SAS Infographics Toolkit
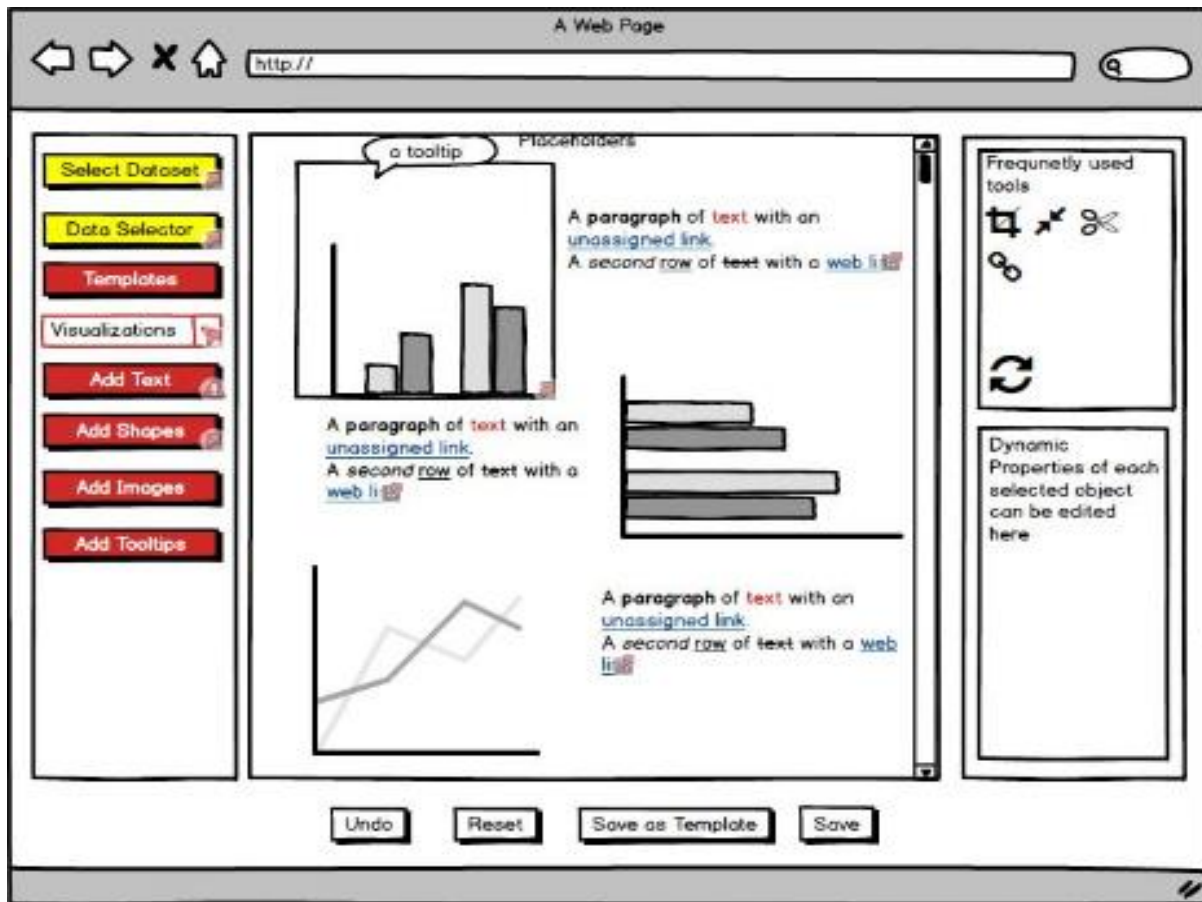# Test Results

Team #2

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Early Prototype

Formative Evaluation

A formative evaluation was carried out on the early Balsamiq prototype shown above. This involved semi-structured interviews with task observations while the participants carried out the given tasks as well as a survey at the end of each task. Two participants were recruited for this evaluation, both with some statistics/data analytics experience.

Preliminary Interviews

These involved semi-structured interviews where in the participants were given certain task-scenarios and performance of the participants was observed.

Script

Hello, thank you for helping out. My team is developing a new set of features for a data analytics application. These features will allow users to augment their data graphs to improve visual appeal and increase comprehension. It's intended to be designed for people like you, so we'd like to know what you think about it, what works, and what doesn't work. It's currently in an early stage of development, so

not everything is functioning in the tool. Today, I'm showing you an early prototype. I'm going to ask you to complete several tasks and answer some questions. I have a small questionnaire that I'd like you to complete, too. Once we begin, I would like you to vocalize your thoughts as you view and work with the prototype. Describe what you are looking for, what is confusing, or anything that surprises you. It may seem unnatural to do so, but your thoughts are very important for the development of this prototype. I will take notes and ask questions throughout the session. Before we begin, I need to inform you of your standard rights as a participant today. You may stop at any time. You may ask questions at any time. We will not identify your name with data that are collected so your answers will be kept confidential. There is no deception involved. Any questions?

Questions-Initial Screen
What do these buttons (labels) mean?

Task-based scenarios

1) **Task:** Open visualization
   Goal: Open the visualization menu and add a visualization to the canvas.
   Scenario: You wish to add a bar chart to the canvas to show the trends in the data you are working with.

2) **Task:** Add Image
   Goal: Add an image to the visualization.
   Scenario: Once the bar chart is present on the canvas, you want to add images to certain elements in your chart to give some context and meaning to the data being presented by the chart.

3) **Task**: Modify size of images connected to bar
   Goal: Change size of images connected to bar
   Scenario: Now that you've added images to your bar chart, you decide to make the images smaller. Modify the images to be smaller.

4) **Task:** Add tooltips
   Goal: Add tooltips to each marker on the bar graph such that more information is shown when user hovers over each marker.
   Scenario: The Safety, Occupational, & Environmental Health director wants a report showing a line graph with the following: the incidents in January, February, and March for Stations 1 and 15. He wants you to use the information in "Station1and15Data" in a line

graph. He would like the report to show the average time taken to clear fires, number of civilian injuries, and number of fire fighter injuries for Jan., Feb. and March. However, he doesn't want to overwhelm his audience with too much information. He wants to hide the information unless he hovers or clicks over a point in the line chart. The additional information pertaining to a specific station and month will show only after hovering over or clicking a point.

5) **Task:** Replace pie slices with ring charts
   Goal: Replace pie slices with ring charts that provide percentage corresponding to slice
   Scenario: You generated a report including a pie chart with the percentage of incidents for Stations 1, 2, and 3. The Safety, Occupational, & Environmental Health director did not like the pie chart. He wants you use another type of circular graph, which resembles a donut. Modify "PieStation1_2_3" according to his request.

6) **Task:** Build report with multiple maps that have different data. User controls which map currently shown (only one at a time can be displayed). User builds controls that filtering so that the correct map is shown on the screen
   Goal: Show filtered data using the custom filtering feature

7) **Task:** Connect Images to Bar Elements of a Visualization
   Goal: Add images to individual elements on a graph to add context to the data
   Scenario: The Safety, Occupational, & Environmental Health director wants a report showing the number of all reported incidents that were due to building fires, cooking fires, chimney fires, and lock outs. He wants you to use the information in "JanIncidentTypeData" for the report. His instructions are to create a bar chart with each type of incident represented with a different bar. Each bar will represent the number of incidents for that particular incident type. (One bar for building fires, one for cooking fires, etc.) He wants you to use pictures to label each incident type on the graph because some viewers have a difficult time seeing the text labels.
   Subtask: Generate visualization
   Goal: Create visualization that will include the infographics

Questions-Generic

- *Names of buttons and other elements make sense?*
- *(For each element): What are your expectations for the behavior/content of this button?*

The results of these semi-structured interviews and task observations are tabulated below:

First Prototype - Interview/Scenario-based Test Results

*Interviewer's observations/recommendations are highlighted in red. Participants' feedback is in black.

Issue/Benefit	Screen	Description
Layout of app is adequate. The graphics were simple.	*Initial Screen*	*Colors of boxes on left represent grouping of commonly used task actions. Center has workspace bottom has save and undo functions so user does not have to search for them. Properties box on bottom right is well place as is tools on top right.* *Use another color instead of red for important buttons b/c of color blindness (small % have some form)*
Frequently used controls	*Initial Screen*	*No where in the application to select tools so how would frequently used tools be populated.*
Visualizations - language	*Initial Screen*	*User didn't know what this meant. One thought it meant change the way the data or template looks like;*
Placeholders	*Initial Screen*	*One user thought these were graphs/text are connected to things that were worked on in the past. Relabel as "Placeholders for Charts"*
Reset button	*Initial Screen*	*Confusion: revert back to state upon opening file or last save? Move away from undo to prevent people from losing work?*
Dynamic properties - language	*Initial Screen*	*Very common term for*

		programmers; non-programmers don't understand meaning? Use "Properties." Also "Custom Assets" is used on other screens. Needs to be consistent.
Opening file - function	*Initial Screen*	*Select dataset is unclear. User does not know that each file contains a single dataset. I thought that open file was missing since I assumed that a file contain many datasets so I was looking for an open file button and once file is open the within file I select datasets from the file. Needs to be clear that each file is the dataset. Then how do you have multiple datasets in your charts.* *Select dataset- range of data that you need to use e.g., cells, rows, columns in data set that you want to use in graph; Data Selector - tool to help select the data (if data are not standard format, would use wizard/walkthrough to select the data; What about filtering data (e.g., showing certain values from a column).* **Expected the dataset to appear on the middle panel.** **Are we supporting multiple data sets?**
Data Selector- language	*Initial Screen*	*Sounds very similar to "Select dataset." Rename "Select data"*
Sequence of opening data set and selecting data within data set	*Initial Screen*	*The buttons are displayed as if user has choice to select any of the buttons. Seems like we are*

		assuming that they will click "Select Dataset" first. What happens if they select "Data Selector" or "Visualizations" before selecting a data set?
Data Selector – missing labels	*Data Selector*	*Missing labels for each combo box; some users might not know what are row and column data, esp. in really large data sets where they have 100+ variables, 1000+ people*
Help		Include help function for some functions (for example tooltips, select data)
Incorrect image properties	Add Images	Image properties should not have font, font size, margins and color box. Should be length, width in either or both pixels or inches with option to maintain aspect ratio, ratio and rotation **Can multiple images be selected at once?**
Select style & direction – language	Tooltip Wizard – Screen 1	Select style and select direction are clear
Display marker/line – language	Tooltip Wizard – Screen 2	Display on marker/line not sure what this means; unnecessary b/c tooltip should be at each point
Select content to display - language	Tooltip Wizard – Screen 2	Unclear language
Image tooltip - label	Tooltip Wizard – Screen 1	Label the image tooltip with "LABEL" to indicate an image will be uploaded there; File icon should have label "Upload Image"
Rotation – spin box	Tooltip Wizard – Screen 1	If one rotate option is selected, does the spin box update to reflex that choice? Is it possible

		to add radio button for 3ʳᵈ choice even though it is a separate control
Tooltip properties and view	*Add Tooltip*	*Show dots on graph where tooltips were inserted vs actual tooltips; Sizing, aspect ratio, fill and line color, transparency, rotation, line thickness/no line, have option to hide/show indicator (but will show info if hovered/clicked), font properties*
Replace Slice – button	*Line Chart*	*<mark>Didn't notice button. Change the color of it OR move to properties</mark>*
Replace Slice - language	*Line Chart*	*Thinks replace slice means to change underlying data for that slice "I thought replace slices means change column within dataset to be displayed." Have a separate button for Replace with Ring chart (Circular progress bar??); Another button for replace pie chart with images*
Replace slice - options	*Replace Slice Wizard*	*Have option to show/hide percentages along with choice of ring chart vs image. Option including percentage as tooltip*
Replace with - language	*Replace Slice Wizard*	*percentages is unnecessary in the option b/c pie chart is %*
Replace with options	*Replace Slice Wizard*	*Using same image for all slices doesn't make sense*
Replace slices with images	*Replace Slice Wizard*	*Should have preset images to choose from and then option to*

		upload file on the same screen.
Properties		*Option to order items sequentially: small-largest % vice versa; Image properties; percentages checkbox (and use tooltips for percentages)*
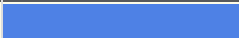
Survey

A survey was carried out after the task-based interviews. The results of the survey are shown below:

Initial Report

Last Modified: 03/16/2015

1. What is your gender?

#	Answer		Response	%
1	✔ Male		1	50%
2	✔ Female		1	50%
	Total		2	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2
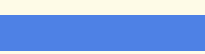
2. What is your age?

#	Answer		Response	%
1	✔ 18 - 22 years old		0	0%
2	✔ 23 - 27 years old		0	0%
3	✔ 28 - 32 years old		0	0%
4	✔ 33 - 37 years old		2	100%
5	✔ 38 - 42 years old		0	0%
6	✔ 43 - 52 years old		0	0%

7	✔ 53 - 62 years old		0	0%
8	✔ 63 and over		0	0%
	Total		2	100%
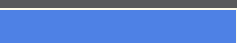
Statistic	Value
Min Value	4
Max Value	4
Mean	4.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

3. What is the highest level of school you have completed or the highest degree you have received?

#	Answer		Response	%
1	✔ Less than high school diploma		0	0%
2	✔ High school diploma or equivalent (e.g., GED)		0	0%
3	✔ Some college but no degree		0	0%
4	✔ Associate degree		0	0%
5	✔ Bachelor degree		1	50%
6	✔ Graduate or professional degree		1	50%
	Total		2	100%

Statistic	Value
Min Value	5
Max Value	6
Mean	5.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2

4. Are you currently a student?

#	Answer		Response	%
1	✔ Yes		1	50%
2	✔ No		1	50%
	Total		2	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2

5. What is your major?

Text Response
Public Administration

Statistic	Value
Total Responses	1

6. What is your occupation?

Text Response
Software Engineer

Statistic	Value
Total Responses	1
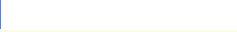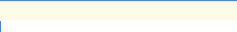
7. How experienced are you with data analysis?

#	Answer		Response	%
1	✔ Not all experienced		0	0%
2	✔ Somewhat experienced		2	100%
3	✔ Experienced		0	0%
4	✔ Very experienced		0	0%
5	✔ Extremely experienced		0	0%
	Total		2	100%

Statistic	Value
Min Value	2
Max Value	2
Mean	2.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

8. What applications have you used to analyze data and/or build graphs?
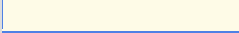
#	Answer		Response	%

1	✔ IBM SPSS			1	50%
2	✔ SAS			0	0%
3	✔ Microsoft Excel			2	100%
4	✔ Other			0	0%

Other

Statistic	Value
Min Value	1
Max Value	3
Total Responses	2

9. What system do you prefer to use on your desktop or laptop?

#	Answer		Response	%
1	✔ PC		0	0%
2	✔ Mac		1	50%
3	✔ Other		1	50%
	Total		2	100%

Other

Linux

Statistic	Value
Min Value	2
Max Value	3
Mean	2.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2

10. What was visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response

Layout of app is adequate. Colors of boxes on left represent grouping sof commonly used task actions.
Center has workspace bottom has save and undo functions so user does not have to search for them.
Properties box on bottom right is well place as is tools on top right.
The graphics were simple.

Statistic	Value
Total Responses	2

11. What was NOT visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response

nowhere in the application to select tools so how would frequently used tools be populated.
Some of the labels could be misleading and cause frustration.

Statistic	Value
Total Responses	2

12. Please indicate any language/text on the prototype that was unclear to you. What was unclear?

Text Response
Image properties should not have font, font size, margins and color box its not clear that its a color selector. Should be length, width in either or both pixels or inches with option to maintain aspect ratio. Select dataset is unclear. User does not know that each file contains a single dataset. I thought that open file was missing since I assumed that a file contain many datasets so I was looking for an open file button and once file is open the within file I select datasets from the file. Needs to be clear that each file is the dataset. Then how do you have multiple datasets in your charts.
Some of the labels could be misleading and cause frustration.The option " Visualizations" is not as intuitive as it should be, because it gives you different chart types. The box referring to "dynamic properties" was a little confusing. If it is simply referring to the properties of the image, then it should just simply say properties. The options only referred to fonts.

Statistic	Value
Total Responses	2

13. It was easy to add images to the bars on the graph.

#	Answer		Response	%
1	✔ Strongly Disagree		0	0%
2	✔ Disagree		0	0%
3	✔ Neither Agree nor Disagree		1	50%
4	✔ Agree		1	50%
5	✔ Strongly Agree		0	0%
	Total		2	100%

Statistic	Value
Min Value	3
Max Value	4
Mean	3.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2

14. How easy was it to edit, format or modify images?

#	Answer		Response	%
1	✔ Strongly Disagree		2	100%
2	✔ Disagree		0	0%

3	✔ Neither Agree nor Disagree		0	0%
4	✔ Agree		0	0%
5	✔ Strongly Agree		0	0%
	Total		2	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

15. Please rate the difficulty of this task (opening data; adding and modifying images on graph).

#	Answer		Response	%
1	✔ Very Difficult		0	0%
2	✔ Difficult		0	0%
3	✔ Somewhat Difficult		2	100%
4	✔ Neutral		0	0%
5	✔ Somewhat Easy		0	0%
6	✔ Easy		0	0%
7	✔ Very Easy		0	0%
	Total		2	100%

Statistic	Value
Min Value	3
Max Value	3
Mean	3.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

16. What was NOT visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response
Nothing.
The replace slide button that appears after selecting "visualizations" should show up under properties.

Statistic	Value
Total Responses	2

17. Please indicate elements that did not behave as you would expect?
    (e.g., behaviors when you click on controls)

Text Response
I expect image properties for an image and got text properties. I did not know what visualizations meant.
Data Selector Visualizations It lacked the options to edit the image properties. Also, after selecting the image there were no options to modify the image properties.

Statistic	Value
Total Responses	2

18. What was visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response
Select style and select direction are clear
The "tooltip" control was simple and intuitive.

Statistic	Value
Total Responses	2

19. What was NOT visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response
Nothing
The options to edit the tool tips could be reduced to one window. The option to upload an image is not very intuitive. It should have a label indicating that it can be selected to upload an image. After the tool tip is created, there should be an option to modify the properties.

Statistic	Value
Total Responses	2
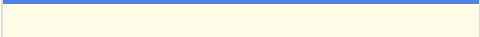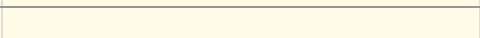
20. Please indicate any language/text on the prototype that was unclear to you. What was unclear?

Text Response
Disply on marker/line not sure what this means.
The upload file image option in step 2 was not very clear. It should have a label indicating that it can be selected to upload an image.

Statistic	Value
Total Responses	2
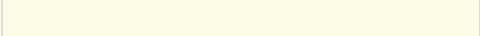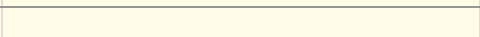
21. It was easy to add tooltips to the graph.

#	Answer		Response	%
1	✔ Strongly Disagree		0	0%
2	✔ Disagree		0	0%
3	✔ Neither Agree nor Disagree		0	0%

4	✔ Agree		2	100%
5	✔ Strongly Agree		0	0%
	Total		2	100%
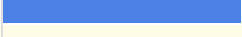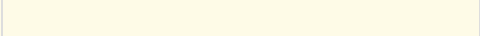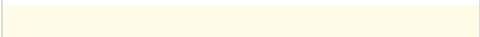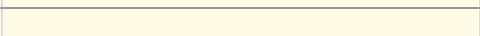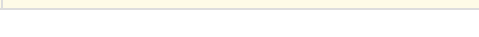
Statistic	Value
Min Value	4
Max Value	4
Mean	4.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

22. How easy was it to edit, format or modify tooltips?

#	Answer		Response	%
1	✔ Strongly Disagree		1	50%
2	✔ Disagree		1	50%
3	✔ Neither Agree nor Disagree		0	0%
4	✔ Agree		0	0%
5	✔ Strongly Agree		0	0%
	Total		2	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.50
Variance	0.50
Standard Deviation	0.71
Total Responses	2

23. Please rate the difficulty of this task (adding tooltips).

#	Answer		Response	%
1	✔ Very Difficult		0	0%
2	✔ Difficult		1	50%
3	✔ Somewhat Difficult		0	0%
4	✔ Neutral		0	0%
5	✔ Somewhat Easy		1	50%
6	✔ Easy		0	0%
7	✔ Very Easy		0	0%
	Total		2	100%

Statistic	Value
Min Value	2

Max Value	5
Mean	3.50
Variance	4.50
Standard Deviation	2.12
Total Responses	2

24. Please indicate elements that did not behave as you would expect?
    (e.g., behaviors when you click on controls)

Text Response
Select rotation is not clear
After the tool tip is created there is no option to edit the properties.

Statistic	Value
Total Responses	2

25. What was visually-pleasing about the controls and overall look of the prototype?
    Describe in as much detail as possible.

Text Response
Everything is fine as shown.
The options to edit the slide after replacing it was simple, but it could use a few adjustments.

Statistic	Value
Total Responses	2

26. Please indicate any language/text on the prototype that was unclear to you. What was unclear?

Text Response
I did not understand replace slices meant. Percentage part is redundant. Pie chart displays %'s
I think that there should be an option for percentages to show up or not show up. There should also be an option for percentages to show up as a tooltip.

Statistic	Value
Total Responses	2

27. It was easy to replace pie slices with ring charts or images on the graph.

#	Answer		Response	%
1	✔ Strongly Disagree		0	0%
2	✔ Disagree		0	0%
3	✔ Neither Agree nor Disagree		0	0%
4	✔ Agree		2	100%
5	✔ Strongly Agree		0	0%
	Total		2	100%
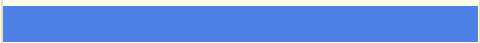
Statistic	Value
Min Value	4
Max Value	4
Mean	4.00
Variance	0.00
Standard Deviation	0.00
Total Responses	2

28. How easy was it to edit, format or modify ring charts?

#	Answer		Response	%
1	✔ Strongly Disagree		1	50%
2	✔ Disagree		0	0%
3	✔ Neither Agree nor Disagree		0	0%
4	✔ Agree		1	50%
5	✔ Strongly Agree		0	0%
	Total		2	100%

Statistic	Value
Min Value	1
Max Value	4
Mean	2.50
Variance	4.50
Standard Deviation	2.12
Total Responses	2

29. Please rate the difficulty of this task (replace pie slices with ring charts).

#	Answer		Response	%
1	✔ Very Difficult		0	0%
2	✔ Difficult		0	0%
3	✔ Somewhat Difficult		0	0%
4	✔ Neutral		0	0%
5	✔ Somewhat Easy		2	100%
6	✔ Easy		0	0%
7	✔ Very Easy		0	0%
	Total		2	100%

Statistic	Value
Min Value	5
Max Value	5
Mean	5.00
Variance	0.00

Standard Deviation	0.00
Total Responses	2

30. Please indicate elements that did not behave as you would expect?
    (e.g., behaviors when you click on controls)

Text Response
I thought replace slices means change column within dataset to be displayed.
When replacing the pie slices there should be more options for example, to display or not to display percentages and to upload a file or open a preloaded image.

Statistic	Value
Total Responses	2

31. Score

Statistic	Value
Mean Score	48.50
Score Standard Deviation	0.71
Weighted Mean of Items	2.94
Weighted Standard Deviation of Items	1.46
Items	33.00

Prototype Development

Based on the feedback received from the early-prototype evaluation, the Balsamiq prototype was further improved and changes were made where necessary. The reviewed Balsamiq prototype looked like shown below:
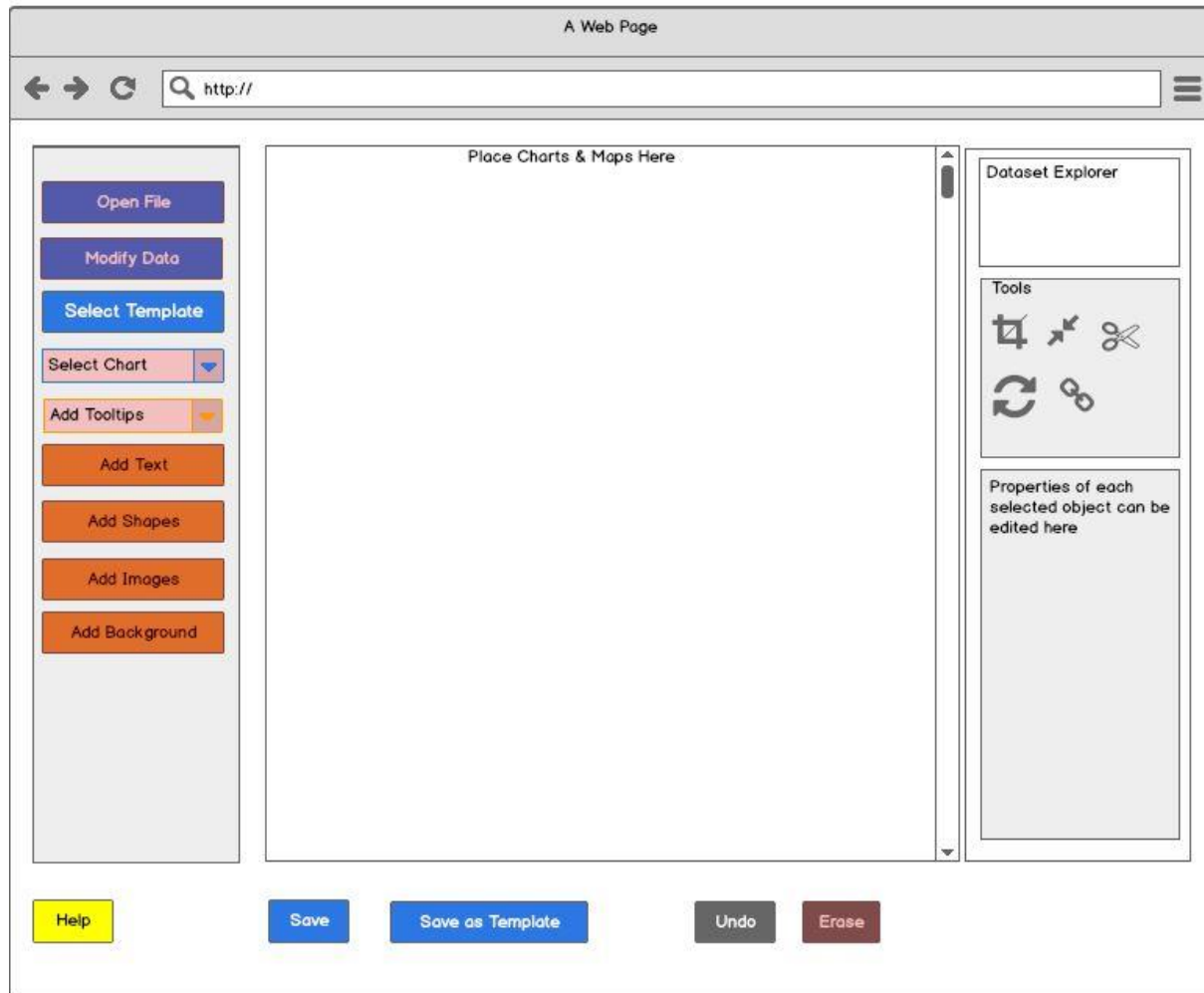
Final Evaluation and Testing

A final round of evaluations on the improved prototype was done to carry out a thorough survey of all the tasks included in the prototype and to gauge the improvement over early prototype.

Script

Introduction: Hello, thank you for helping out. My team is developing a new set of features for a data analytics application. These features will allow users to improve visual appeal and increase comprehension of data reports. It's intended to be designed for people like you, so we'd like to know what you think about it, what works, and what doesn't work. Today, I'm showing you a prototype. It's currently in an early stage of development, so everything is not functioning in the tool. For example, some button options are not clickable and some options cannot be changed. Dragging and direct manipulation (e.g., stretching images) does not work in this prototype. However, it will be available on later versions.   I'm going to ask you to complete several tasks. I have a small questionnaire that I'd like you to complete, too. Before we begin, I need to inform you of your standard rights as a participant today. You may stop at any time. You may ask questions at any time. We will not identify your name

with data that are collected so your answers will be kept confidential. There is no deception involved. Any questions?

Ask to fill out Demographics: Please complete the first set of questions about your age, education, data analysis experience, etc. Once you reach the question "Overall, the task was:" please stop and let me know that you are finished with the first set of questions.

Read scenario aloud: <Show picture to participant> Your director has requested a report with various statistics regarding incidents handled by Raleigh fire departments. Here is some information that he wants: comparison of incidents caused by car fires and those caused by cooking fires in 2013 and 2014, percentage of cooking fires handled by Fire Stations 1 and 2 in 2013 and 2014, comparison of false alarm calls vs fires, and a chart showing the change in the number of fire incidents responded to during 2013 and 2014. Your task is to build the report with the information he has requested. I will guide you with instructions on what to add and in what order. Use the picture provided to help you.

Note: The user was asked to fill a survey after every task.

Task 1: Onboarding (select dataset and data, change background, add title)

Subtask: Select dataset and data
Read aloud: Locate the data needed to build the report. The variables that you need are in dataset1.ext. The variables are: cooking, false alarms, and cars.

Subtask: Change background of canvas
Read aloud: Change the background of the canvas to match the picture

Subtask: Add a text box with Report title
Read aloud: Add a title to the report

COMPLETE SURVEY

Task 2: Add Visualizations and Image

Subtask: Add a column chart
Read aloud: Add a bar graph

Subtask: Add Image
Read aloud: Add an image of the fire truck

Subtask: Add pie chart
Read aloud: Add pie graphs to the wheels of the fire truck

Subtask: Add line chart
Read aloud: Add a line graph

Task 3: Add Infographics tooltips and images for pie slices
Subtask: Add formatted text tooltip
Read aloud: Add a caption that shows the number of cooking fires handled in 2013

Subtask: Add query tooltip
Read aloud: Add a caption that the percentage of cooking fires handled by stations 1 and 2 in 2014.

Subtask: Add row chart tooltip
Read aloud: Add a caption that displays a bar graph (show picture)

Subtask: Connect Images to Markers on line chart
Read aloud: show pictures at some points of the graph (see picture for example)

COMPLETE SURVEY

Task 4: Replace pie slices as images & change visibility property of tooltip

Subtask: Replace pie slices
Read aloud: Change one pie graph to show pictures instead of using different color slices (show new picture)

Subtask: Change Tooltip property
Read aloud: Change the caption with the row graph to show only when the mouse hovers

COMPLETE SURVEY AND SUS

Survey
Survey questions were asked after the tasks were completed to evaluate the prototype based on various measures. The results to these survey questions are given below:

Initial Report
Last Modified: 05/02/2015
1. What is your gender?
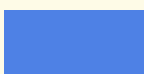
#	Answer		Response	%
1	✔ Male		2	67%

2	✔ Female		1	33%
	Total		3	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.33
Variance	0.33
Standard Deviation	0.58
Total Responses	3

2. What is your age?

#	Answer		Response	%
1	✔ 18 - 22 years old		0	0%
2	✔ 23 - 27 years old		0	0%
3	✔ 28 - 32 years old		1	33%
4	✔ 33 - 37 years old		2	67%
5	✔ 38 - 42 years old		0	0%
6	✔ 43 - 52		0	0%

				Response	%
	years old				
7	✔ 53 - 62 years old			0	0%
8	✔ 63 and over			0	0%
	Total			3	100%

Statistic	Value
Min Value	3
Max Value	4
Mean	3.67
Variance	0.33
Standard Deviation	0.58
Total Responses	3

3. What is the highest level of school you have completed or the highest degree you have received?

#	Answer		Response	%
1	✔ Less than high school diploma		0	0%
2	✔ High school diploma or equivalent (e.g., GED)		0	0%
3	✔ Some college but no degree		1	33%

4	✔ Associate degree		0	0%
5	✔ Bachelor degree		0	0%
6	✔ Graduate or professional degree		2	67%
	Total		3	100%

Statistic	Value
Min Value	3
Max Value	6
Mean	5.00
Variance	3.00
Standard Deviation	1.73
Total Responses	3

4. Are you currently a student?

#	Answer		Response	%
1	✔ Yes		0	0%
2	✔ No		3	100%
	Total		3	100%

Statistic	Value

Min Value	2
Max Value	2
Mean	2.00
Variance	0.00
Standard Deviation	0.00
Total Responses	3

5. What is your major?

Text Response

Statistic	Value
Total Responses	0

6. What is your occupation?

Text Response
Software Developer
Esthetician
Associate Professor

Statistic	Value
Total Responses	3

7. How experienced are you with data analysis?

#	Answer		Response	%
1	✔ Not all experienced		0	0%

#	Answer		Response	%
2	✔ Somewhat experienced		1	33%
3	✔ Experienced		1	33%
4	✔ Very experienced		0	0%
5	✔ Extremely experienced		1	33%
	Total		3	100%

Statistic	Value
Min Value	2
Max Value	5
Mean	3.33
Variance	2.33
Standard Deviation	1.53
Total Responses	3

8. What applications have you used to analyze data and/or build graphs?

#	Answer		Response	%
1	✔ IBM SPSS		1	33%
2	✔ SAS		1	33%
3	✔ Microsoft		2	67%

	Excel			
4	✔ Other		1	33%

Statistic	Value
Min Value	1
Max Value	4
Total Responses	3

9. What system do you prefer to use on your desktop or laptop?

#	Answer		Response	%
1	✔ PC		1	33%
2	✔ Mac		1	33%
3	✔ Other		1	33%
	Total		3	100%
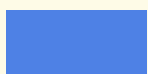
Other
Linux

Statistic	Value
Min Value	1
Max Value	3
Mean	2.00
Variance	1.00
Standard Deviation	1.00
Total Responses	3

10. Score

Statistic	Value
Mean Score	21.67
Score Standard Deviation	4.51
Weighted Mean of Items	2.83
Weighted Standard Deviation of Items	1.47
Items	23.00

11. (Onboarding: select data, background, add title) Overall, this task was:

#	Answer		Response	%
1	1=Very Difficult		0	0%
2	2		1	33%
3	3		1	33%
4	4		0	0%

5	5		0	0%
6	6		0	0%
7	7=Very Easy		1	33%
	Total		3	100%
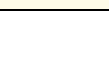
Statistic	Value
Min Value	2
Max Value	7
Mean	4.00
Variance	7.00
Standard Deviation	2.65
Total Responses	3

12. Why? Explain your rating.

Text Response
Background was simple enough from add background button as well as text from add text button. Selecting certain columns from dataset was simple using dual box with add/remove arrows.
Creating a title and changing the background color were easy but finding the data to use to build the chart made no sense. It was confusing. I'd prefer to be able to open file with info to use and have it visible.
The process for adding the data was somewhat unintuitive. Also, buttons for changing the background and adding text boxes would be more intuitive if place in a toolbox or inspector window.

Statistic	Value
Total Responses	3

13. (Visualizations) Overall, this task was:

#	Answer		Response	%
1	1=Very Difficult		0	0%
2	2		0	0%
3	3		0	0%
4	4		1	33%
5	5		0	0%
6	6		1	33%
7	7=Very Easy		1	33%
	Total		3	100%

Statistic	Value
Min Value	4
Max Value	7
Mean	5.67

Variance	2.33
Standard Deviation	1.53
Total Responses	3

14. Why? Explain your rating.

Text Response
All the charts were simple enough to just click on the drop down menu for select charts, selecting chart type then selecting data and moving onto canvas. For the image a simple click of the add image button and selecting desired image and positioning on the canvas was easy.
It was simple because there was a clear menu to show where to create charts.
The wording to add a graph is somewhat awkward. It should likely be Add Graph as opposed to Select Graph. Also, methods for previewing the graph once you identify the data you want in it would be helpful. A button for choosing a image from file would also be helpful

Statistic	Value
Total Responses	3

15. (Infographics) Overall, this task was:

#	Answer		Response	%
1	1=Very Difficult		2	67%
2	2		0	0%
3	3		1	33%
4	4		0	0%

5	5		0	0%
6	6		0	0%
7	7=Very Easy		0	0%
	Total		3	100%

Statistic	Value
Min Value	1
Max Value	3
Mean	1.67
Variance	1.33
Standard Deviation	1.15
Total Responses	3

16. Why? Explain your rating.

Text Response
For tooltips not sure about the two options I chose quick add first. After selecting tool tip wizard options after not clear. For adding tooltip I was going to just use text again but it was done using query. Adding bar chart caption I chose add chart first then went to tooltip wizard option. For adding images to line chart I chose add image first rather then going to select chart to find correct option.
The wording of the formatted tooltip text option wasn't clear. The word "text" helped me figure out this was the right one, but the rest didn't make sense. I thought the second the tooltip would use the same option (formatted one) but it wasn't. I don't know anything about queries. It should be worded differently to guide me.
Adding text and images to graphs is a bit unintuitive. It may be more intuitive to put the "tool tips" option under shapes and provide the option to link to a particular graph. Also, there should be

some kind of formula builder or query mechanism for building the text for text boxes. The language for the query building was also unclear. The drop down box for quick add and tool tip wizard was unintuitive. Adding images to graphs were also unintuitive. It may be more appropriate to select the graph and have the option to link images to it in some kind of inspector window.

Statistic	Value
Total Responses	3

17. (Modifying infographics) Overall, this task was:

#	Answer		Response	%
1	1=Very Difficult		0	0%
2	2		1	33%
3	3		0	0%
4	4		2	67%
5	5		0	0%
6	6		0	0%
7	7=Very Easy		0	0%
	Total		3	100%

Statistic	Value
Min Value	2
Max Value	4
Mean	3.33
Variance	1.33
Standard Deviation	1.15
Total Responses	3

18. Why? Explain your rating.

Text Response
Didn't know about clicking in canvas to change tooltip property, I went to tooltip menu instead. For the pie chart image task I found the select image option from chart option and was not obvious from clicking in canvas and using properties.
for tooltip didn't know there were options because that box was always empty. didn't that i could click on tooltip because i couldn't click on other things
It would be more intuitive if images could be added via an inspector or properties window.

Statistic	Value
Total Responses	3

19. For each of the following statements, select one circle (corresponding with a number) that best describes your reactions to the application.

#	Question	1=Strongly disagree	2	3	4	5=Strongly agree	Total Responses	Mean
4	I thought the application was easy to use.	1	1	1	0	0	3	2.00
11	I think that I would like to	3	0	0	0	0	3	1.00

#								
	use this application frequently.							
12	I found the application unnecessarily complex.	0	0	1	2	0	3	3.67
13	I think that I would need the support of a technical person to be able to use this application.	0	1	0	0	2	3	4.00
16	I found the various functions in this application were well integrated.	0	1	2	0	0	3	2.67
17	I thought there was too much inconsistency in this application.	0	0	1	1	1	3	4.00
18	I would imagine that most people would learn to use this application very quickly.	2	0	0	0	0	2	1.00
22	I found the application	0	0	2	1	0	3	3.33

	very cumbersome to use.							
25	I felt very confident using the application.	1	1	1	0	0		3	2.00
27	I needed to learn a lot of things before I could get going with this application.	0	0	1	1	1		3	4.00

Statistic	I thought the application was easy to use.	I think that I would like to use this application frequently.	I found the application unnecessarily complex.	I think that I would need the support of a technical person to be able to use this application.	I found the various functions in this application were well integrated.	I thought there was too much inconsistency in this application.	I would imagine that most people would learn to use this application very quickly.	I found the application very cumbersome to use.	I felt very confident using the application.	I needed to learn a lot of things before I could get going with this application.
Min Value	1	1	3	2	2	3	1	3	1	3
Max	3	1	4	5	3	5	1	4	3	5

Value										
Mean	2.00	1.00	3.67	4.00	2.67	4.00	1.00	3.33	2.00	4.00
Variance	1.00	0.00	0.33	3.00	0.33	1.00	0.00	0.33	1.00	1.00
Standard Deviation	1.00	0.00	0.58	1.73	0.58	1.00	0.00	0.58	1.00	1.00
Total Responses	3	3	3	3	3	3	2	3	3	3

20. Rate the application on originality, pleasantness, attractiveness, and innovation. Use the text descriptors to guide you.

#	Question	1	2	3	4	5	6	7	Total Responses	Mean
1	1=Original:7=Ordinary	1	0	0	1	0	1	0	3	3.67
2	1=Pleasant:7=Unpleasant	0	1	0	0	1	0	1	3	4.67
3	1=Attractive:7=Unattractive	0	0	1	1	0	1	0	3	4.33
4	1=Innovative:7=Conservative	0	0	1	0	0	2	0	3	5.00

Statistic	1=Original:7=Ordinary	1=Pleasant:7=Unpleasant	1=Attractive:7=Unattractive	1=Innovative:7=Conservative
Min Value	1	2	3	3
Max Value	6	7	6	6
Mean	3.67	4.67	4.33	5.00
Variance	6.33	6.33	2.33	3.00

Standard Deviation	2.52	2.52	1.53	1.73
Total Responses	3	3	3	3