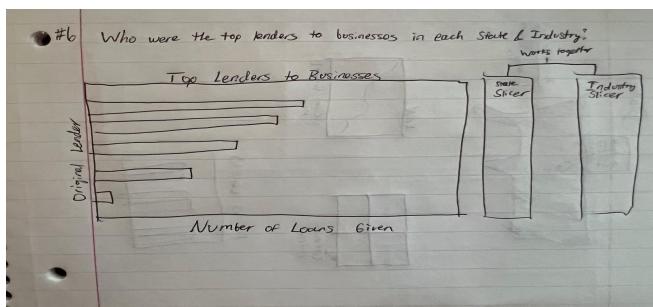
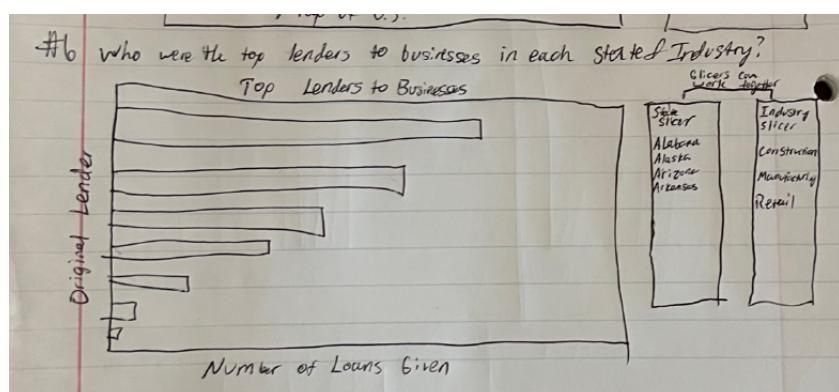
Feedback:

- Consider showing this info in percentages



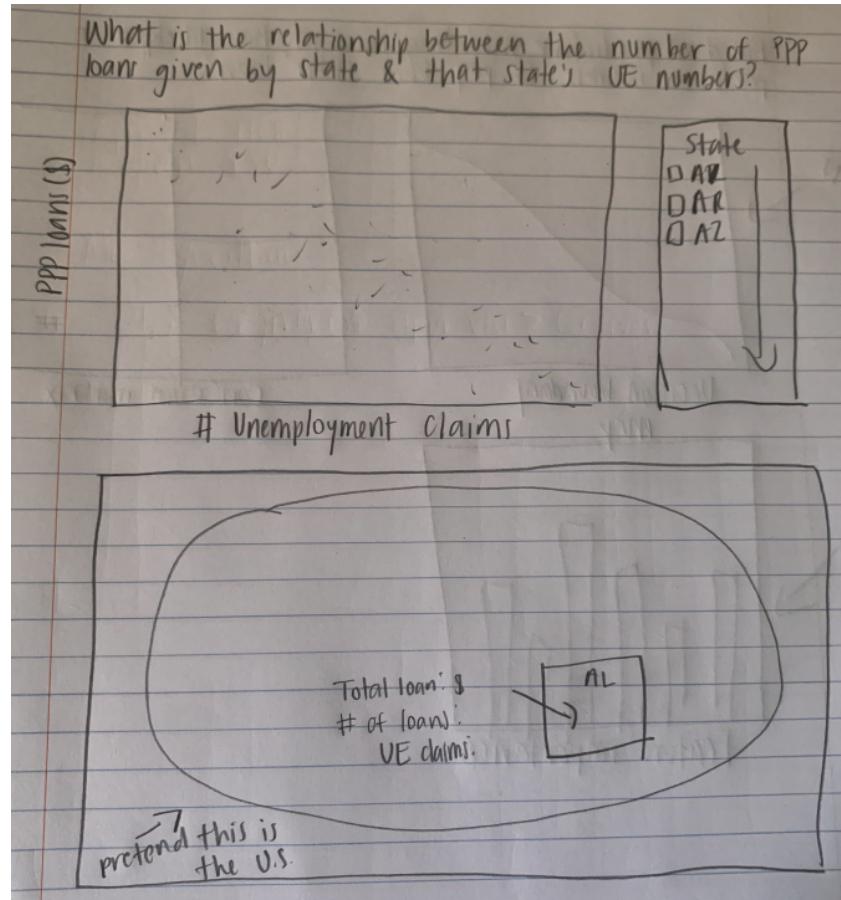
Revisions:

- Changed info to show percentages.



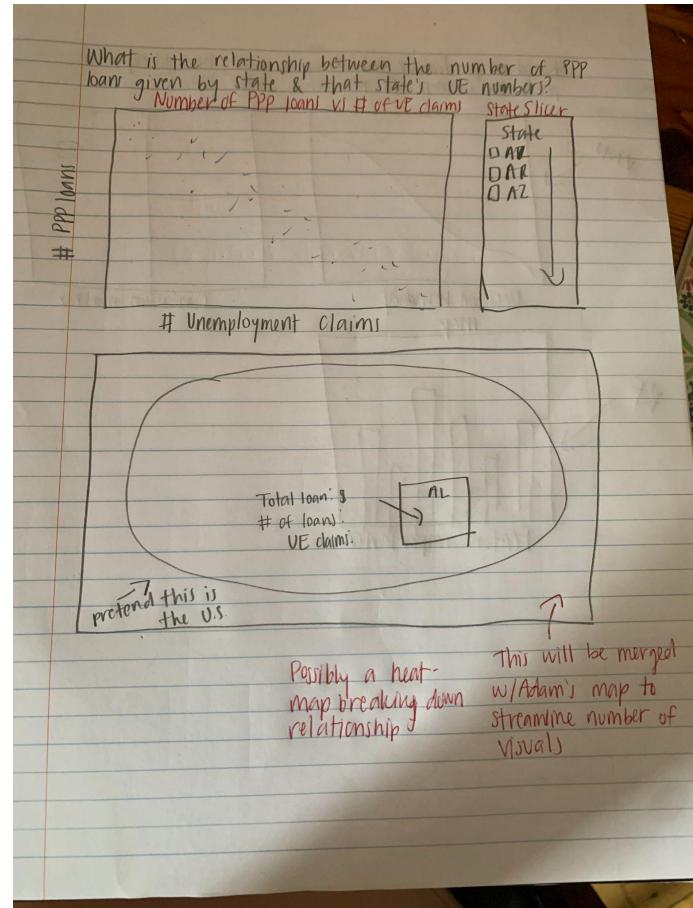
Revisions:

- Limit to just Top 5 rather than Top 7



Feedback:

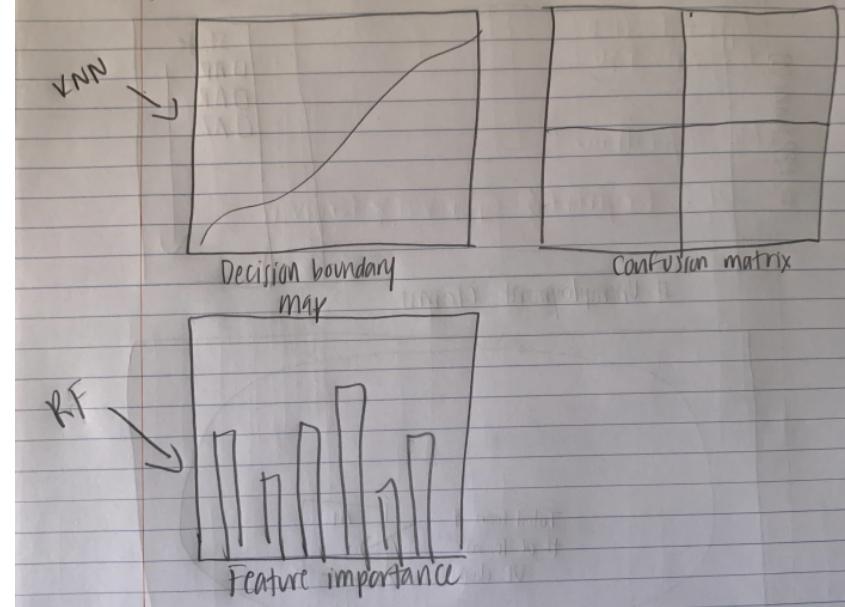
- Consider showing this info in percentages
- Streamline the number of graphs



Revisions:

- Will combine maps into one visual
- Labeled graphs

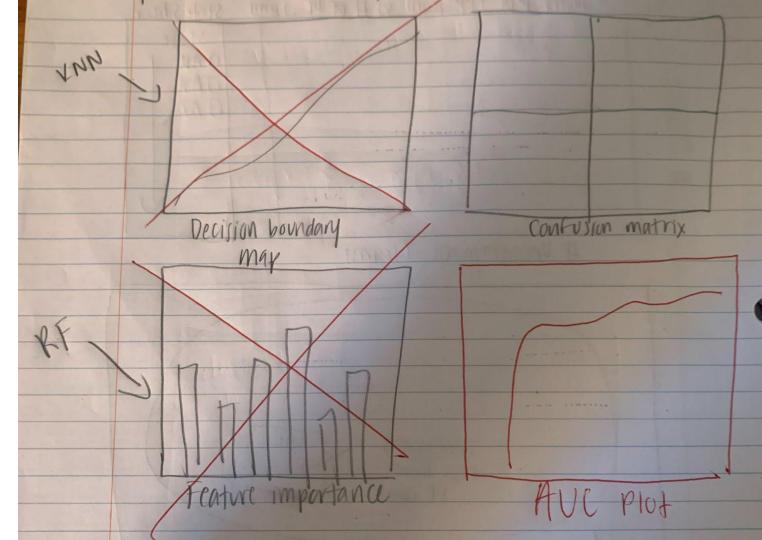
Based on predictive modeling analysis, how likely is a particular business to pay back their loan?



Feedback:

- Incorporate more easily interpretable ML graphs

Based on predictive modeling analysis, how likely is a particular business to pay back their loan?



Revisions:

- Removed KNN/RF specific visuals
- Added an AUC plot