

## **Apache OpenOffice Writer Design Mockups and Usability Tests**

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### **Design Scenarios**

**Design Scenario #1:** “Jane, an undergraduate student at SFU, needs to write a report while following strict formatting and content requirements in order to get an excellent mark in their User Interface design course. Using OpenOffice Writer on her laptop, she builds a 1500-word document that includes multiple sections such as an Abstract, Introduction, Main Argument, Conclusion and a Bibliography in MLA format. She includes a Table of Contents to organize these sections and cites her sources when required.”

**Design Scenario #2:** “Herman, an undergraduate student at SFU, needs to write a technical document that includes a large number of complex mathematical equations. Using OpenOffice Writer on his laptop, he documents the formulas and equations using all of the correct symbols needed.”

**Design Scenario #3:** “Amy, a prospective co-op student at SFU, wishes to write a resume that looks professional, yet stands out. Using OpenOffice Writer on her laptop, she builds a very well-organized and easy to read resume with well-defined sections and a consistent style.”

**Design Scenario #4:** “John, a researcher at SFU, needs to present his findings to project stakeholders in a clear and intuitive way. John decides to use OpenOffice Writer to presents the results in a tabular format with clear headings to indicate meaning of data presented in table.”

**Design Scenario #5:** “Susan is a SFU English instructor that frequently needs to review her students’ essays. Recently, Susan has asked the students to submit the essays in form of a Word documents. Now, Susan uses OpenOffice Writer to correct grammatical and structural errors in the essays. The corrections will be clearly highlighted so that students can identify corrections made by Susan. Also, she sometimes leave comments to further elaborate on her ideas.”

**Design Scenario #6:** “Amanda is a PhD student at her last year and she plans to prepare her Thesis using OpenOffice Writer. Due to nature of her work, she needs to frequently make reference to various parts in the Thesis (such as figures, tables, and chapter). Since her thesis is 200 pages long, she wants to create links to locations in her document so that it is easier for the reader to refer to the figures, tables, and text.

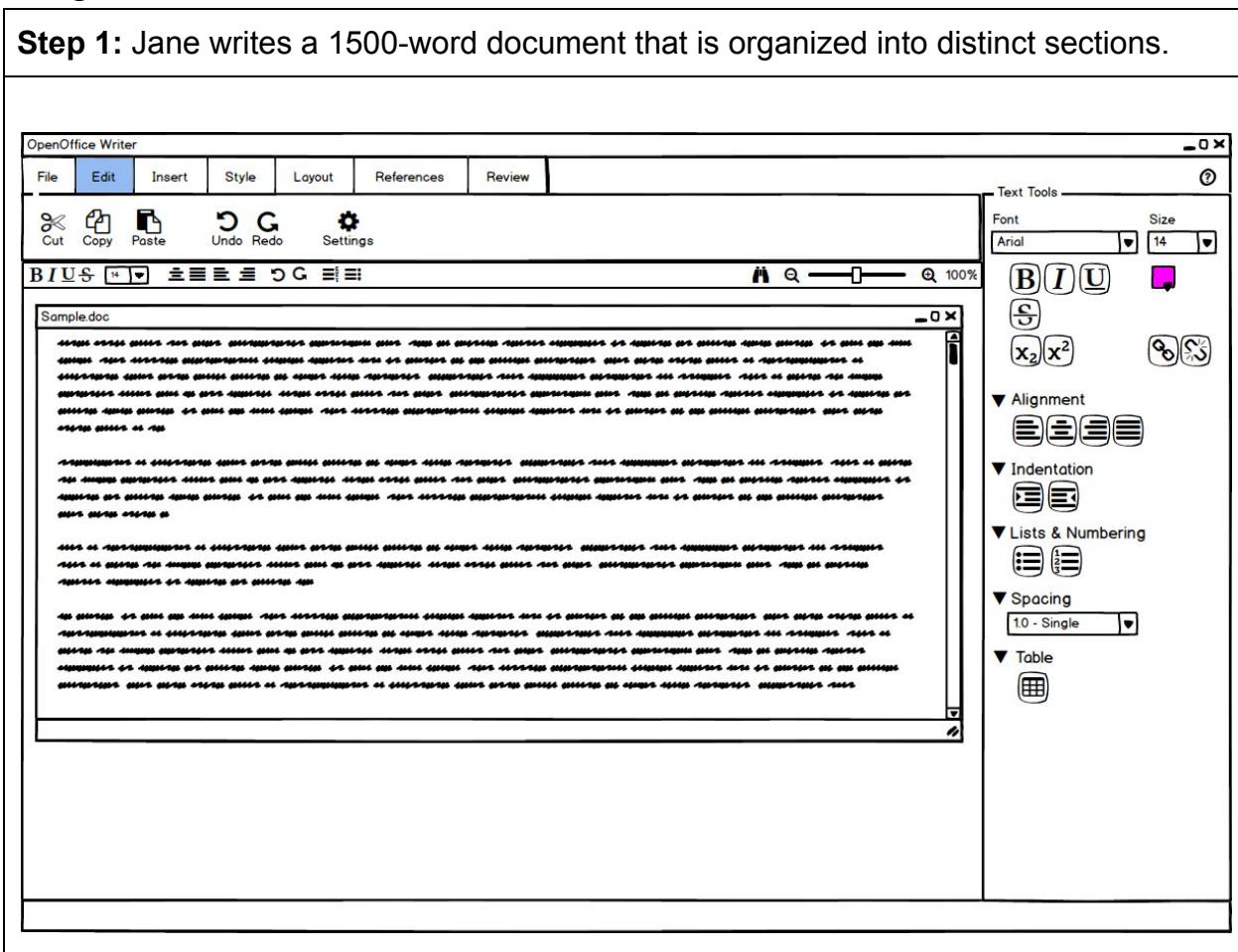
**Design Scenario #7:** “Bob is an undergraduate SFU student who needs to create a report for his group project using OpenOffice Writer. He wishes to share the document and collaborate on the report with his group members.”

**Design Scenario #8:** “Joyce, a recent SFU graduate wishes to sell her remaining textbooks by creating flyers and brochures and posting them at the SFU campuses as well as hand them out. Using OpenOffice Writer and the help of templates she creates a beautiful and practical tri-fold design.”

## Detailed Screen Mock-Ups

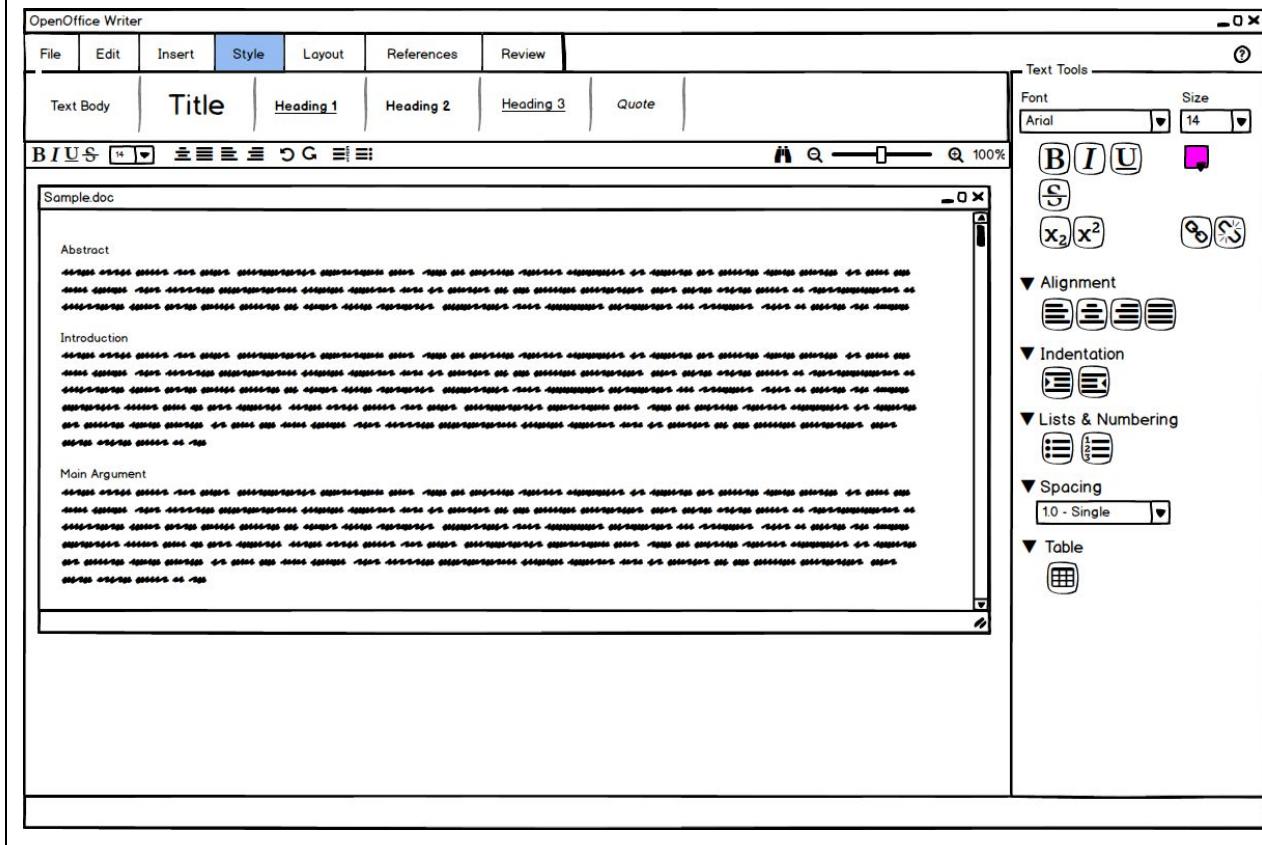
### Design Scenario #1

**Step 1:** Jane writes a 1500-word document that is organized into distinct sections.

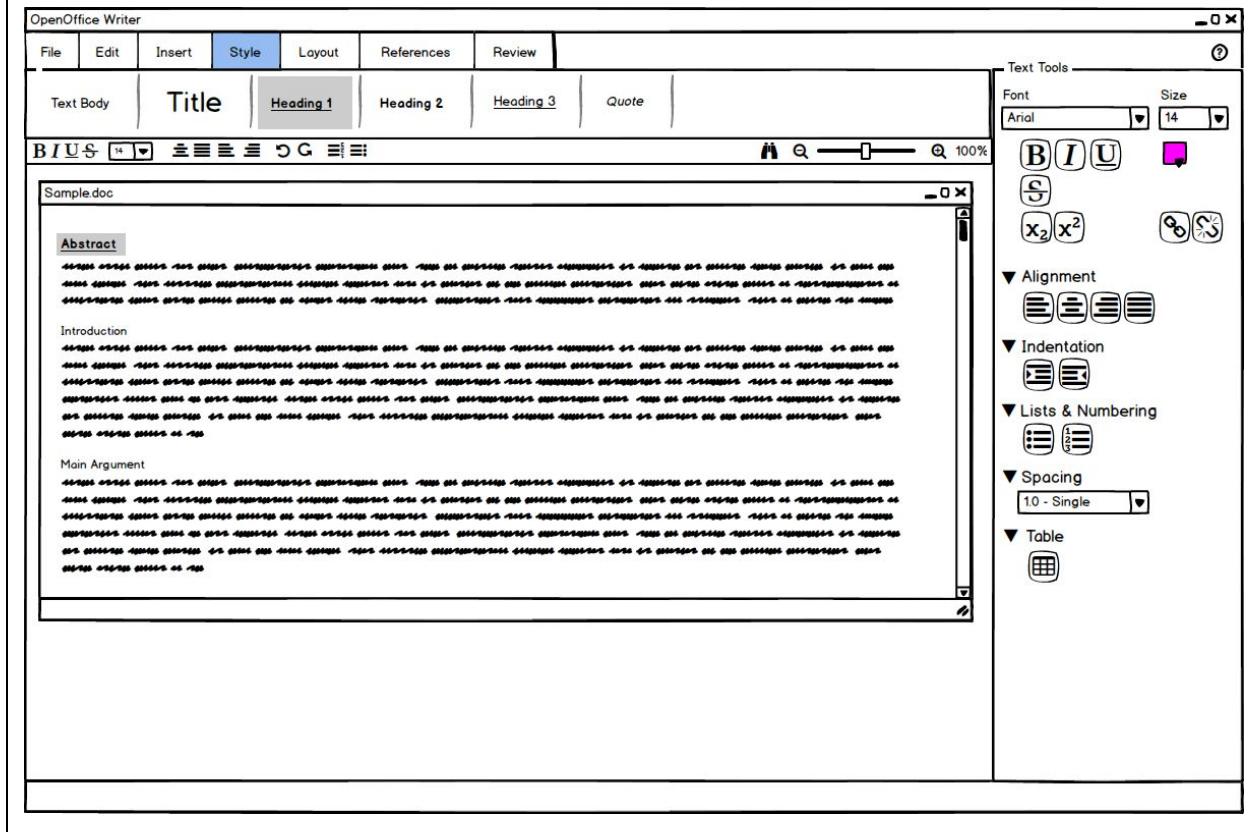


**Step 2:** Jane adds headers to each Section (i.e. Abstract, Introduction, Main Argument, etc..)

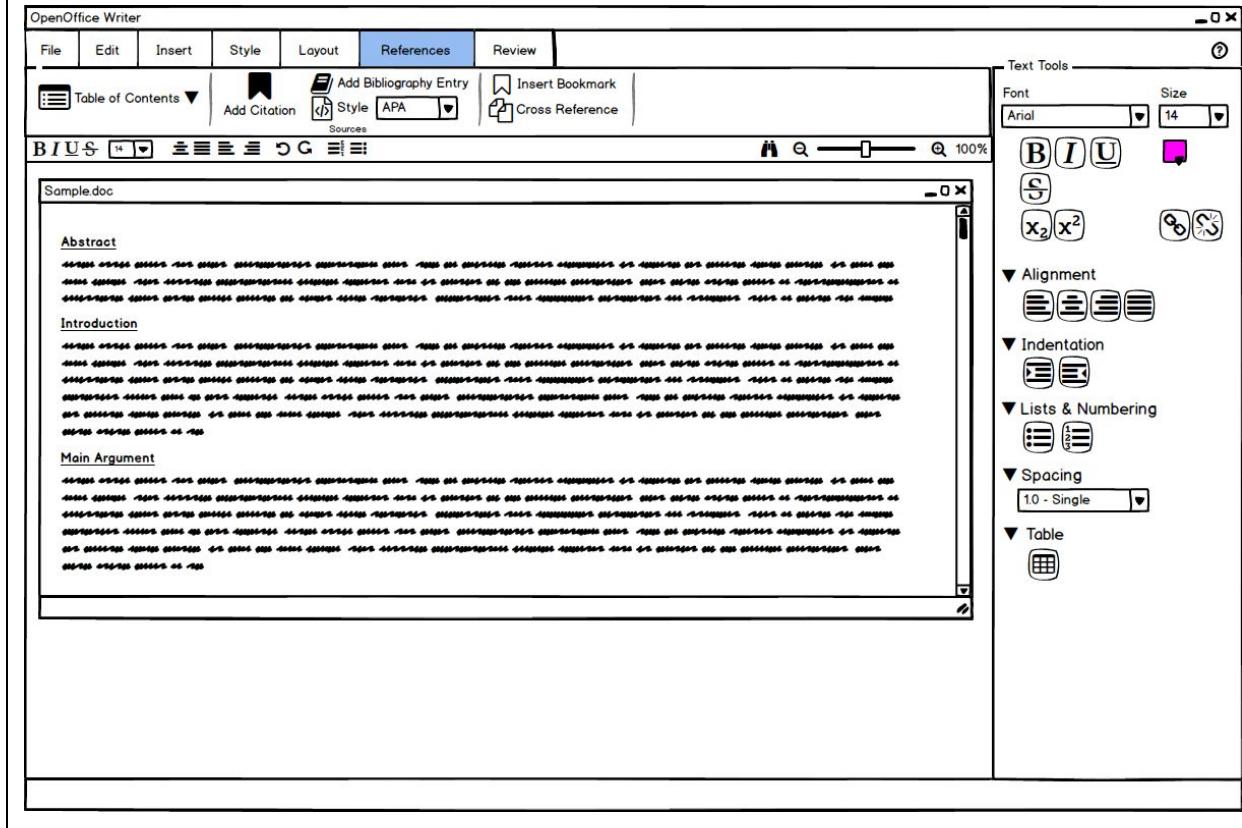
She now wishes to add a style to each of her Headers. She goes to the **Style Tab**.



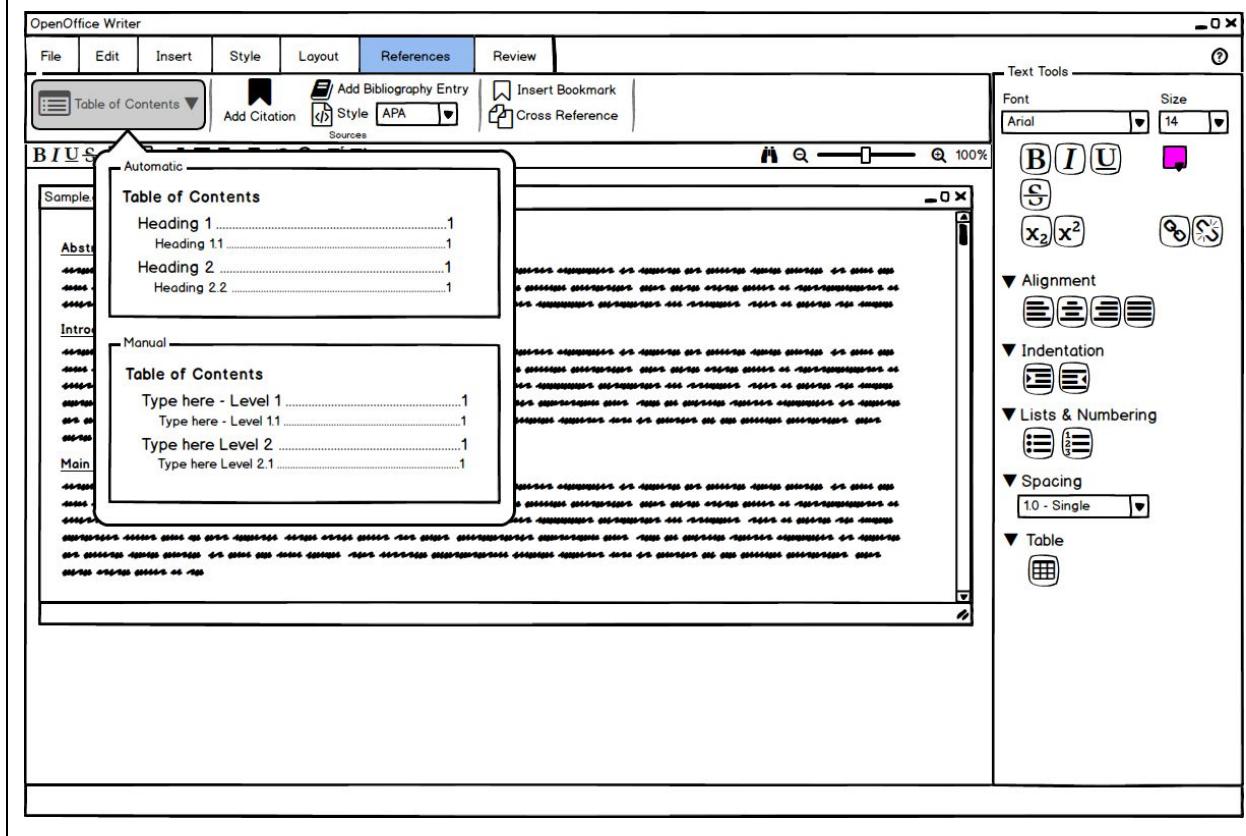
**Step 3:** Jane uses her cursor to select the 'Abstract' header. She clicks on the '**Header 1**' Style in the Style Menu to apply it to the 'Abstract' header. She repeats this step for all of the headers in each section.



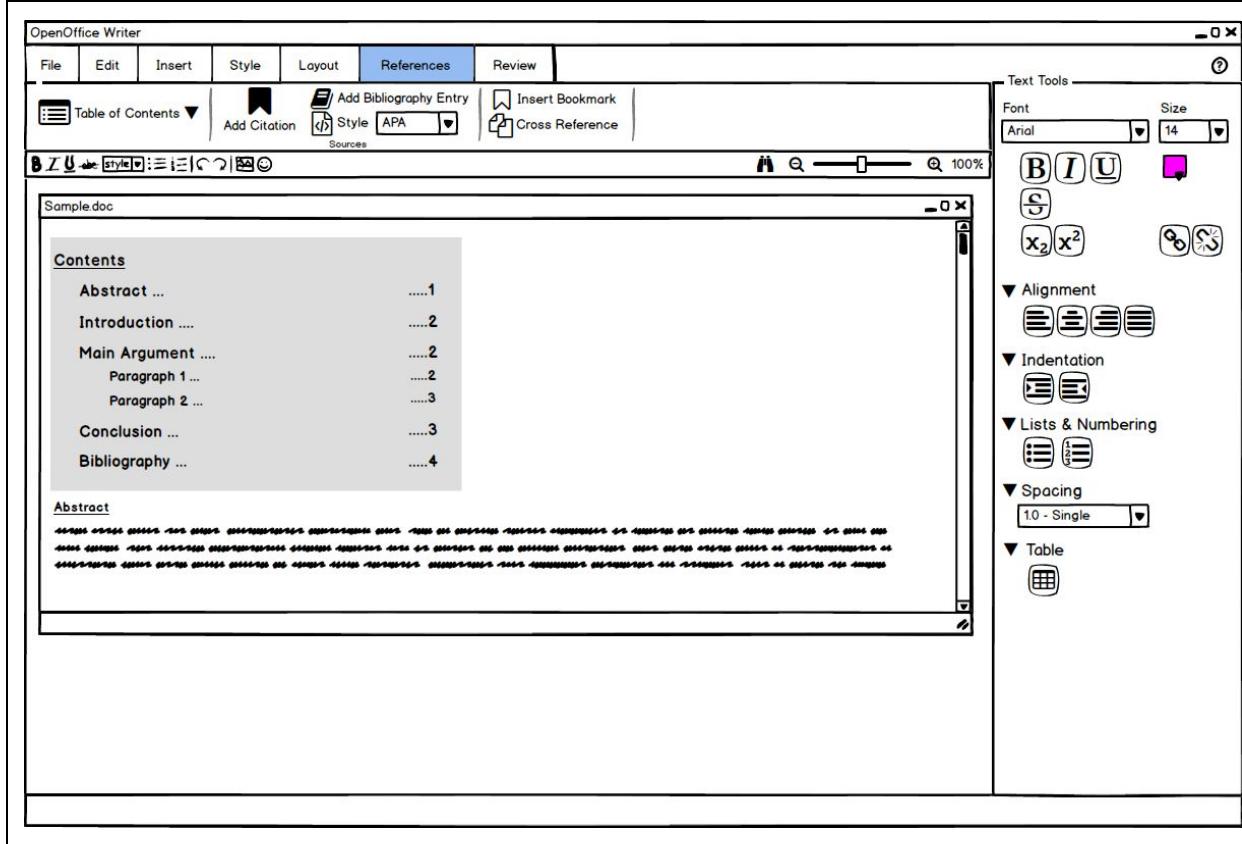
**Step 4:** Jane wishes to add a Table of Contents to her document. She goes to the References Tab.



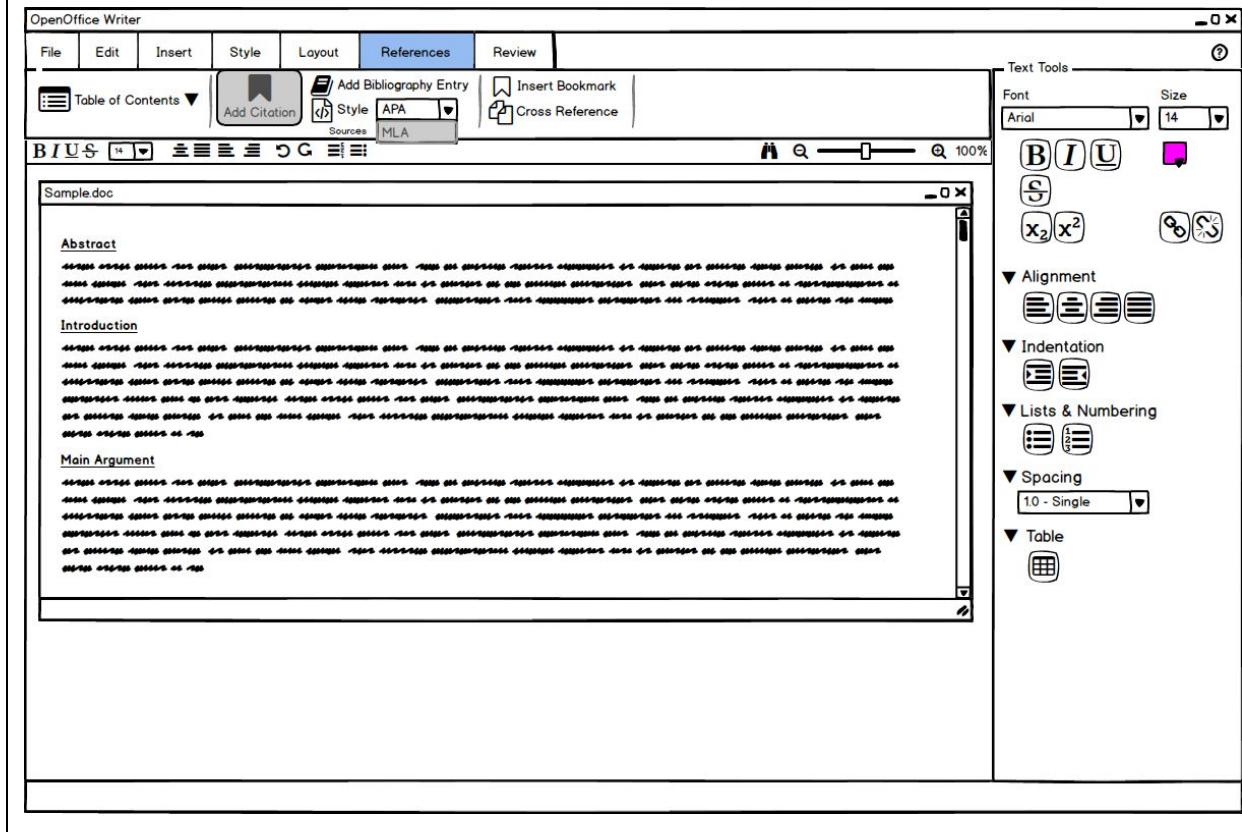
## Step 5: Jane clicks on the Table of Contents Button



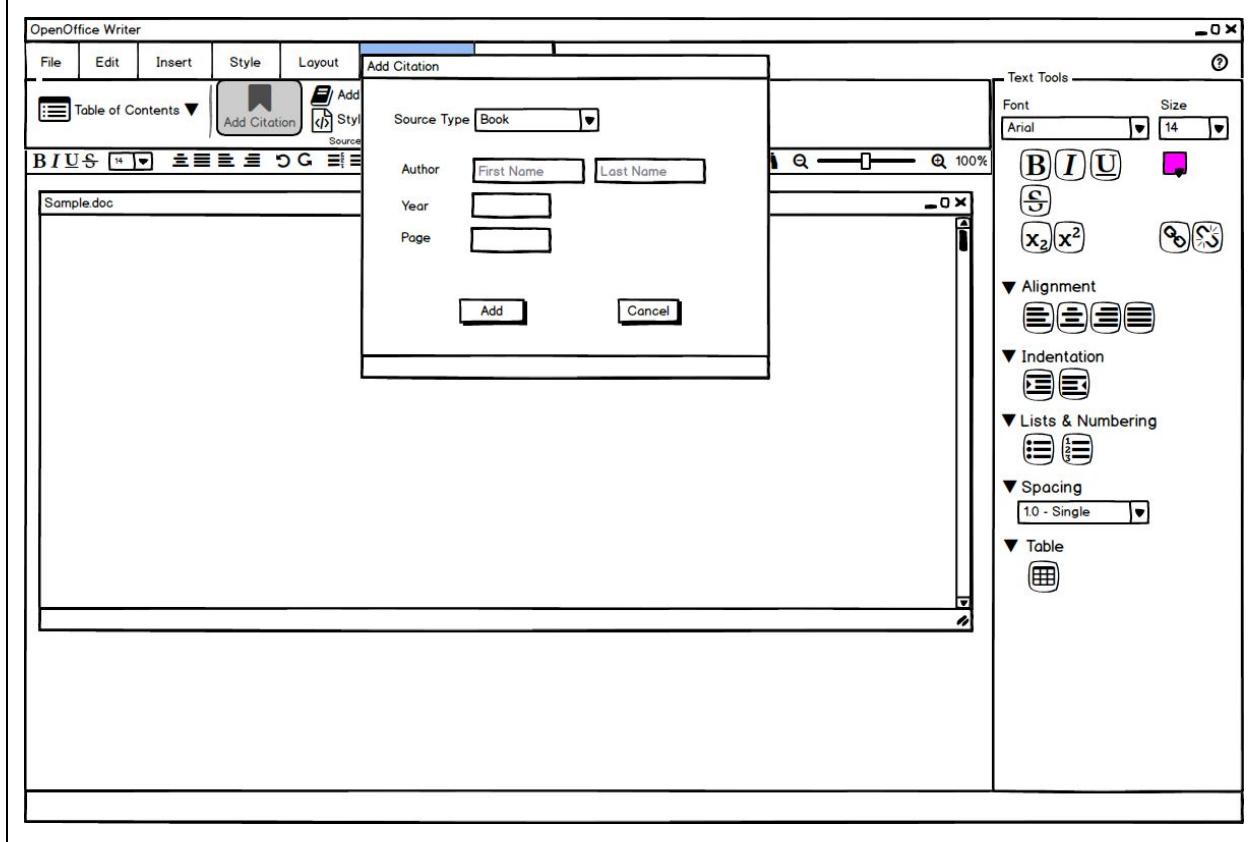
**Step 6:** Jane selects the Automatic Table of Contents option. Each heading in the Table of Contents is a hyperlink to its respective location bookmark (which is also created by default) in the document.



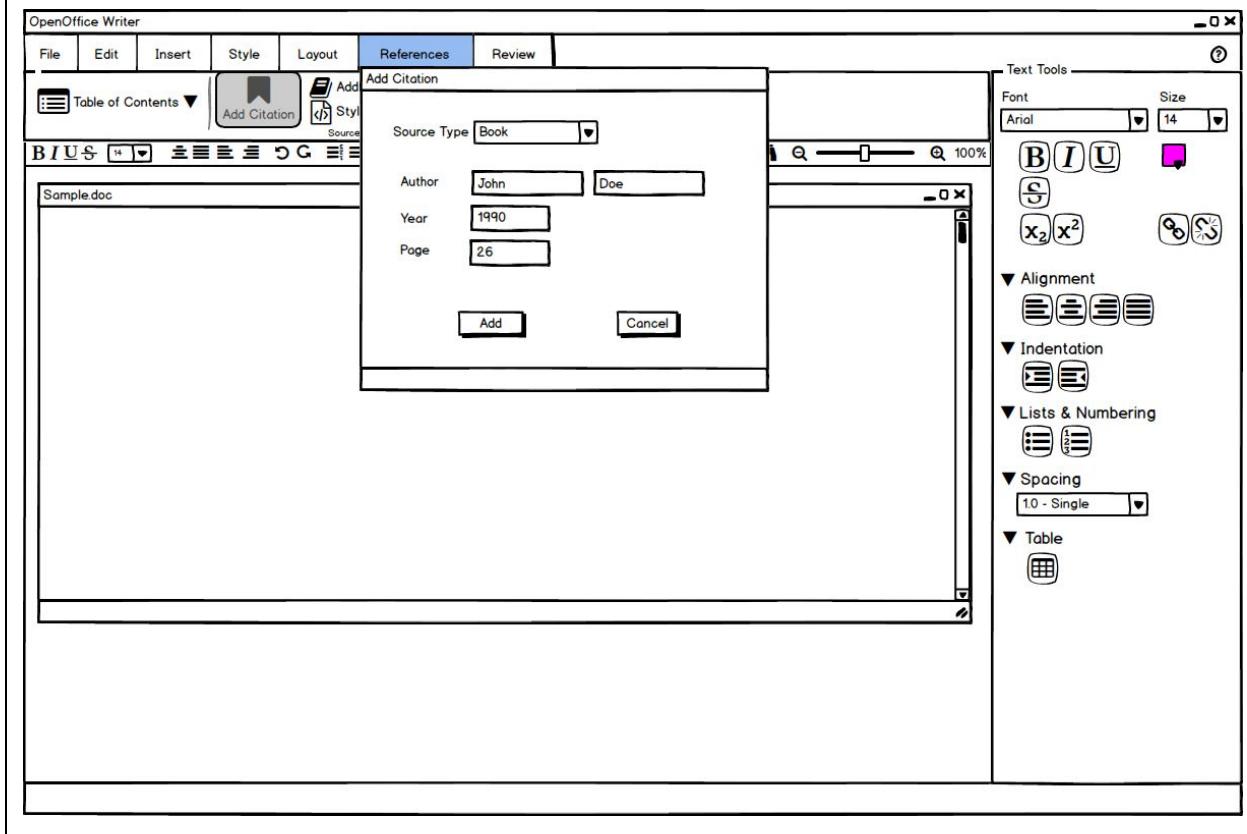
**Step 7:** Jane wishes to start citing her sources in MLA format. She clicks on the **Style** drop-down menu in the References Menu and selects 'MLA'.



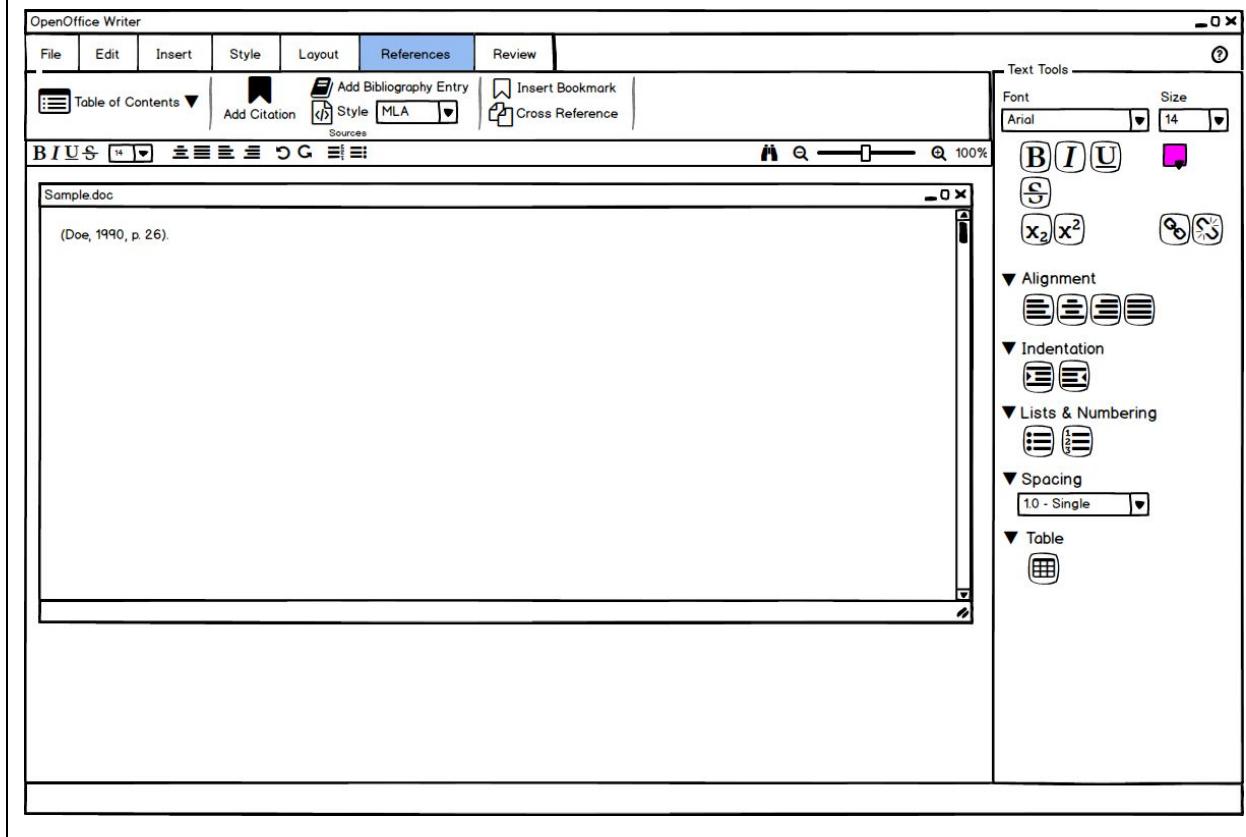
**Step 8:** Jane wishes to add a Citation for the book 'User Research Methodologies', by John Doe. She clicks on the **Add Citation Button**.



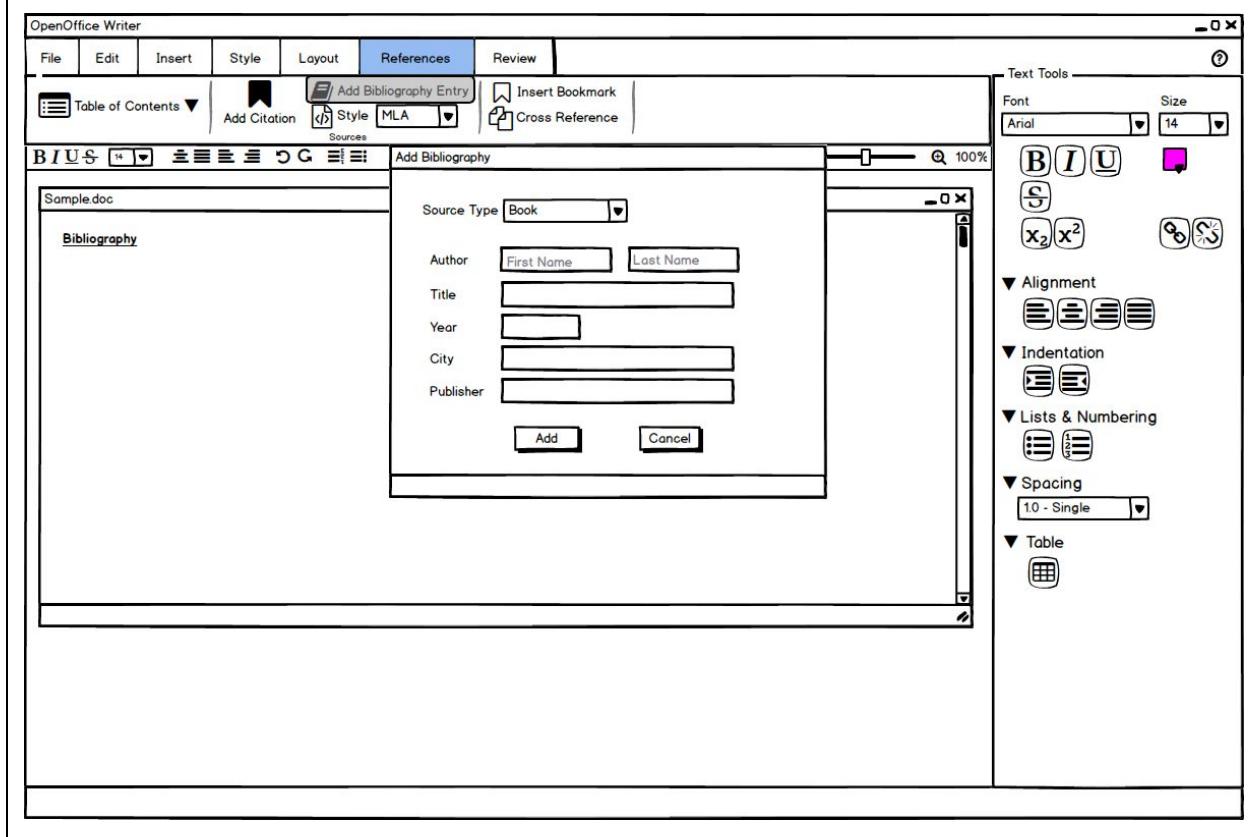
**Step 9:** Using the dialog box Jane fills in the required information and clicks on the Add Button.



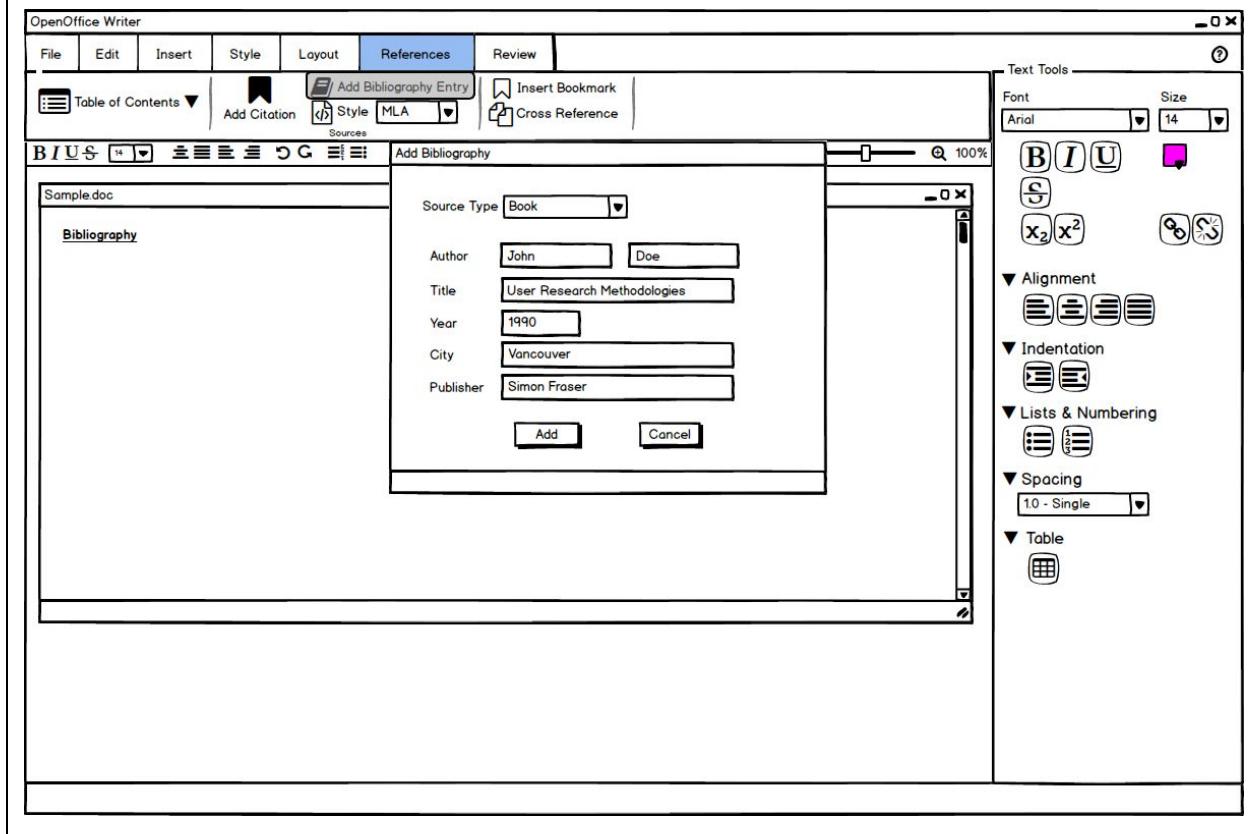
## Step 10: The Citation is added to the document.



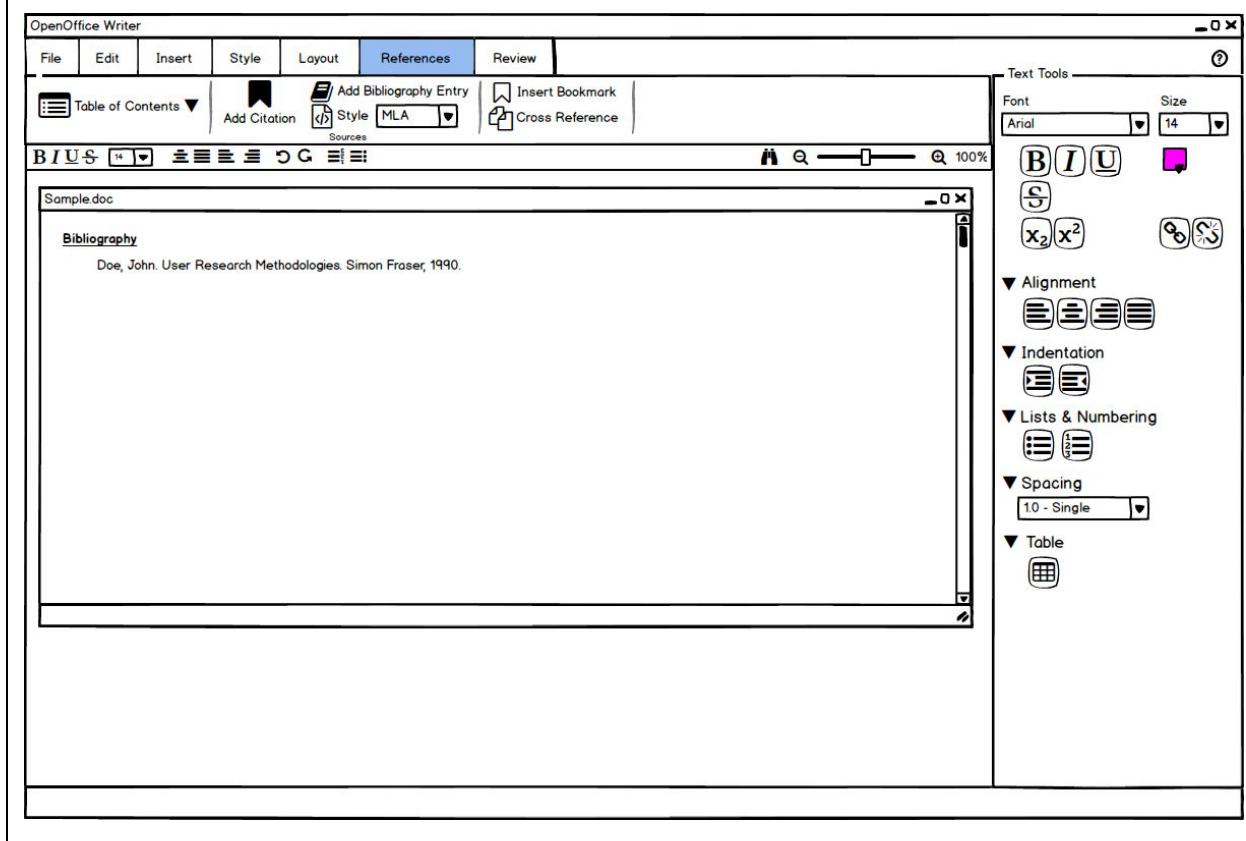
**Step 11:** Jane wishes to add a Bibliography Entry for the book 'User Research Methodologies', by John Doe. She clicks on the Add Bibliography Button.



**Step 12:** Using the dialog box, Jane fills in the required information and clicks on the Add Button.



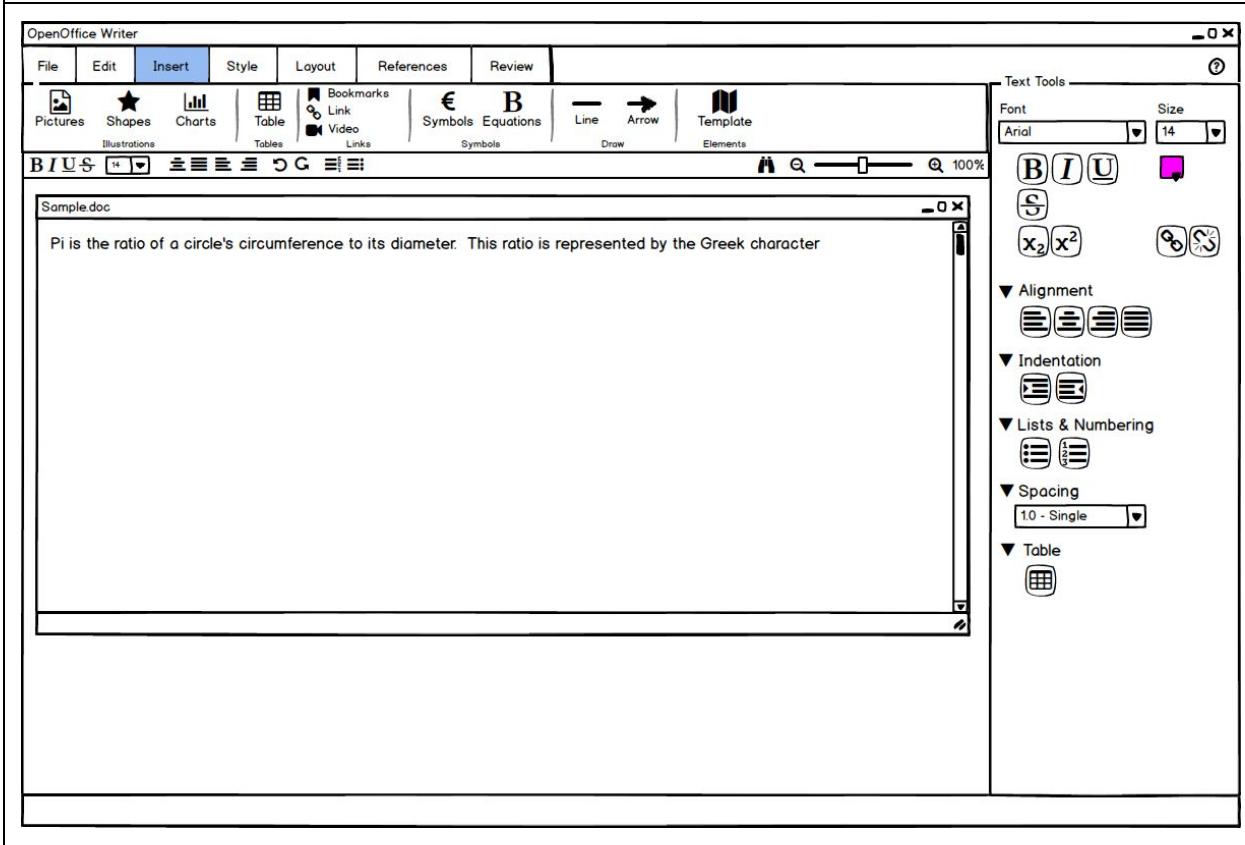
### Step 13: The bibliography is added to the document.



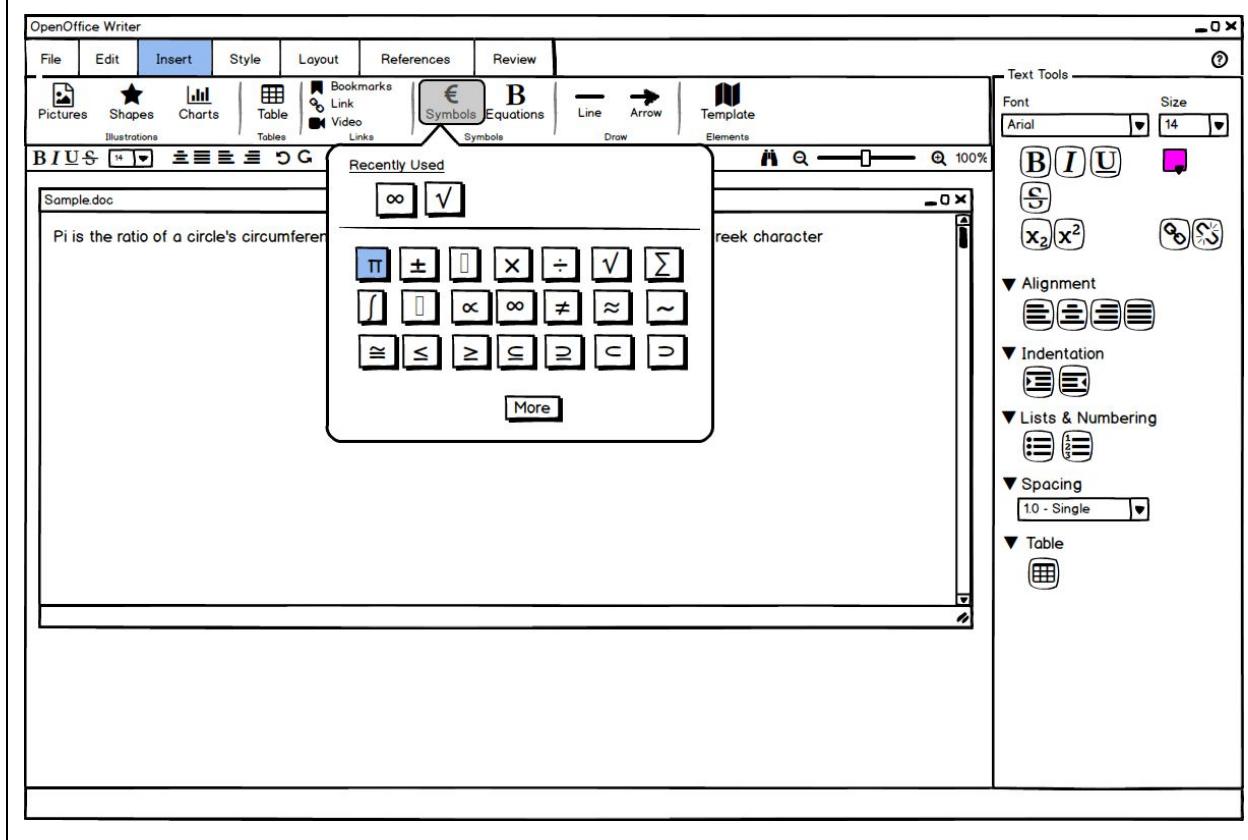
End of Design Scenario #1

## Design Scenario #2

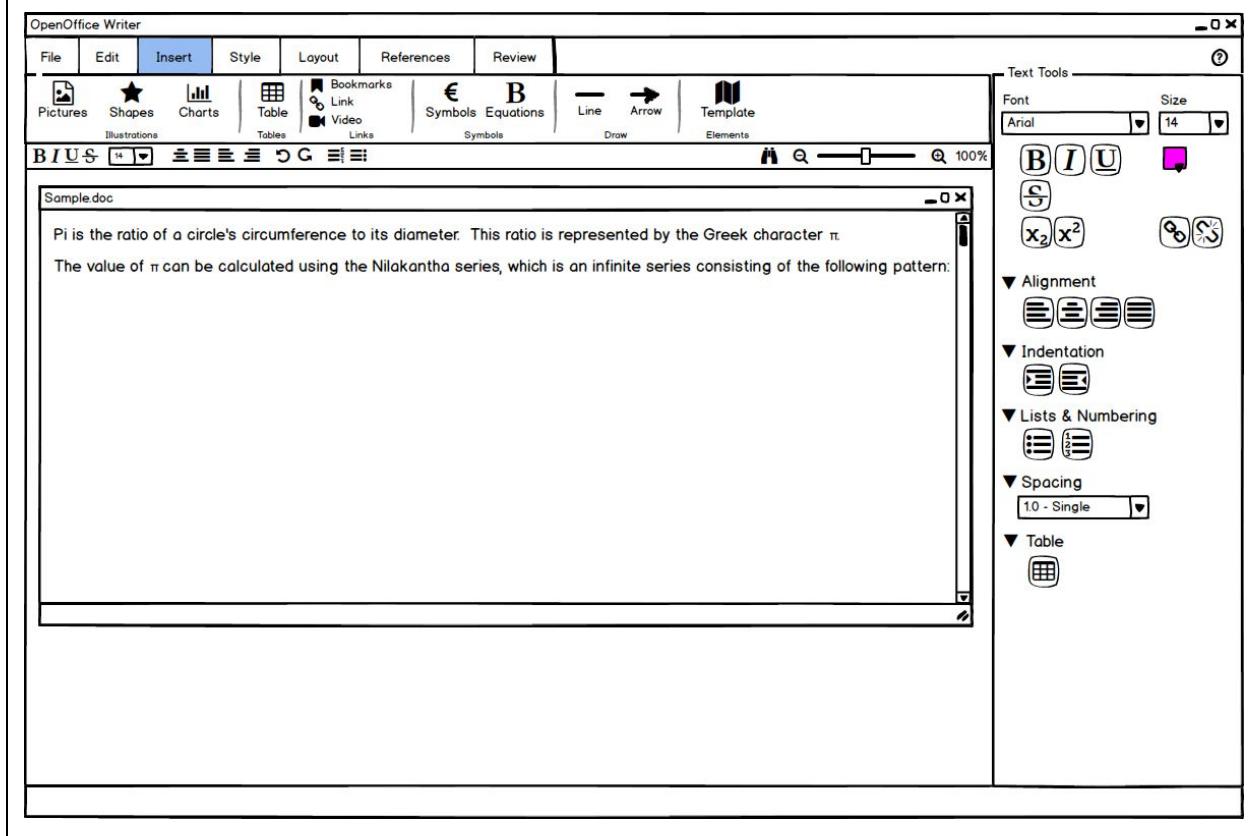
**Step 1:** Herman wishes to insert the mathematical symbol for pi. He **clicks on the Insert Tab**.



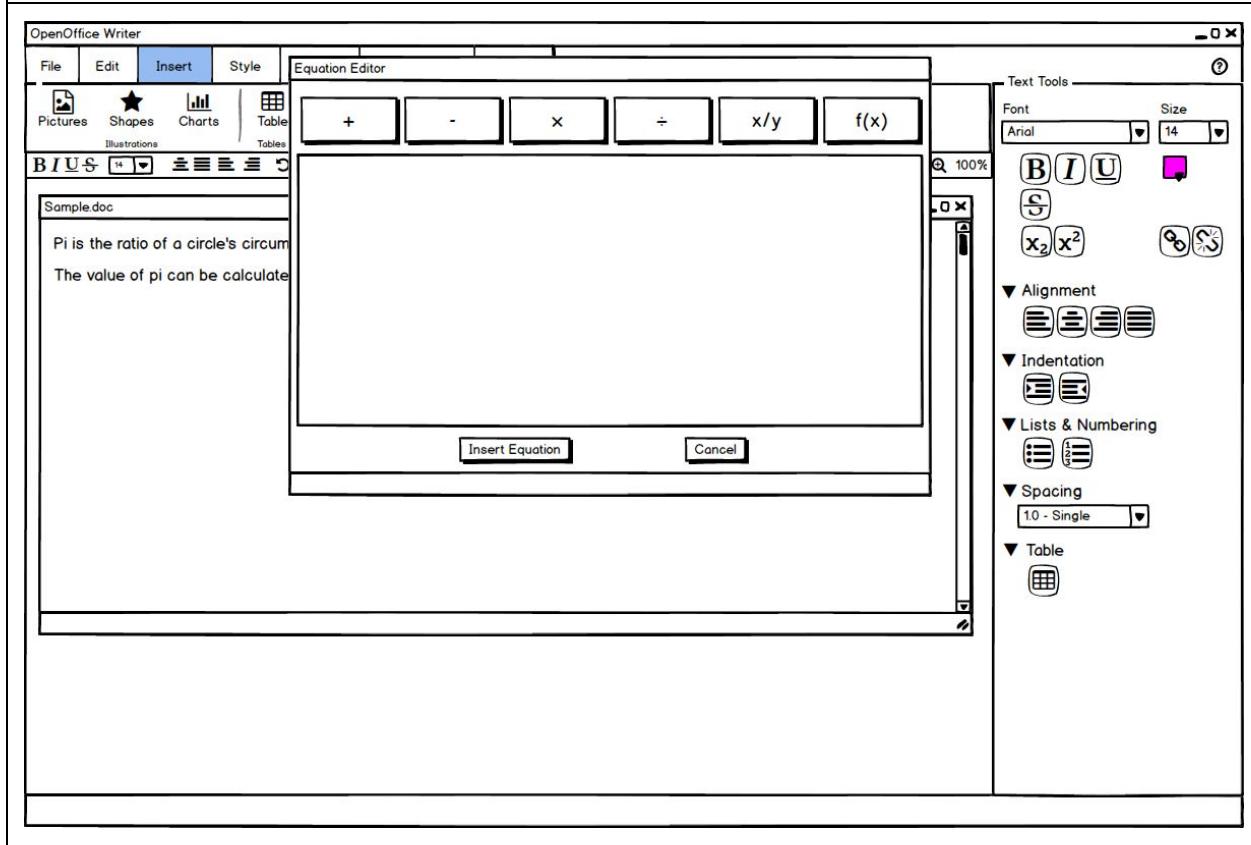
**Step 2:** Herman clicks on the Symbols Button. A popover appears listing some possible Symbols he can choose, including the Symbol for pi.



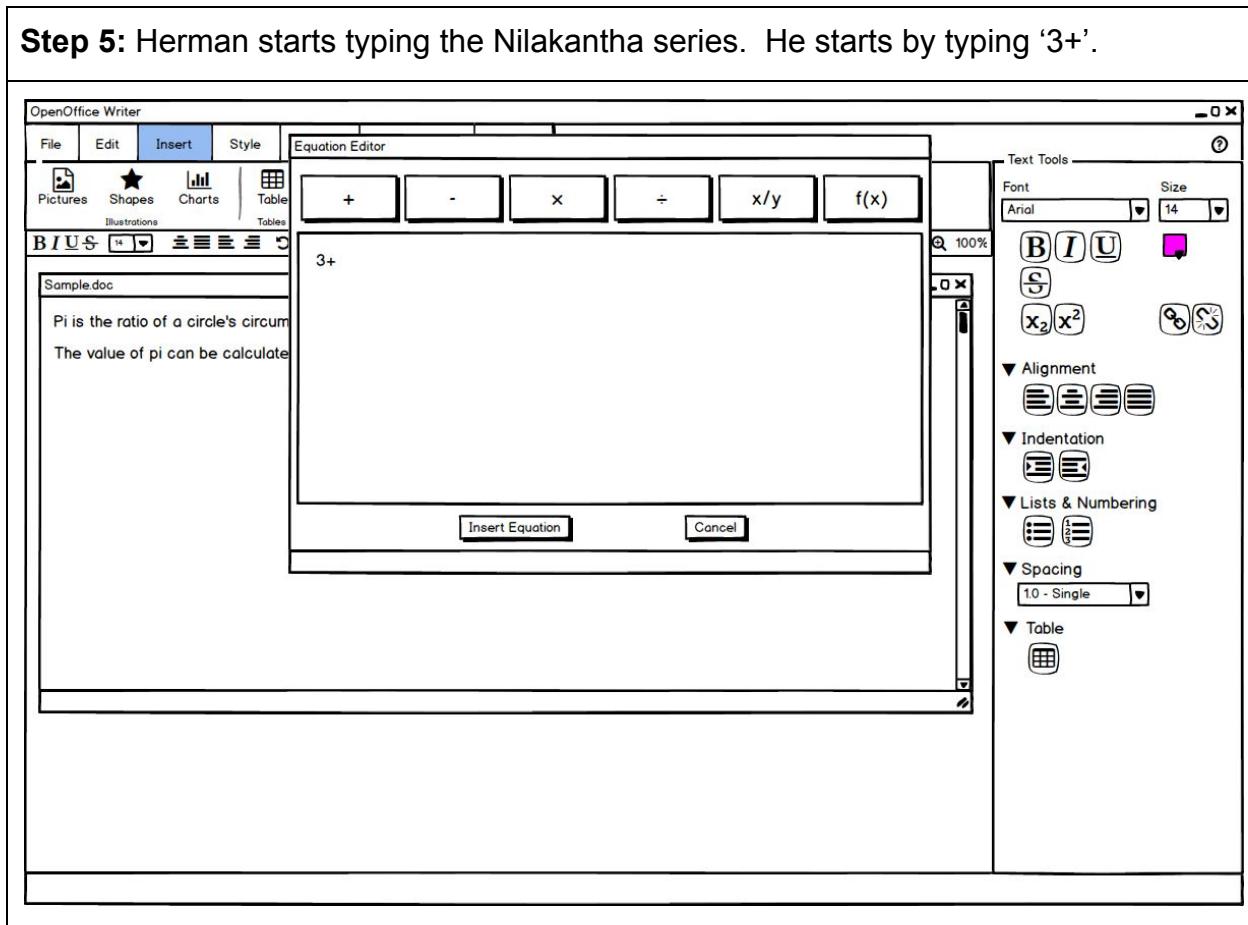
**Step 3: Herman selects the Symbol for pi.** The Symbol for pi is inserted into the document.



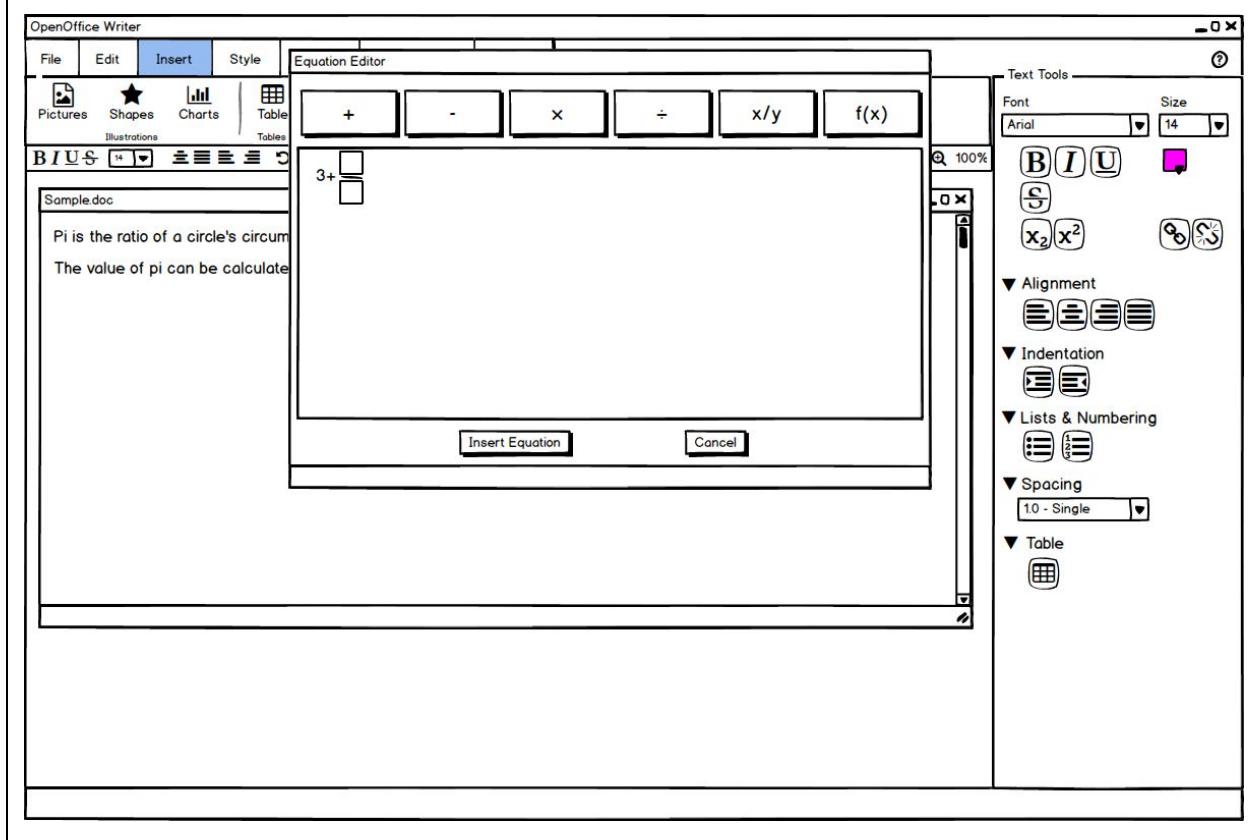
**Step 4:** Herman now wishes to insert an equation. He **clicks on the Equation Button**. The Equation Editor appears as a dialog box..



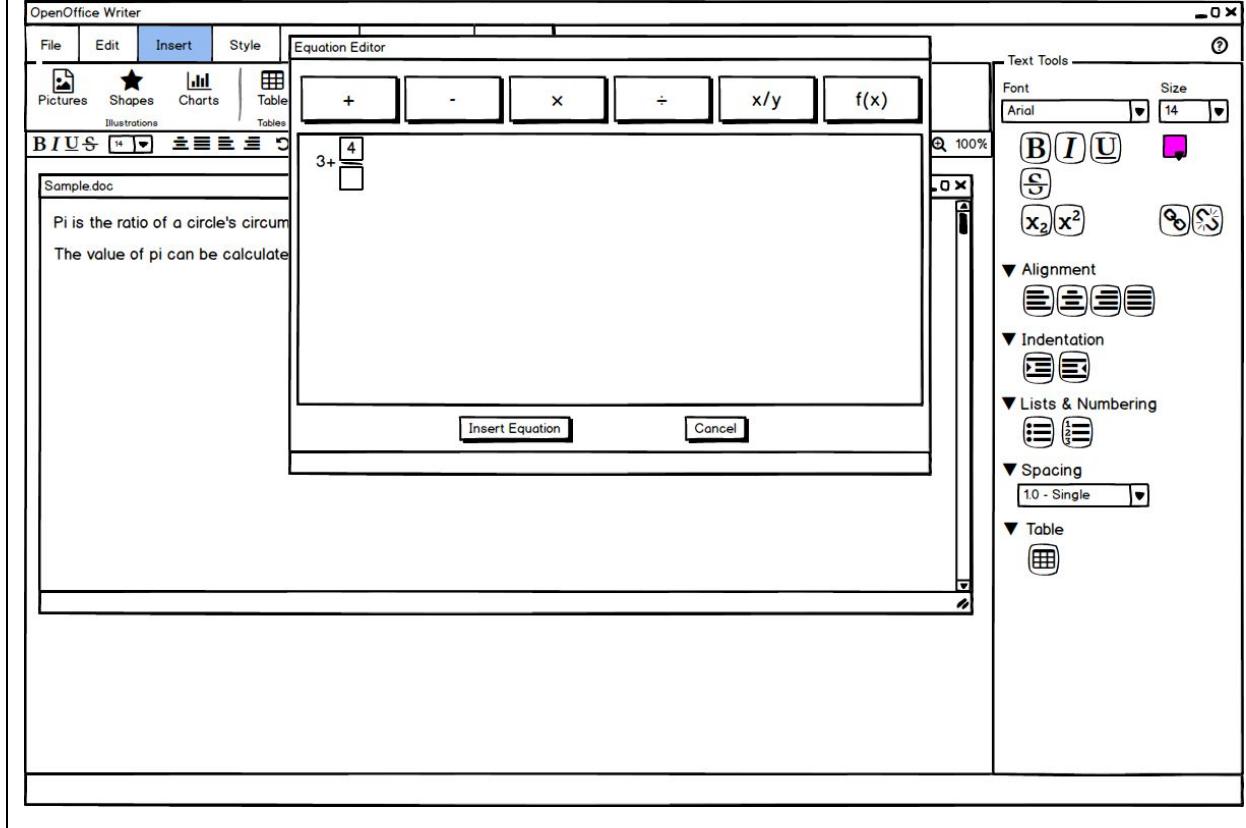
**Step 5:** Herman starts typing the Nilakantha series. He starts by typing '3+'.



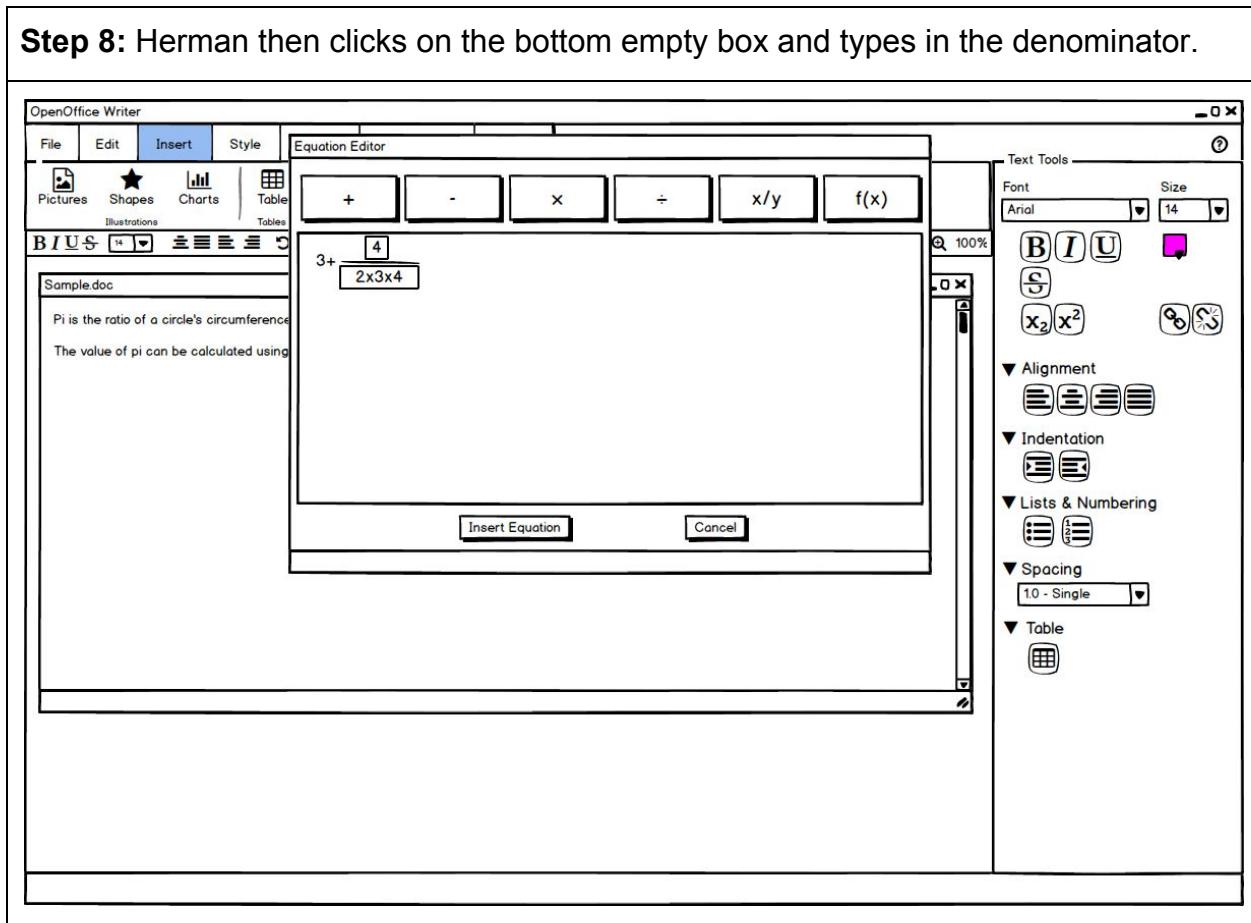
**Step 6:** Next, he needs to create a fraction. So he selects the Fraction button. An empty fraction appears in the Equation Editor.



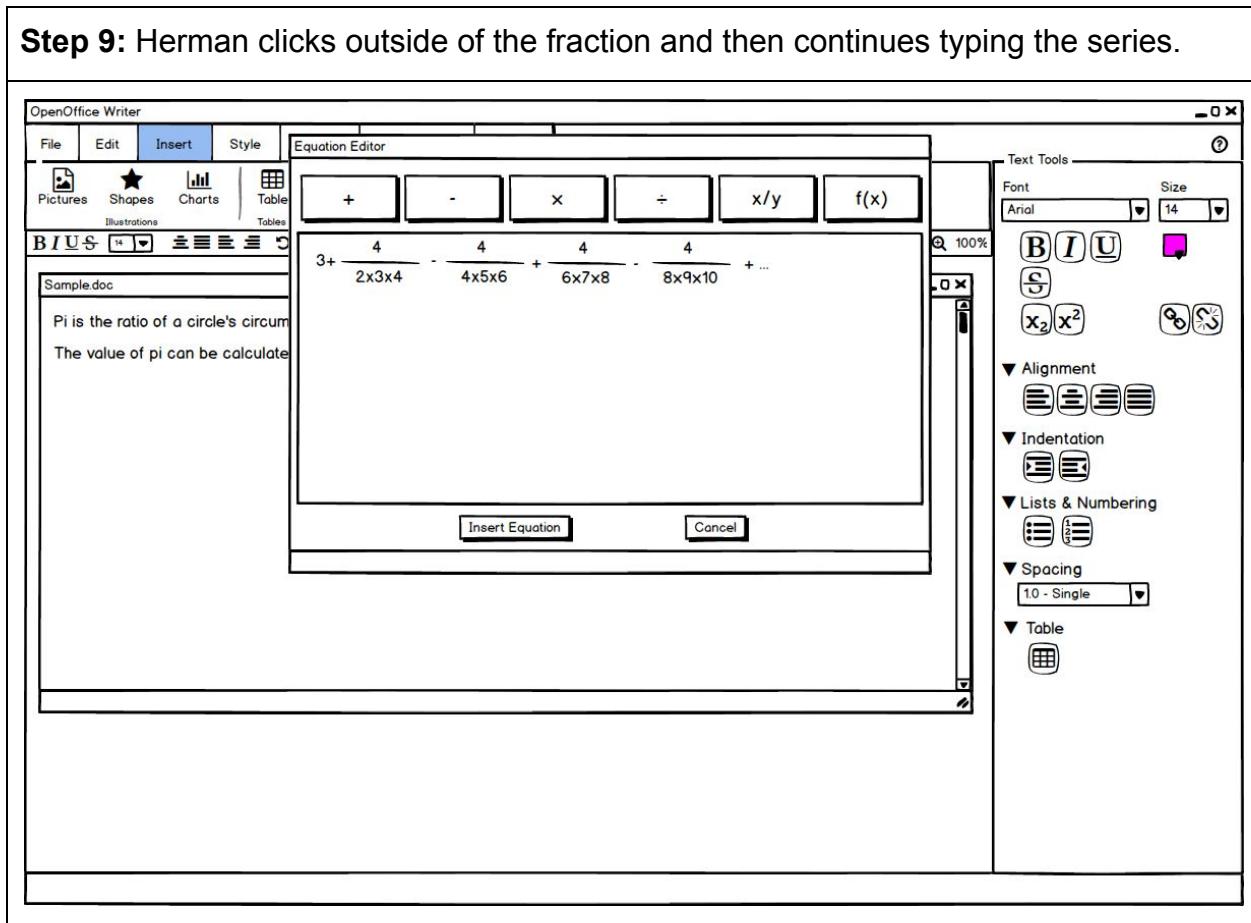
**Step 7:** Herman clicks on the top empty box and types in the numerator.



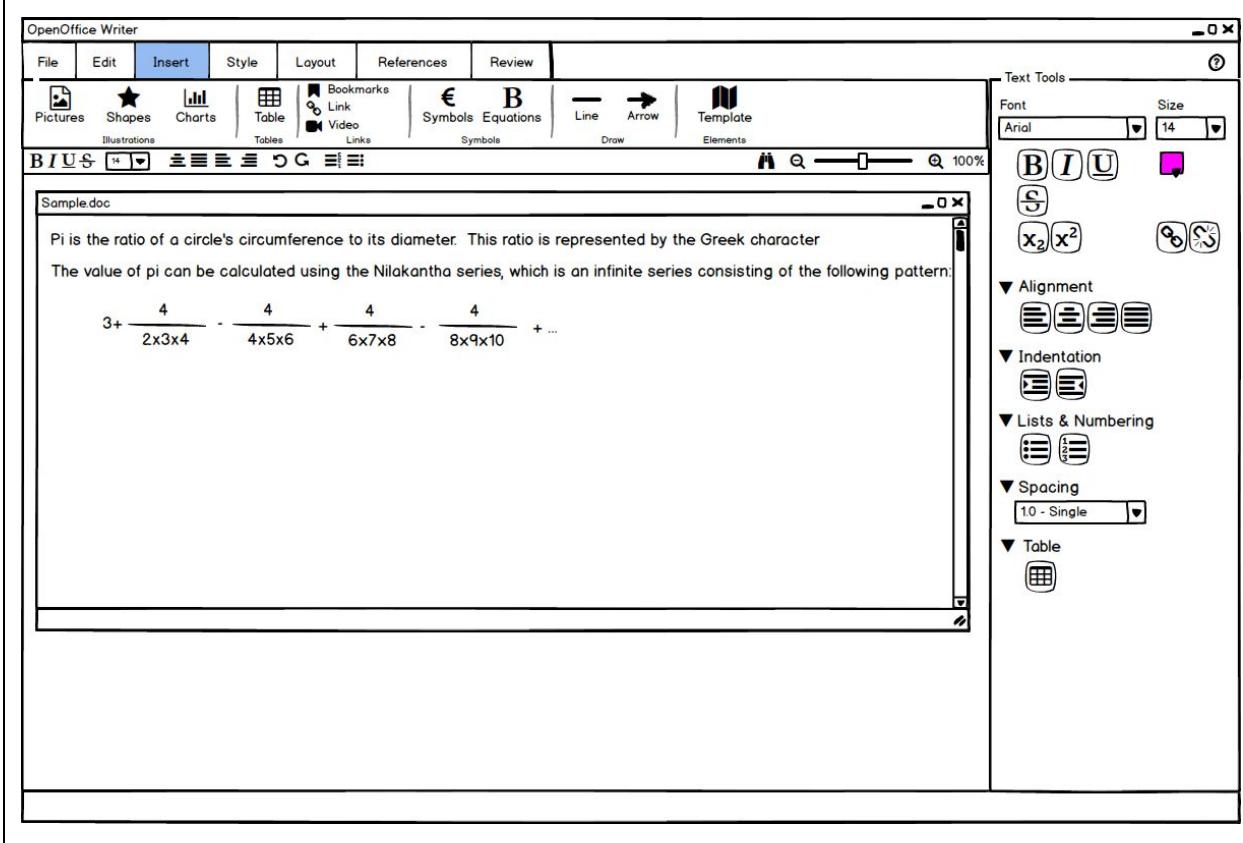
**Step 8:** Herman then clicks on the bottom empty box and types in the denominator.



**Step 9:** Herman clicks outside of the fraction and then continues typing the series.



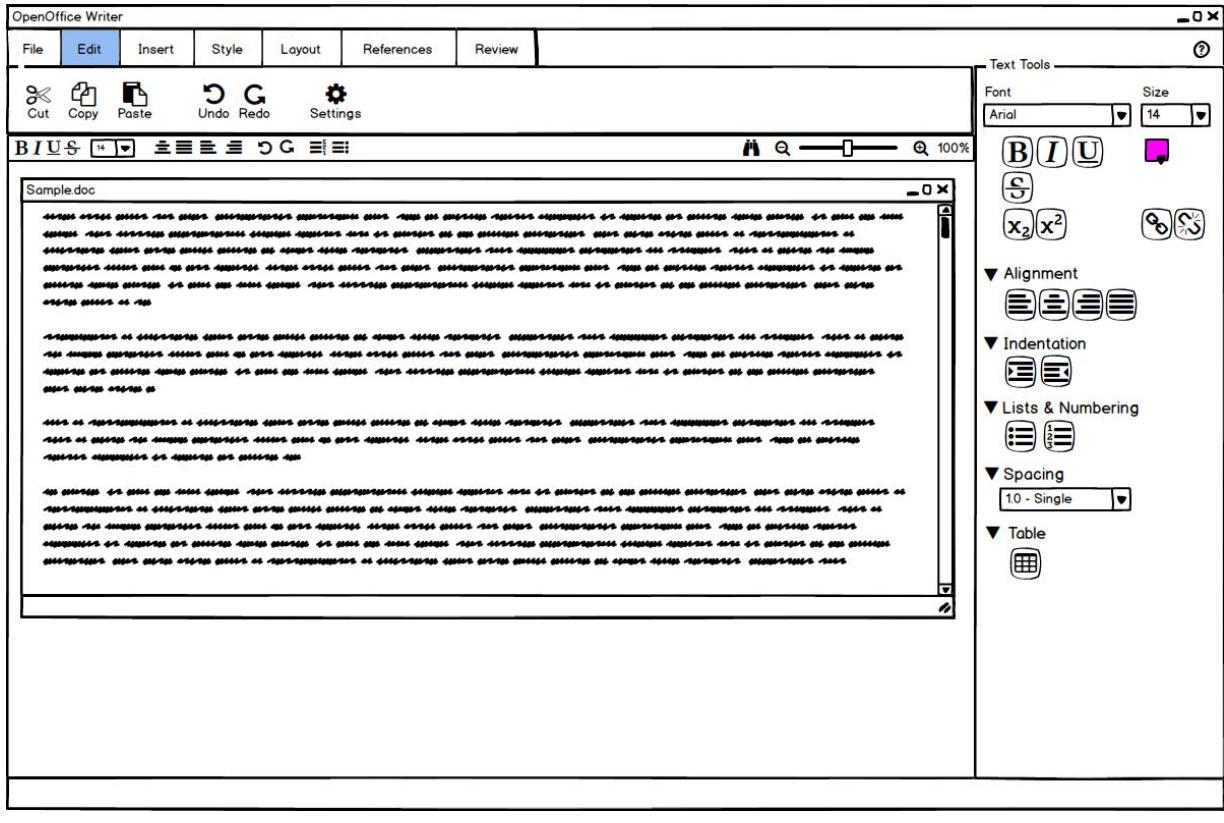
**Step 10:** Once he is done, he clicks on Insert Equation. The Equation is inserted into the document.



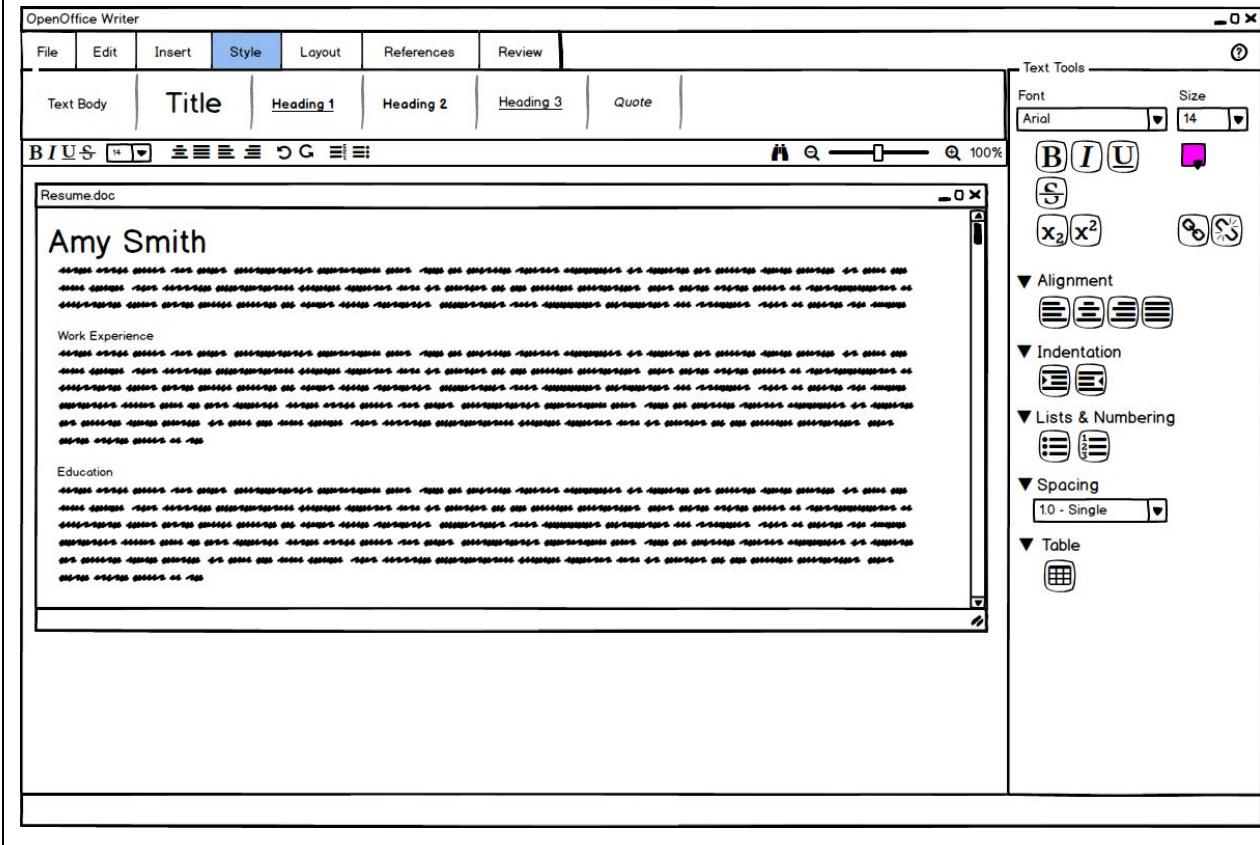
**End of Design Scenario #2**

## Design Scenario #3

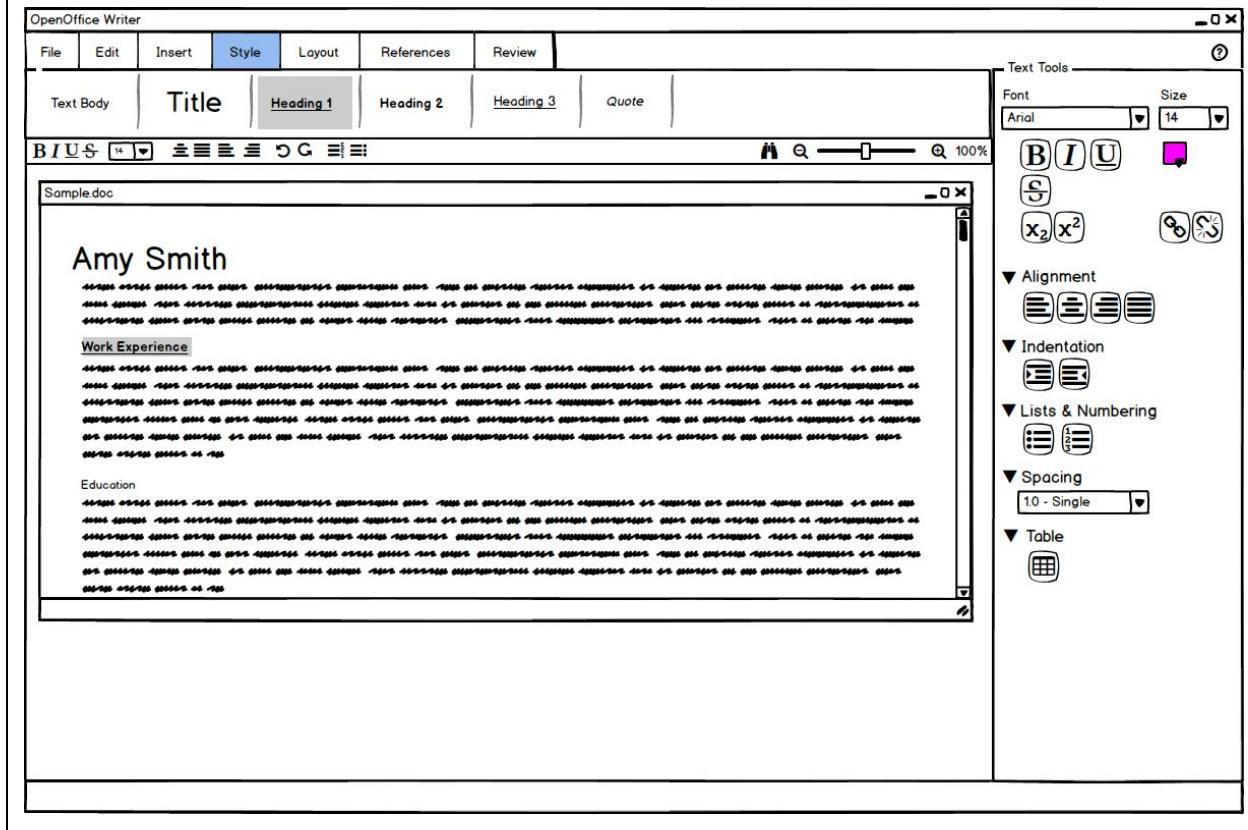
**Step 1:** Amy writes a resume with headers such as “Work Experience”, “Projects”, “Education”, etc.



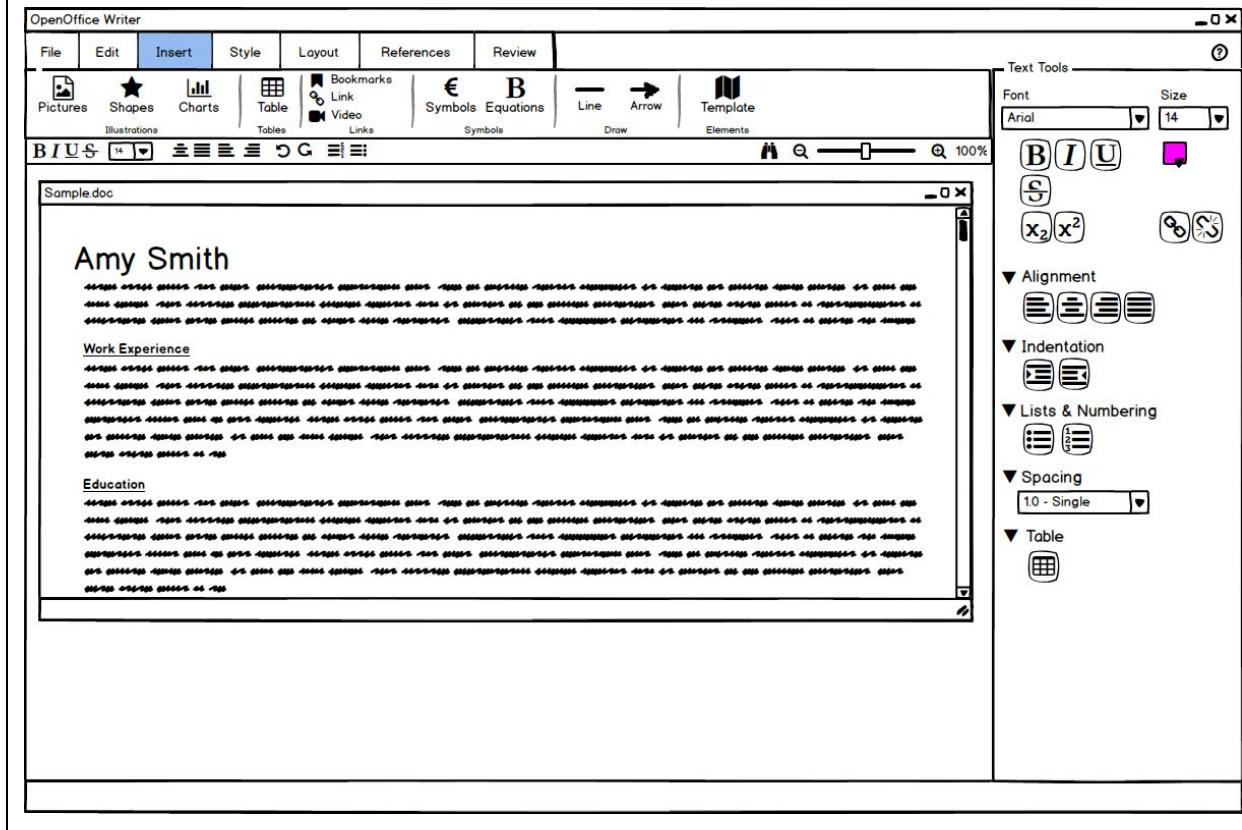
**Step 2:** Amy now wants to add a consistent style to each of her Headers. She goes to the **Style Tab**.



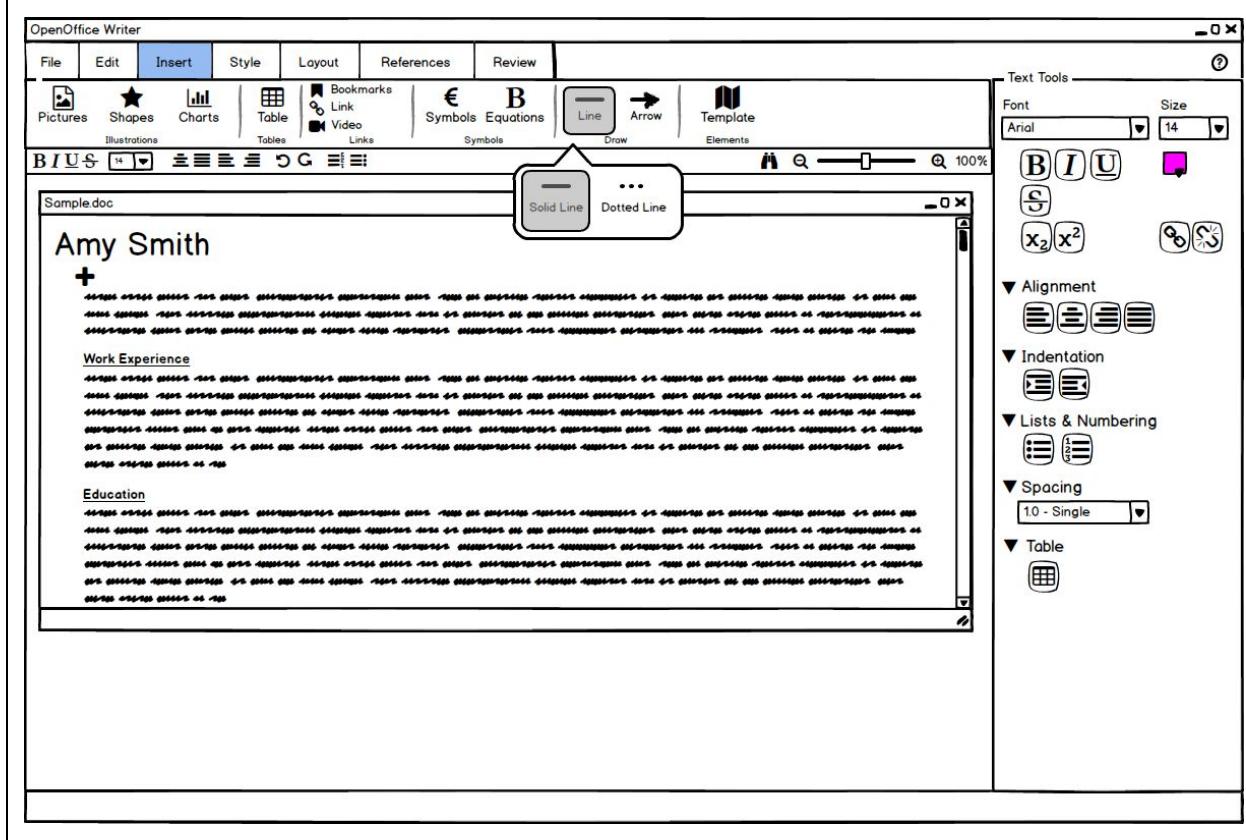
**Step 3:** Amy uses her cursor to select the 'Work Experience' header. She clicks on the '**Header 1**' Style in the Style Menu to apply it to the 'Work Experience' header. She repeats this step for all of the headers in each section.



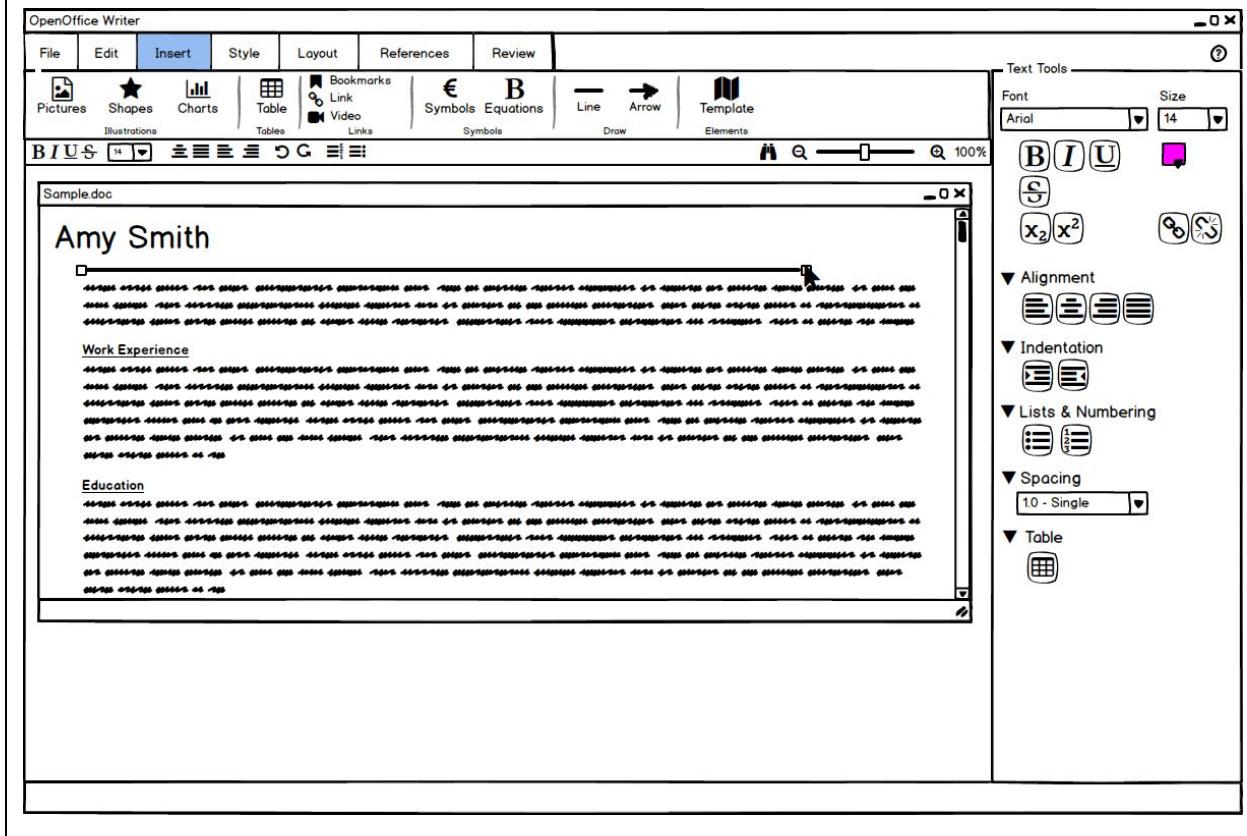
**Step 4:** Amy would now like to add separator lines to her resume for aesthetic purposes. She clicks on the **Insert tab**.



**Step 5:** Amy clicks on the **Line** tool in the **Insert tab** to begin inserting lines. Solid lines are selected by default. The cursor changes to a + to denote that the line tool is active. The line type selection popup box automatically disappears when she begins drawing.



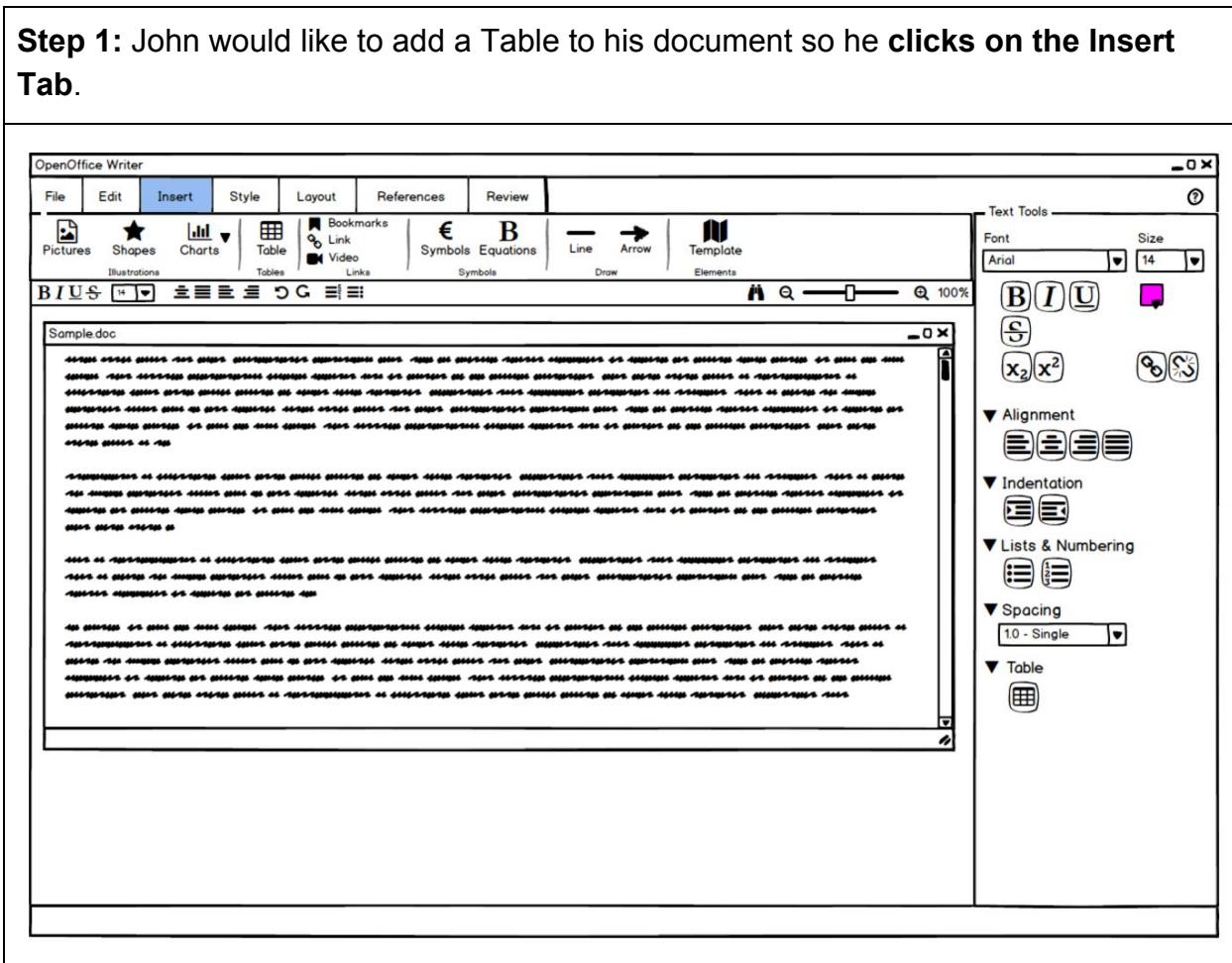
**Step 6:** Amy clicks on the location where she wants to draw the line, and begins to draw the line. As the line is being drawn, two squares at the two ends of the line denote that the line is currently selected, and Amy may manipulate the length and orientation of the line using these two squares.



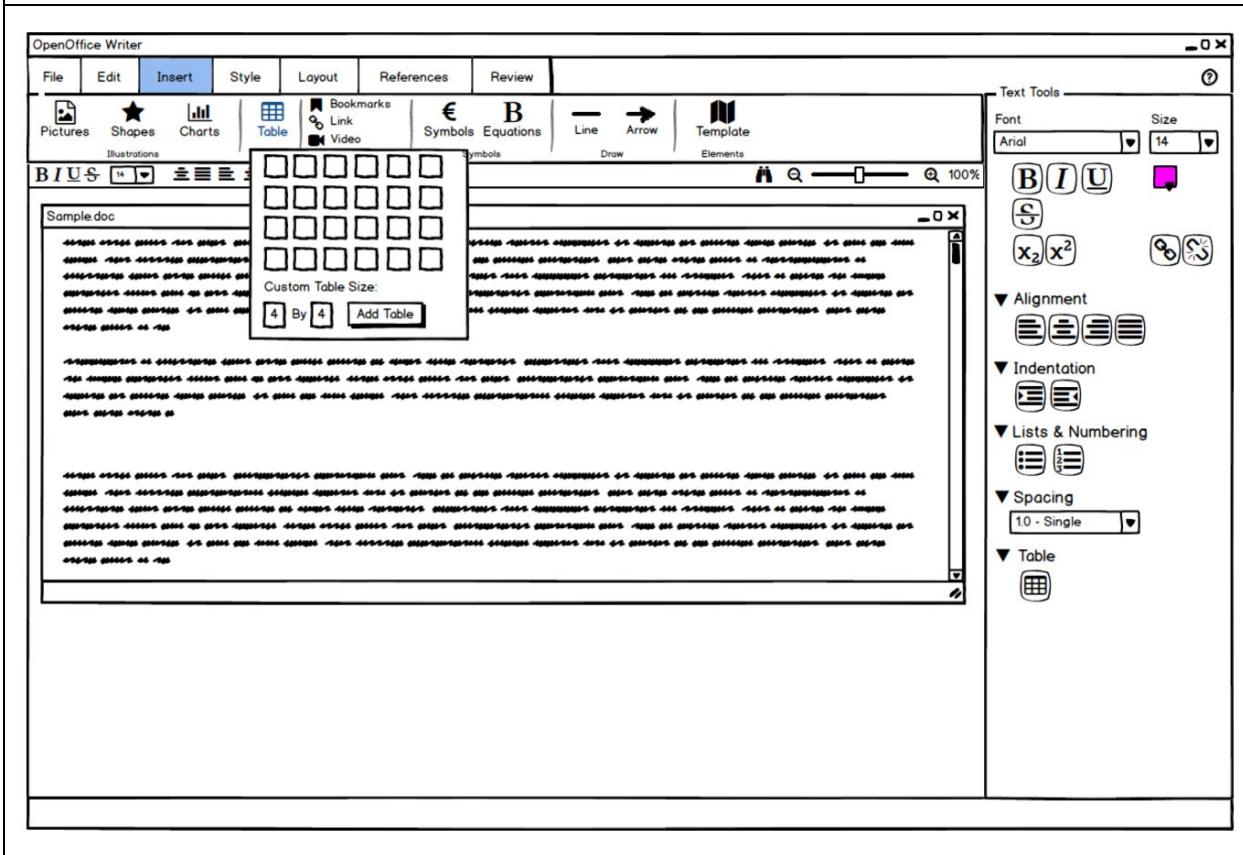
**End of Design Scenario #3**

## Design Scenario #4

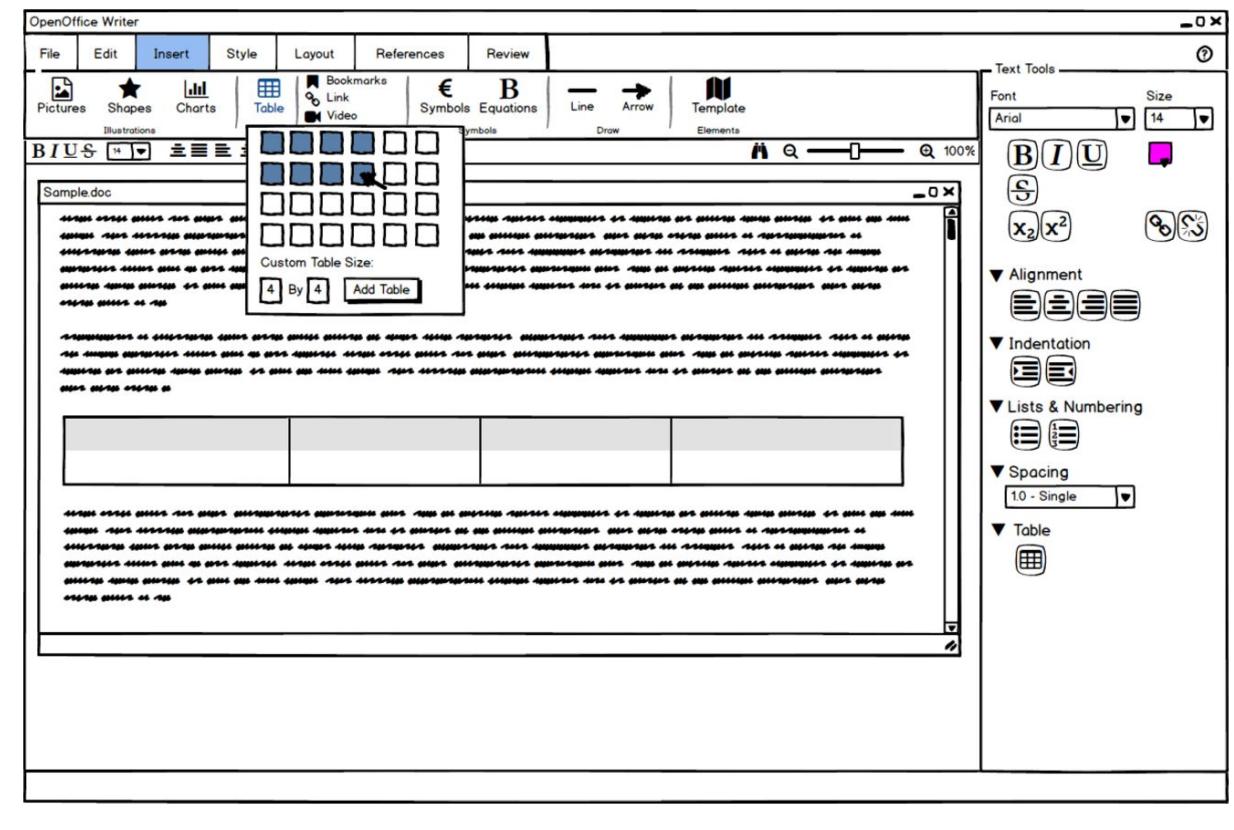
**Step 1:** John would like to add a Table to his document so he **clicks on the Insert Tab**.



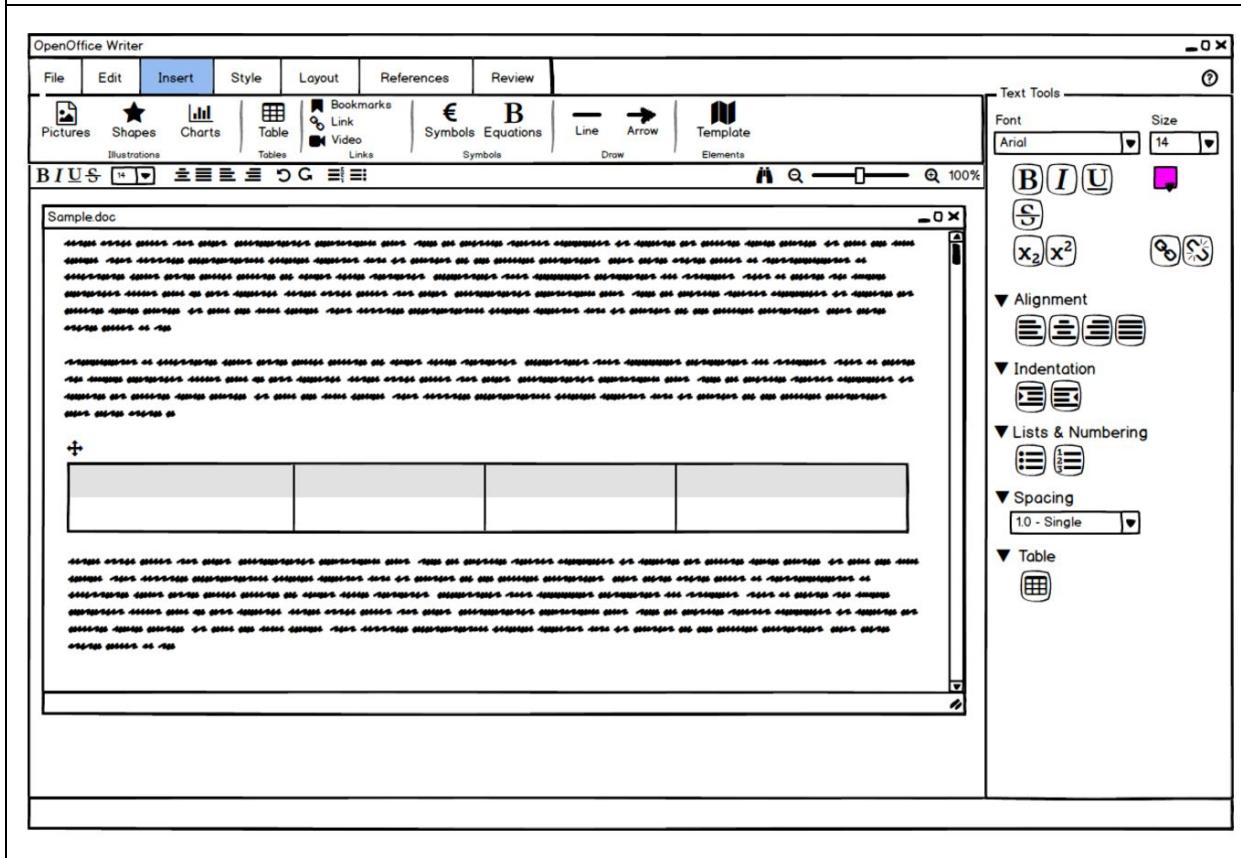
**Step 2:** John **clicks on Table Icon** and a popover appears that prompts him to determine size of table.



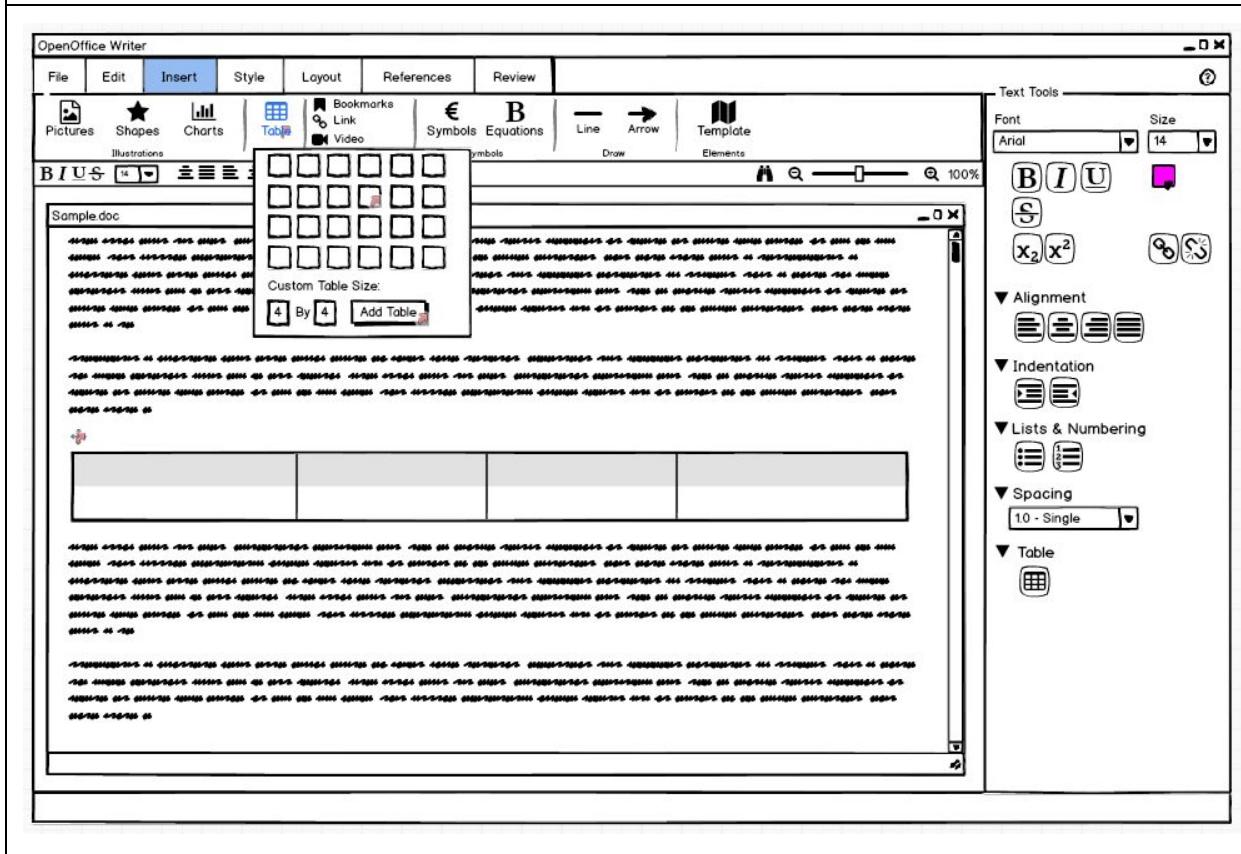
**Step 3:** John wishes to create a 2x4 table and for that reason, he **hovers mouse over table cell at second row and fourth column**. He also notices that OpenOffice Writer adds table to the document while John is hovering mouse on table cells.



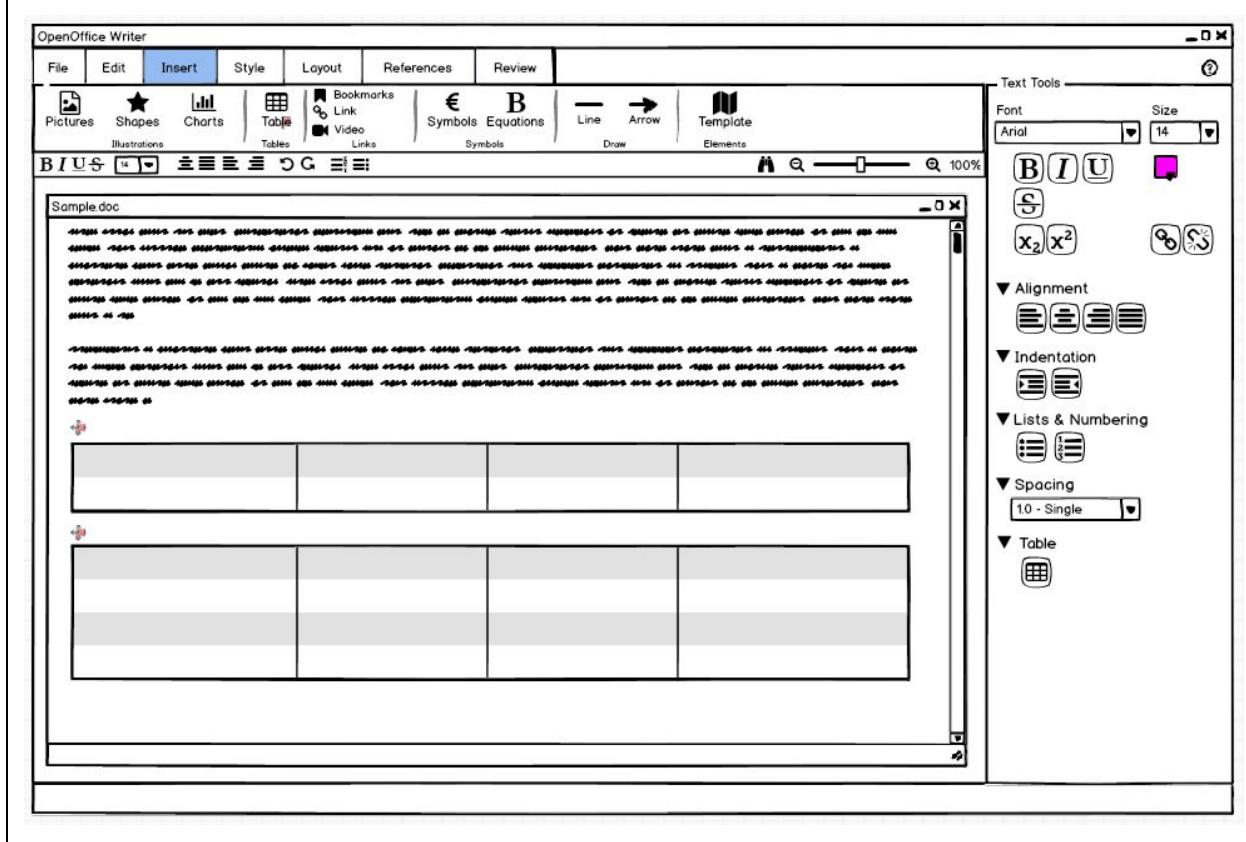
**Step 4:** John clicks on the cell at second row and fourth column to permanently add table to document and he notices that the popover disappears and the 2x4 table is added to the document.



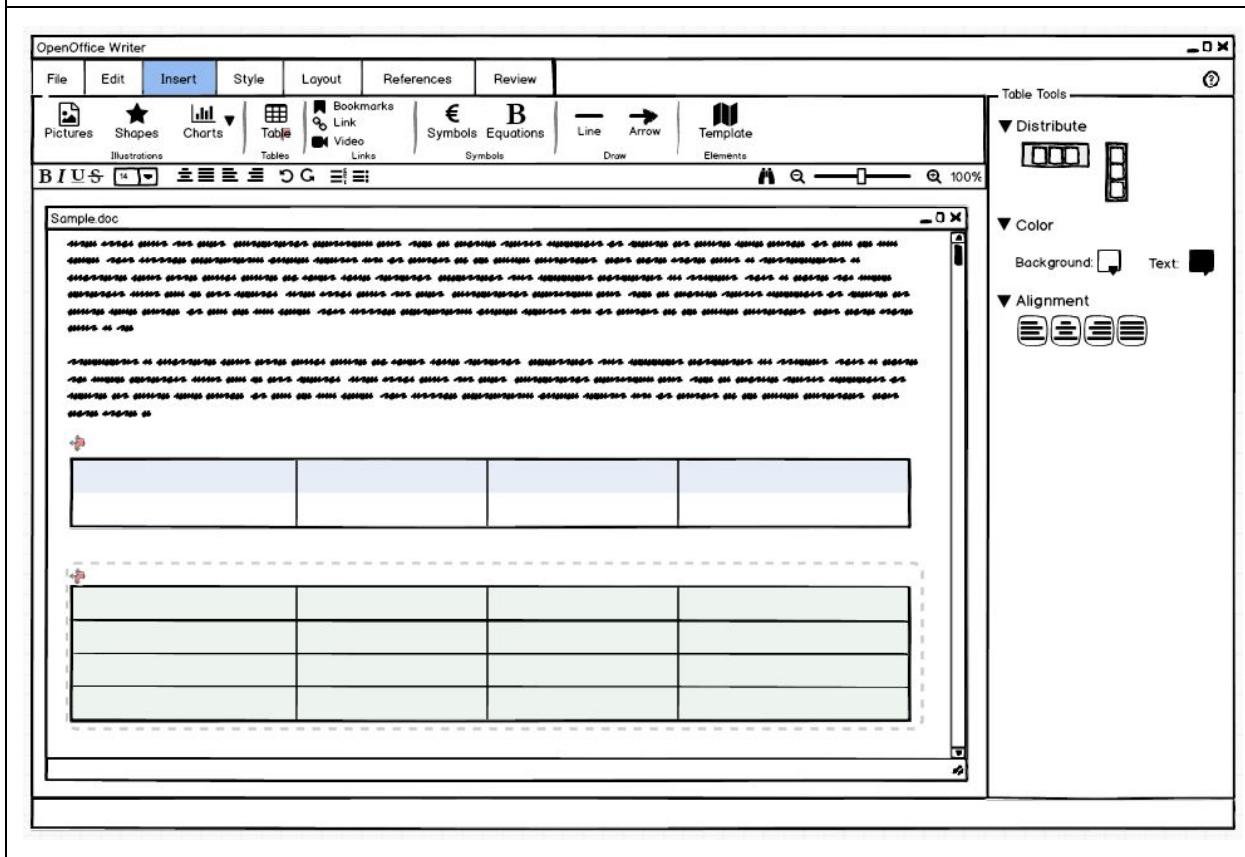
**Step 5:** John needs to add a second table and similar to step 2, he **clicks on Table icon in Insert Tab**, which popovers a table size selection dialog.



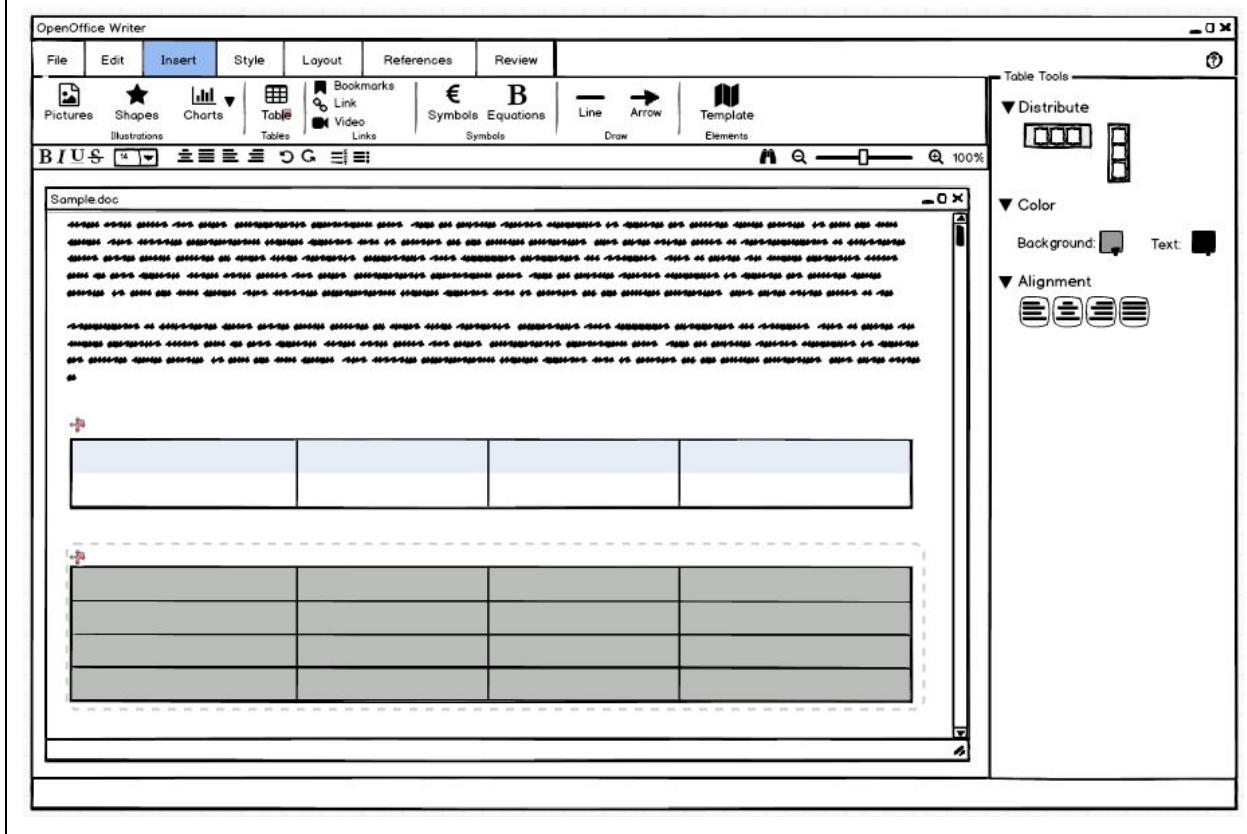
**Step 6:** John would like to add a 4x4 table and to do so, he clicks on Add Table button. A 4x4 table is added to document.



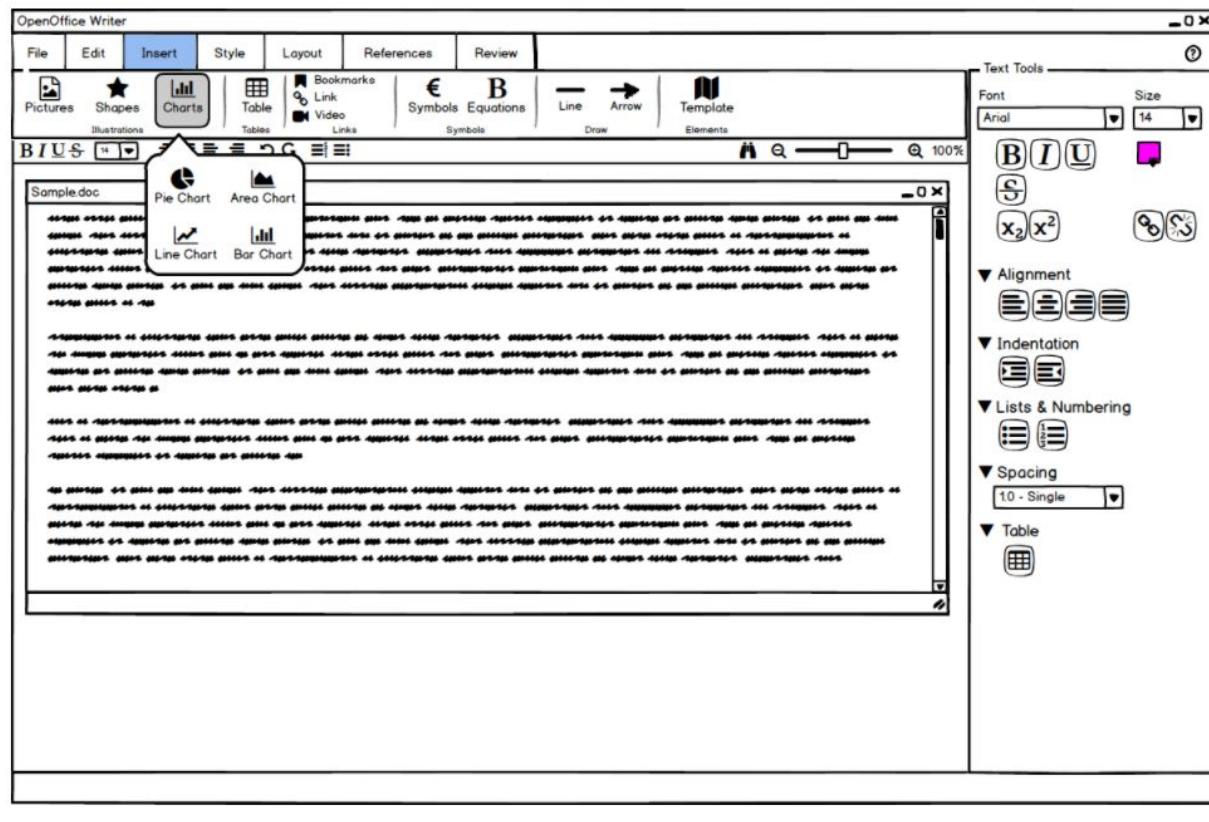
**Step 7:** John would like to change background color of the 4x4 table. So, he clicks on 4-arrow icon right above the table.



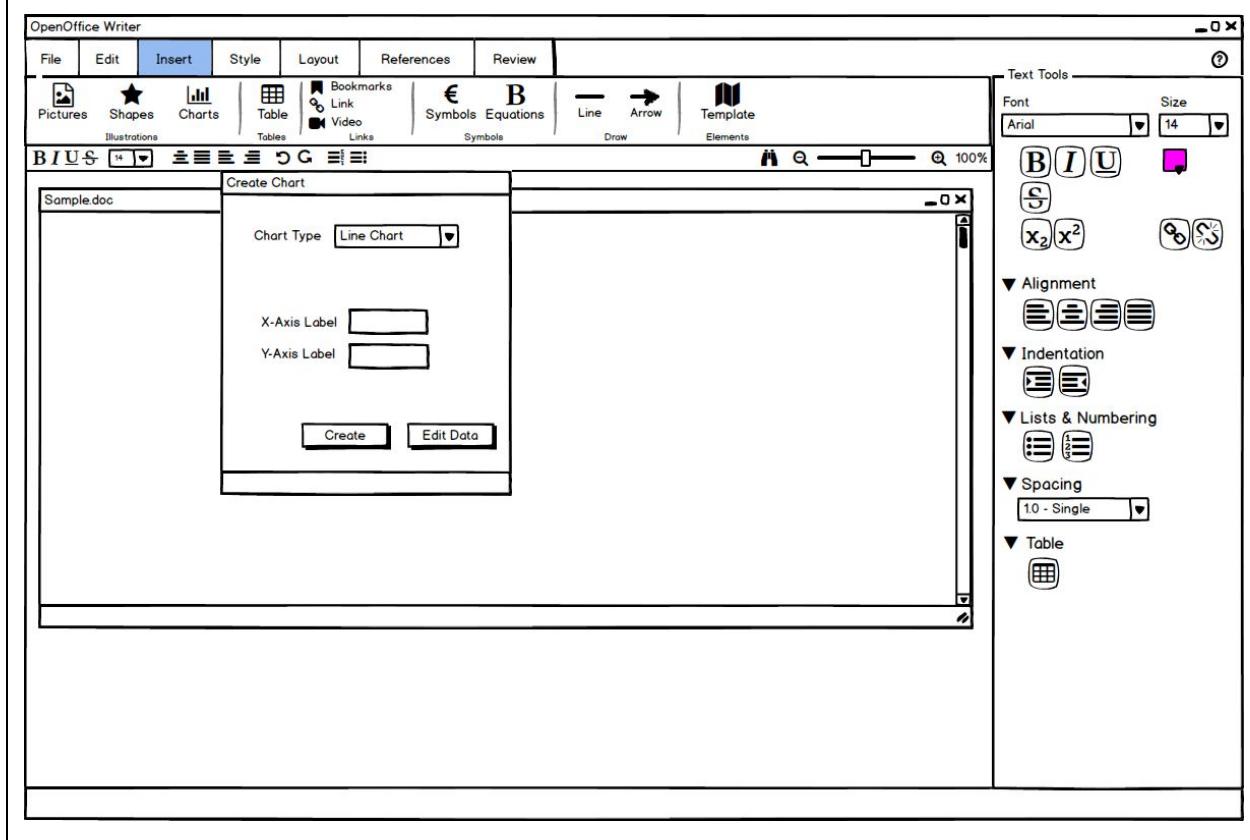
**Step 8: John clicks on desired background color in Table Tools panel and table background changes accordingly.**



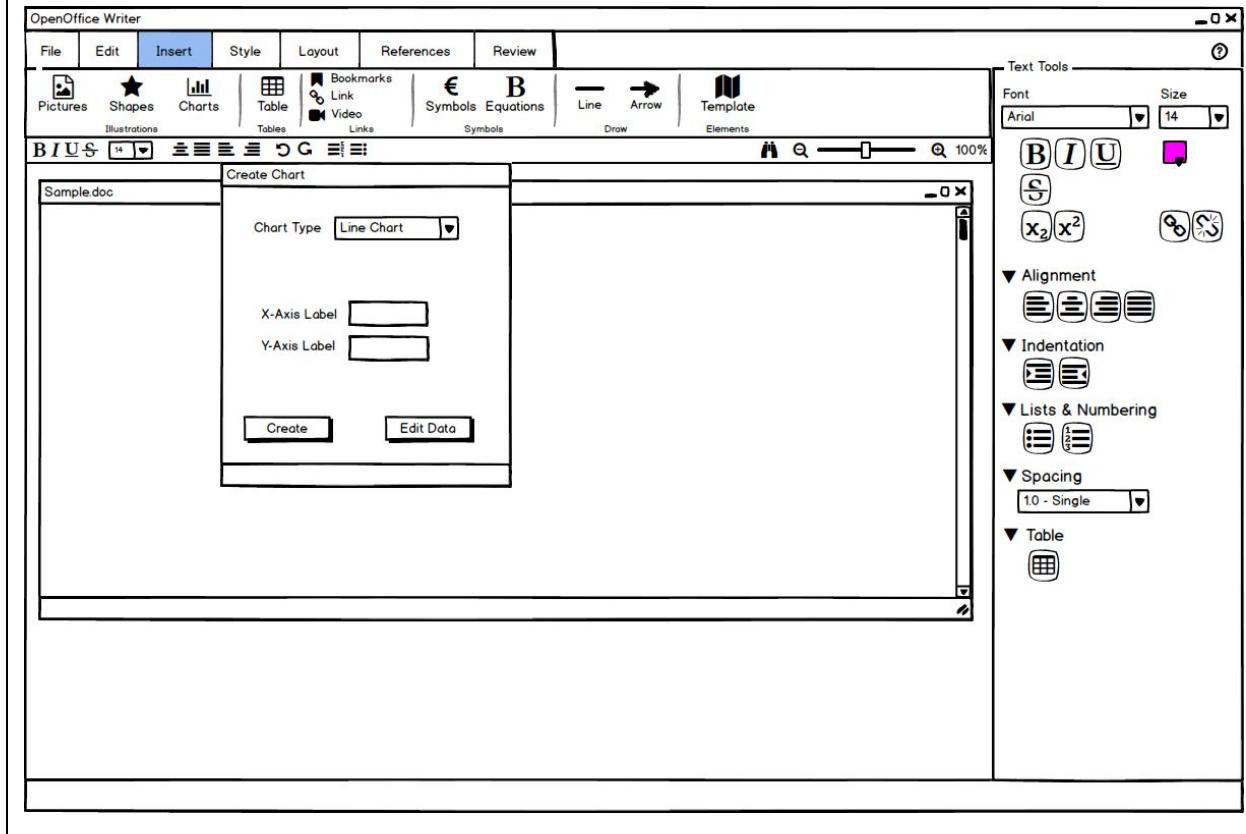
**Step 9:** John plans to add a few charts to his report. So, he **clicks on Charts icon** in **Insert tab**, which shows a popover menu.



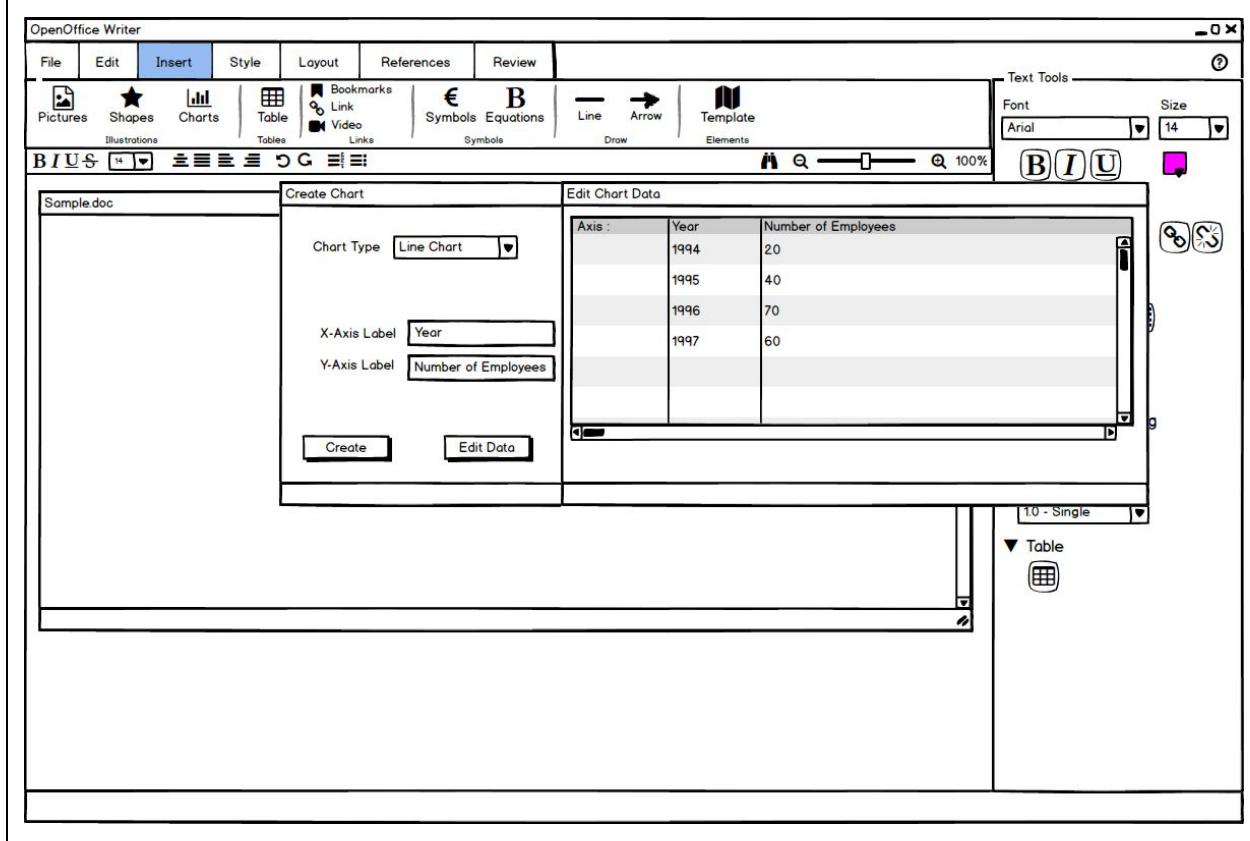
**Step 10:** John wishes to add a Line chart so he clicks on **Line Chart** in the popover menu.



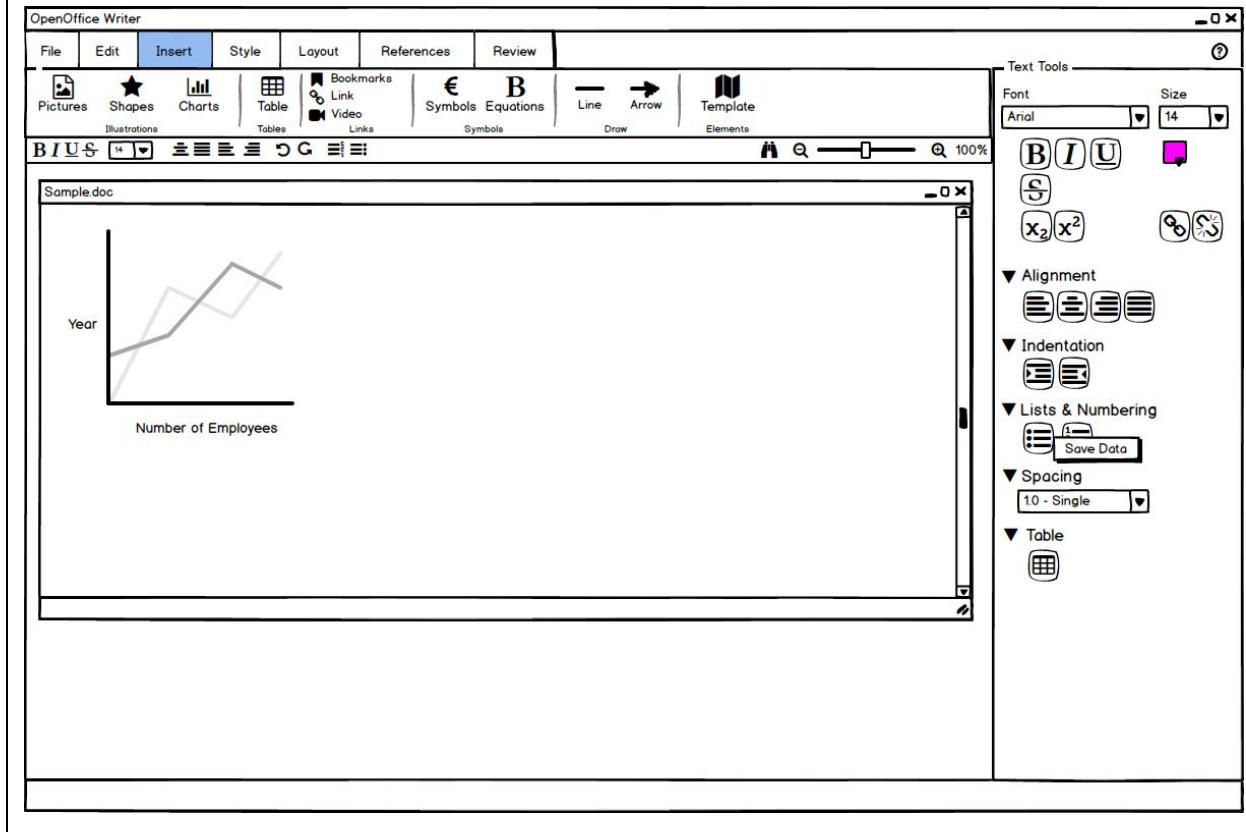
**Step 11:** John clicks on **Edit Data** to begin editing the data plots for the chart.



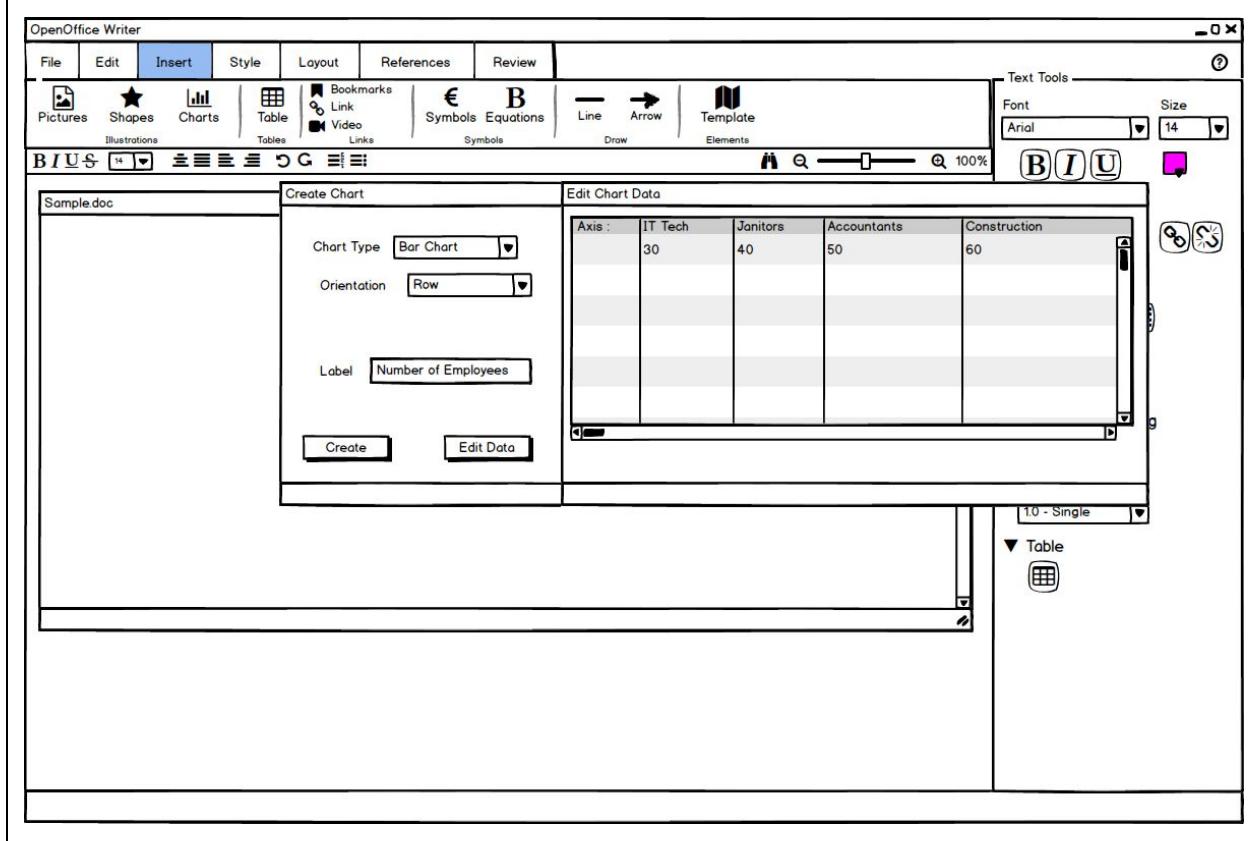
**Step 11:** John names the Axis labels and fills in the data for the chart. Any modification made in the Axis labels automatically modify the Axis labels top of the columns in the chart data.



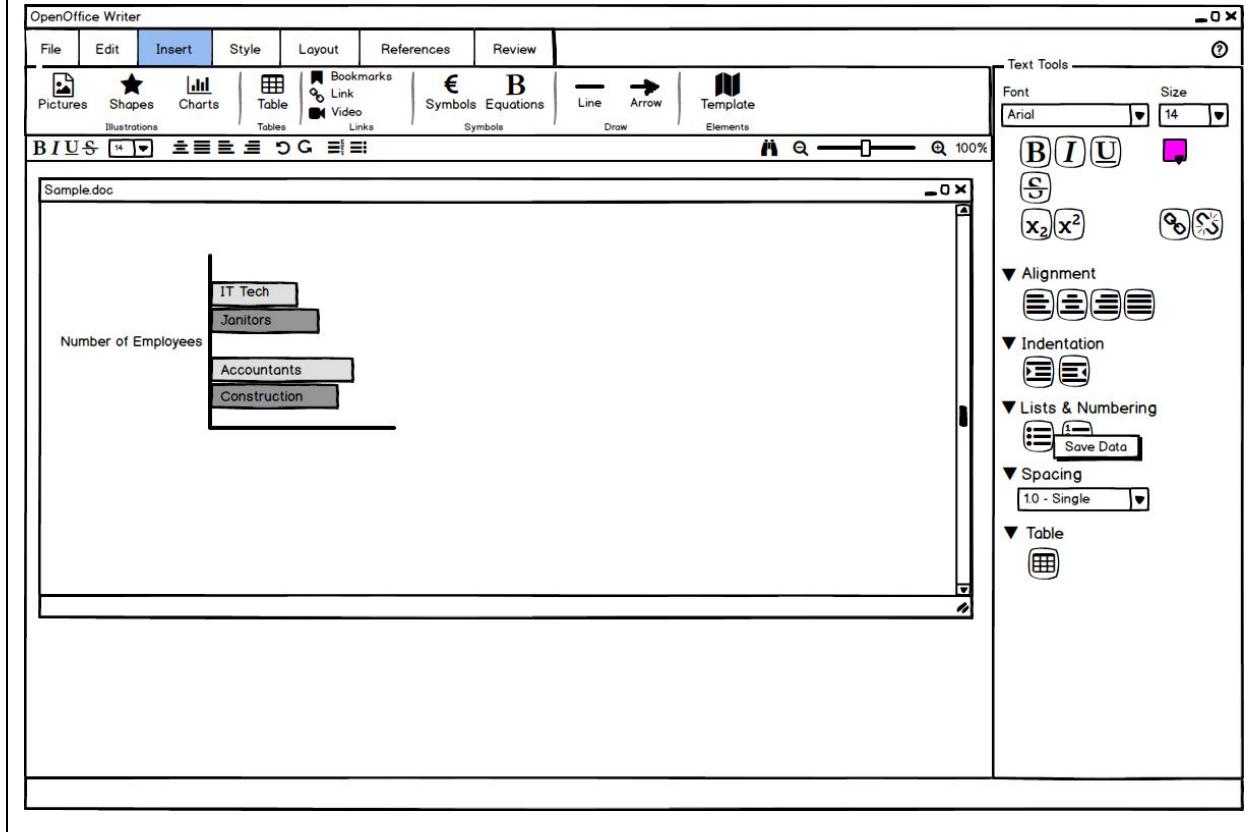
**Step 12:** John clicks **Create**, which creates the chart.



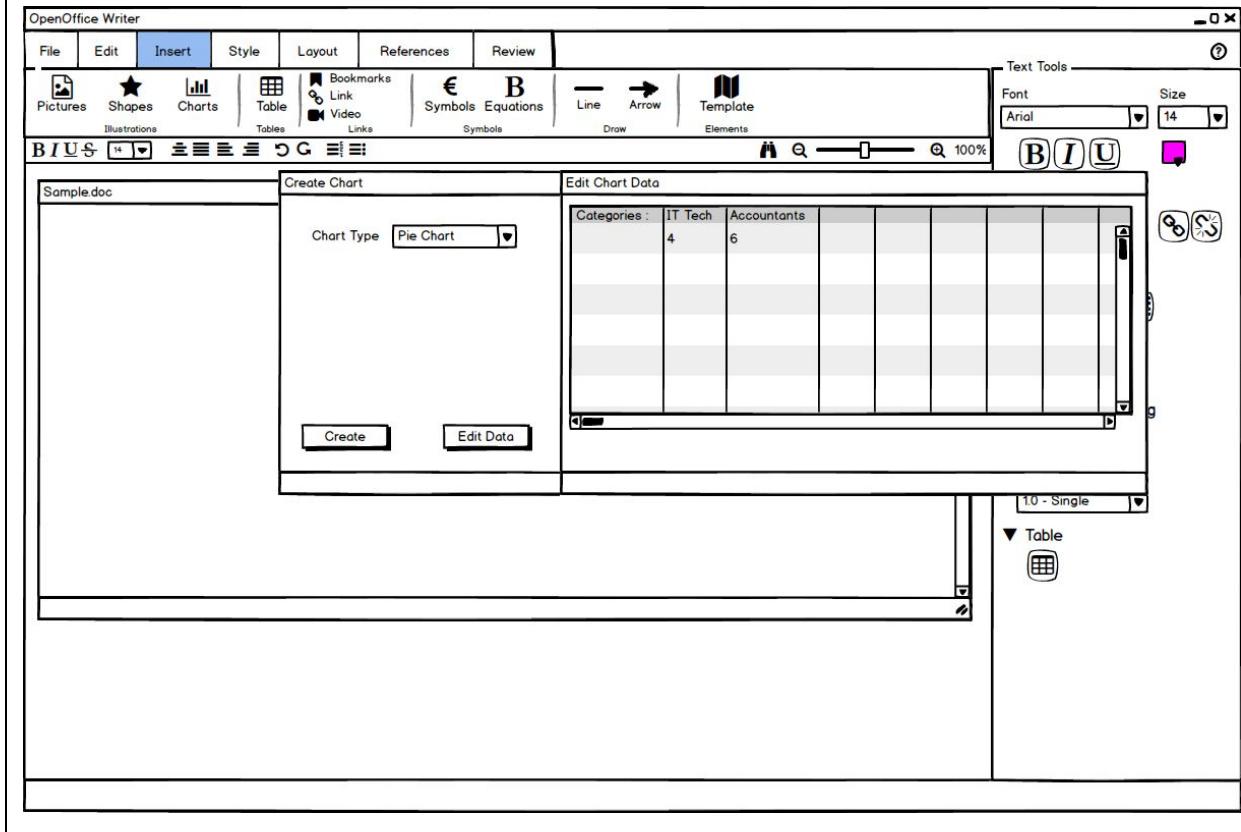
**Step 13:** John decides to add a Bar chart so he repeats **Step 10**, this time selecting Bar Chart. John names the chart label and enters in the data, and chooses the orientation of the chart to Row so that the bar charts are represented from left to right.



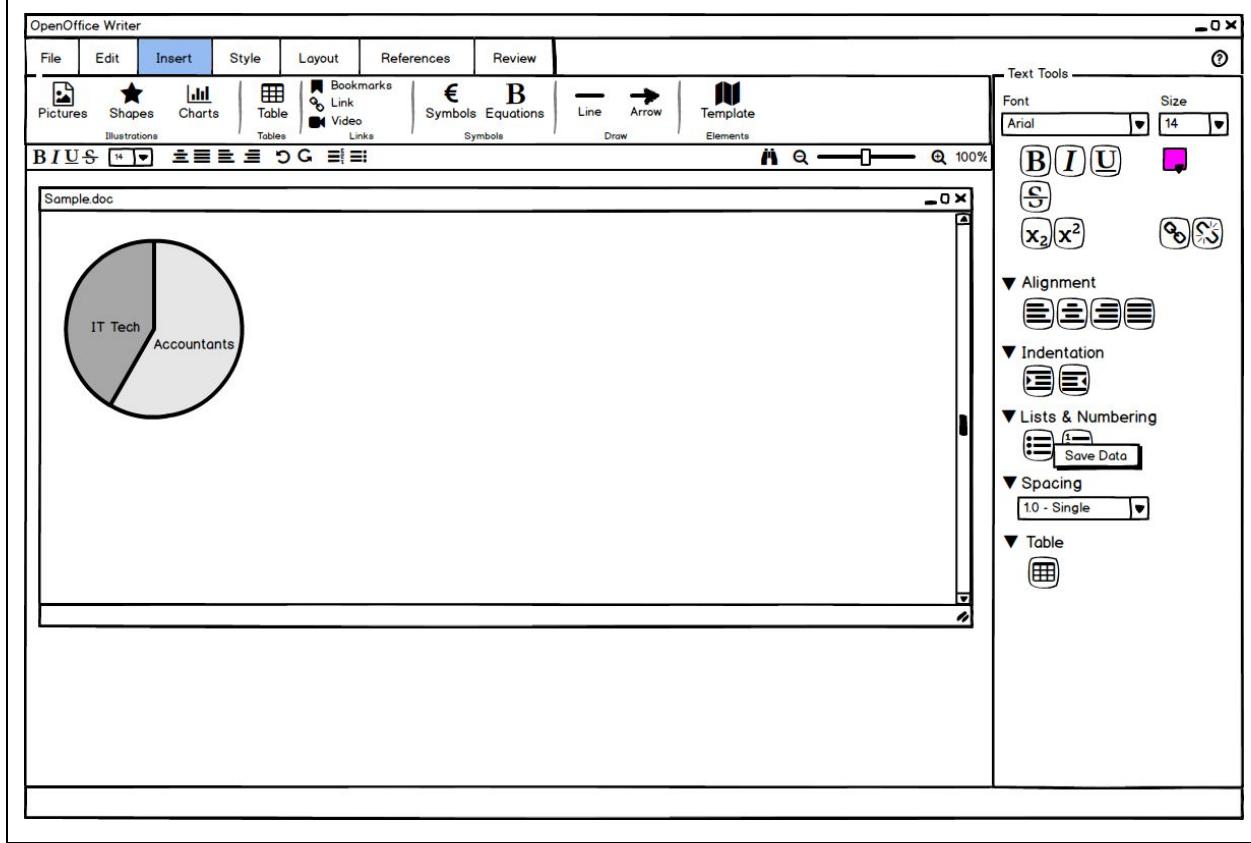
**Step 14:** John clicks on **Create**, which creates the Bar chart.



**Step 15:** John decides to add a Pie chart so he repeats **Step 10**, this time selecting Pie Chart. John enters the data.



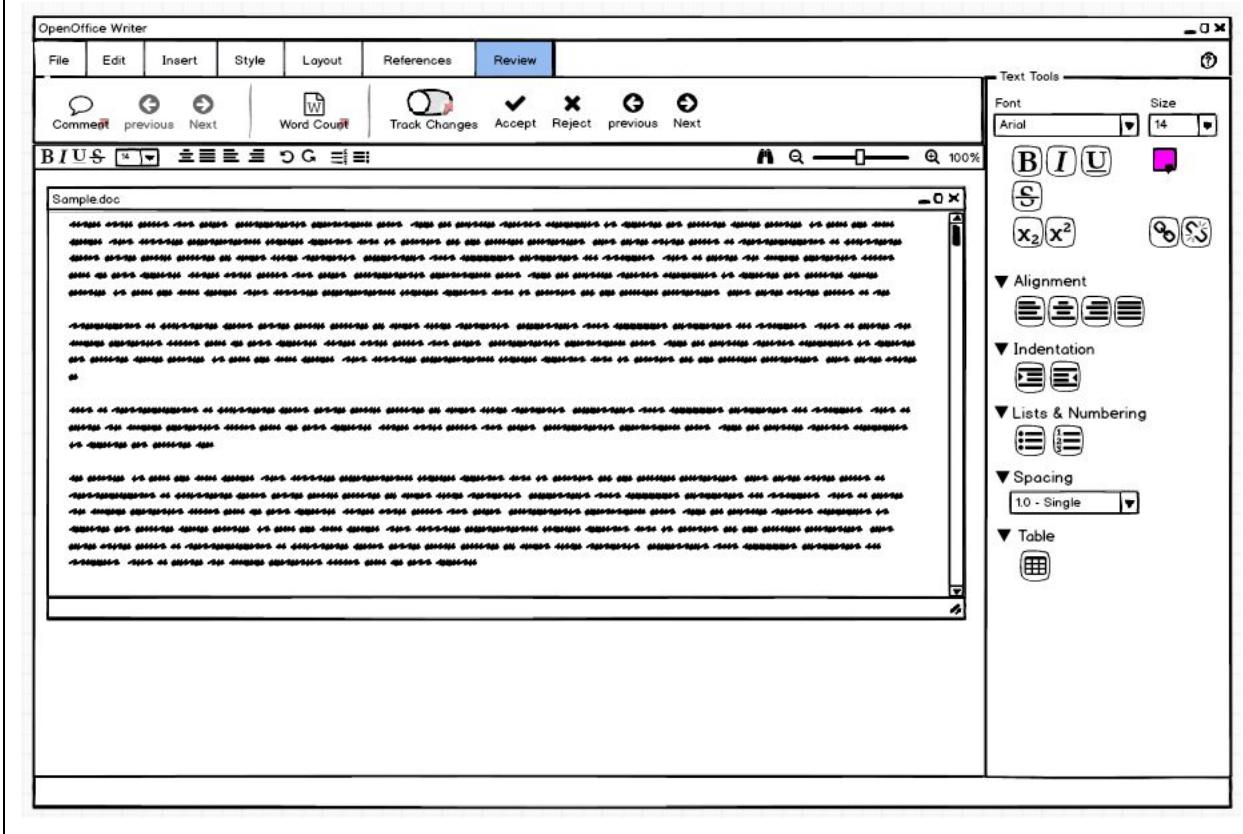
**Step 16:** John clicks **Create**, which creates the Pie Chart.



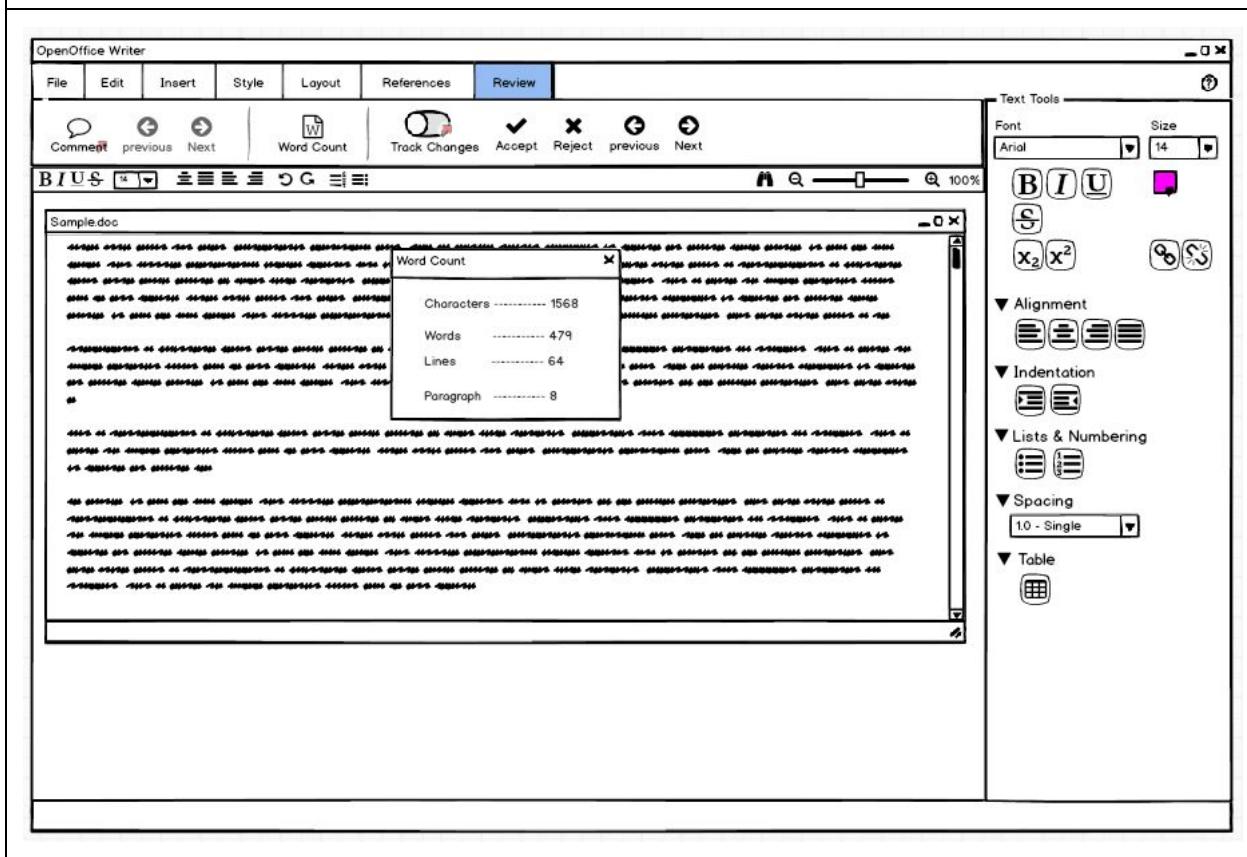
**End of Design Scenario #4**

## Design Scenario #5

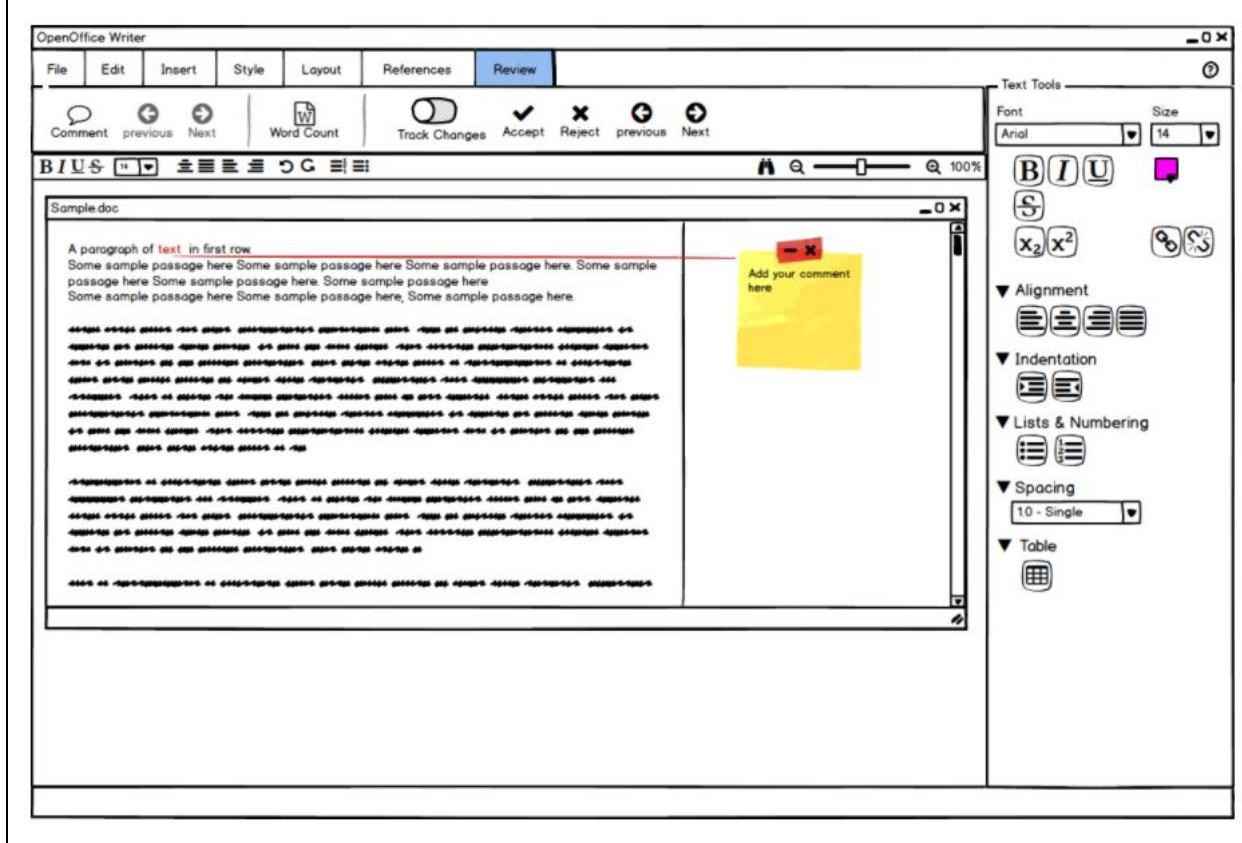
**Step 1:** Susan is reviewing one of student's essay and she would like to start with looking at number of words in document. So, she **clicks on Review tab**.



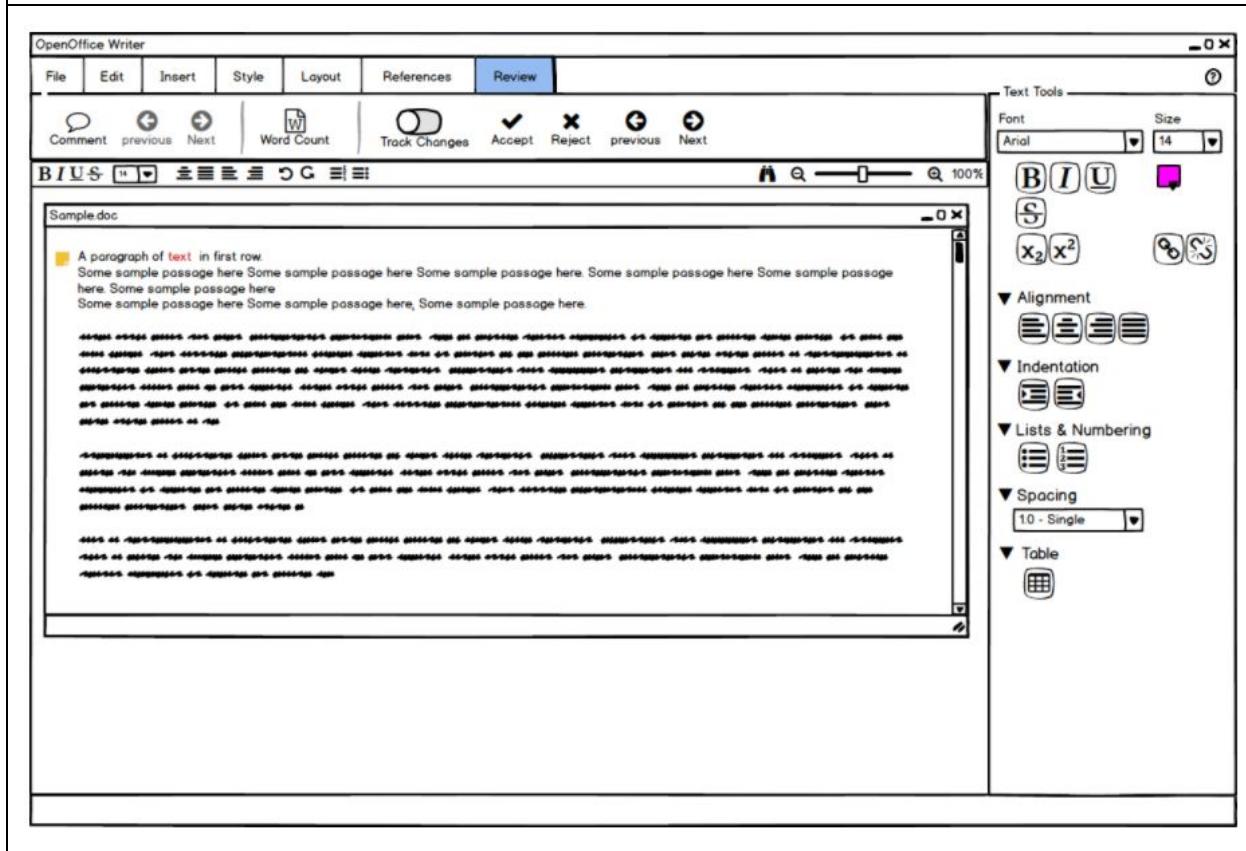
**Step 2:** To view number of words, Susan **clicks on Word Count icon** and number of words, lines, characters and paragraphs are displayed in a new panel.



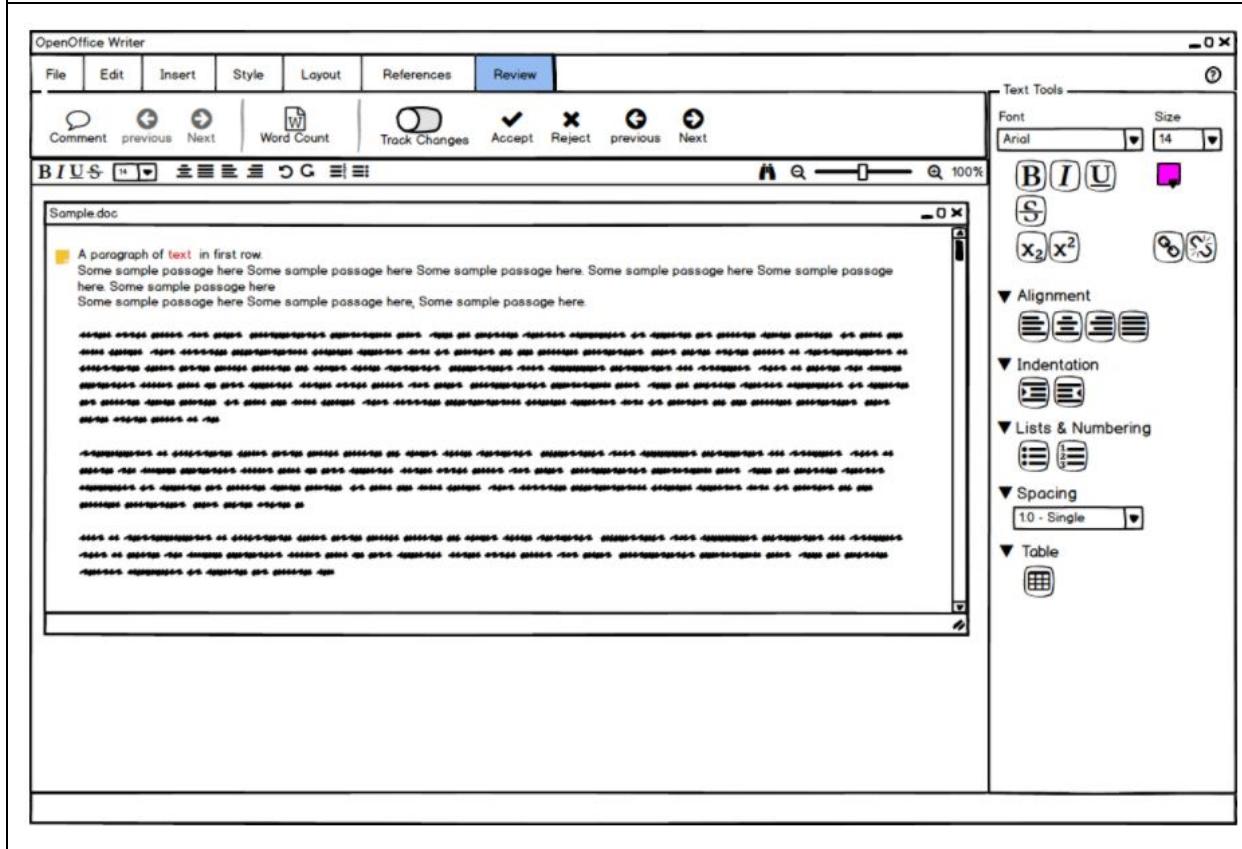
**Step 3:** Susan wishes to leave a comment for student and to do so, she **clicks on Comment icon.**



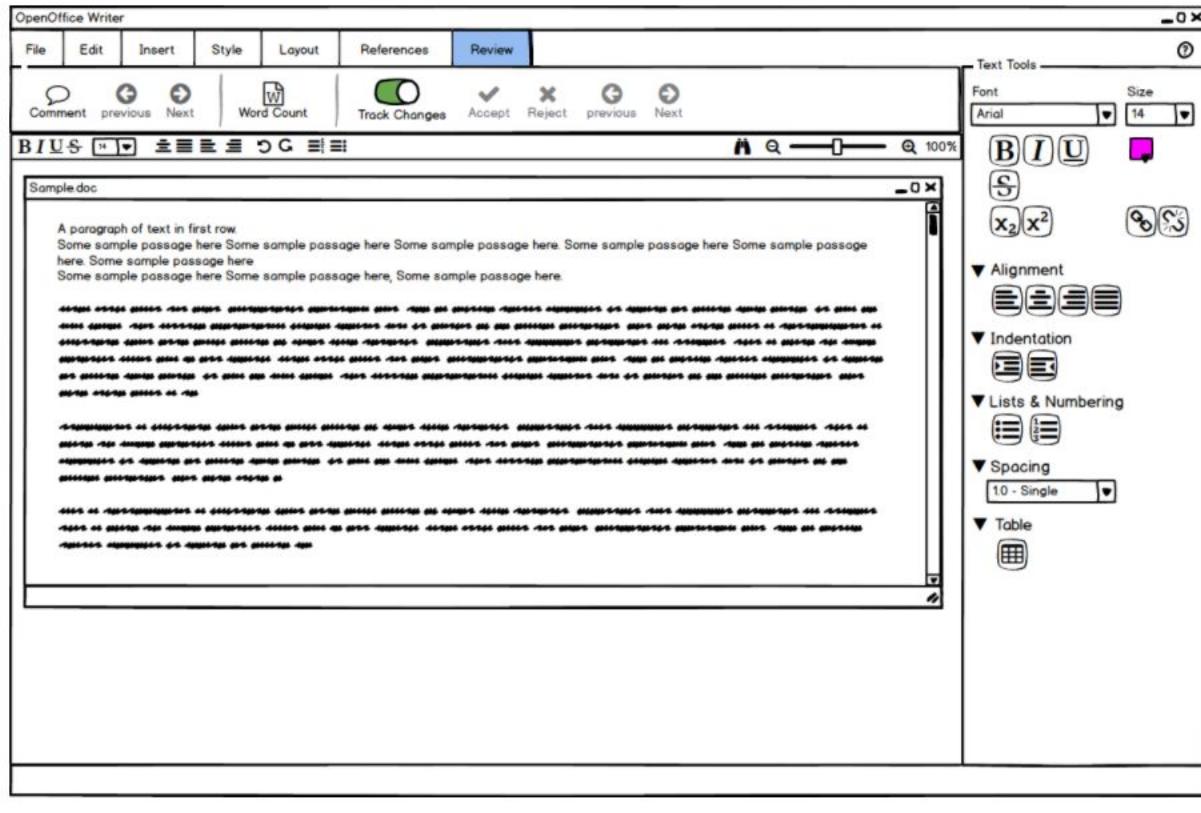
**Step 4:** To remove distraction caused by the new comment and to make more room in the document, Susan **clicks on Minimize icon ("\_")** to minimize the comment.



**Step 5:** To remove distraction caused by the new comment and to make more room in the document, Susan **clicks on Minimize icon ("\_")** to minimize the comment.

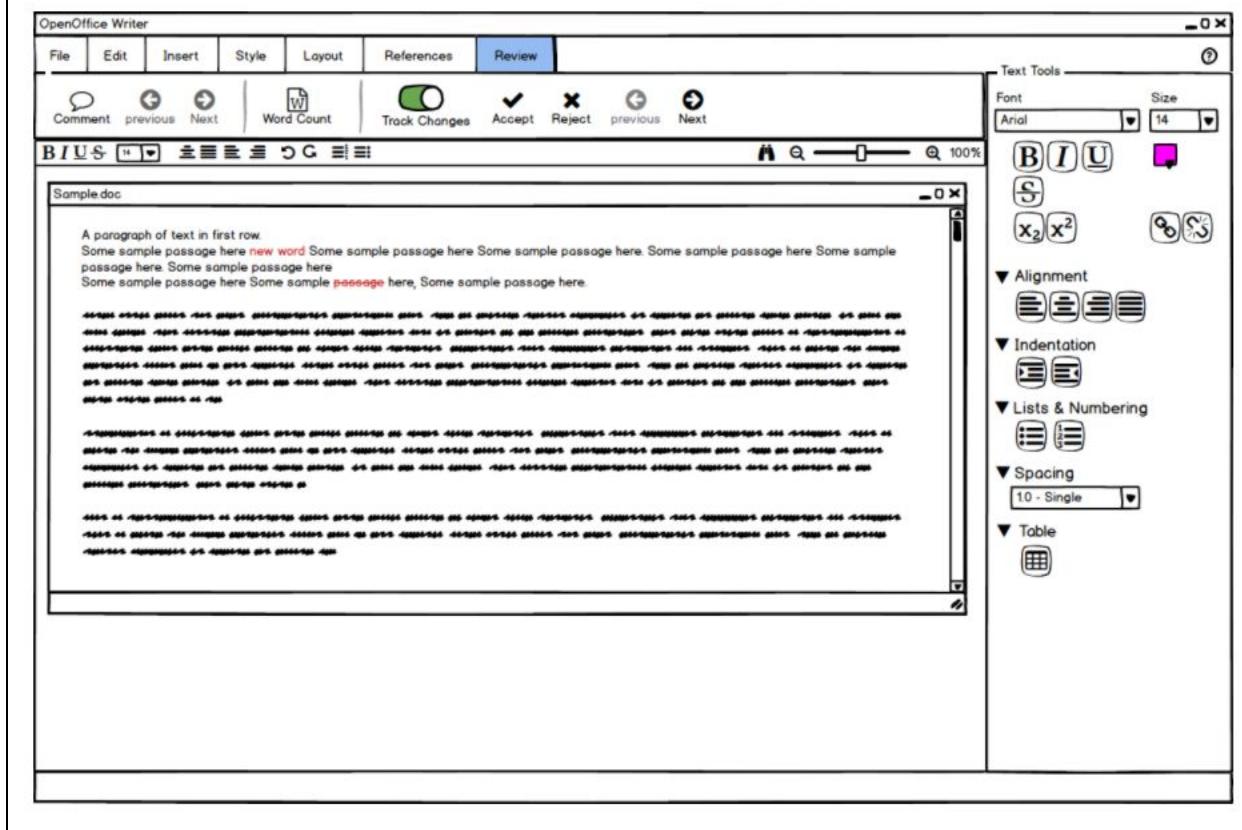


**Step 6:** Susan wishes to make changes to student's essay but she wants her changes to be visible to the student. So, she **clicks on Track Changes icon.**

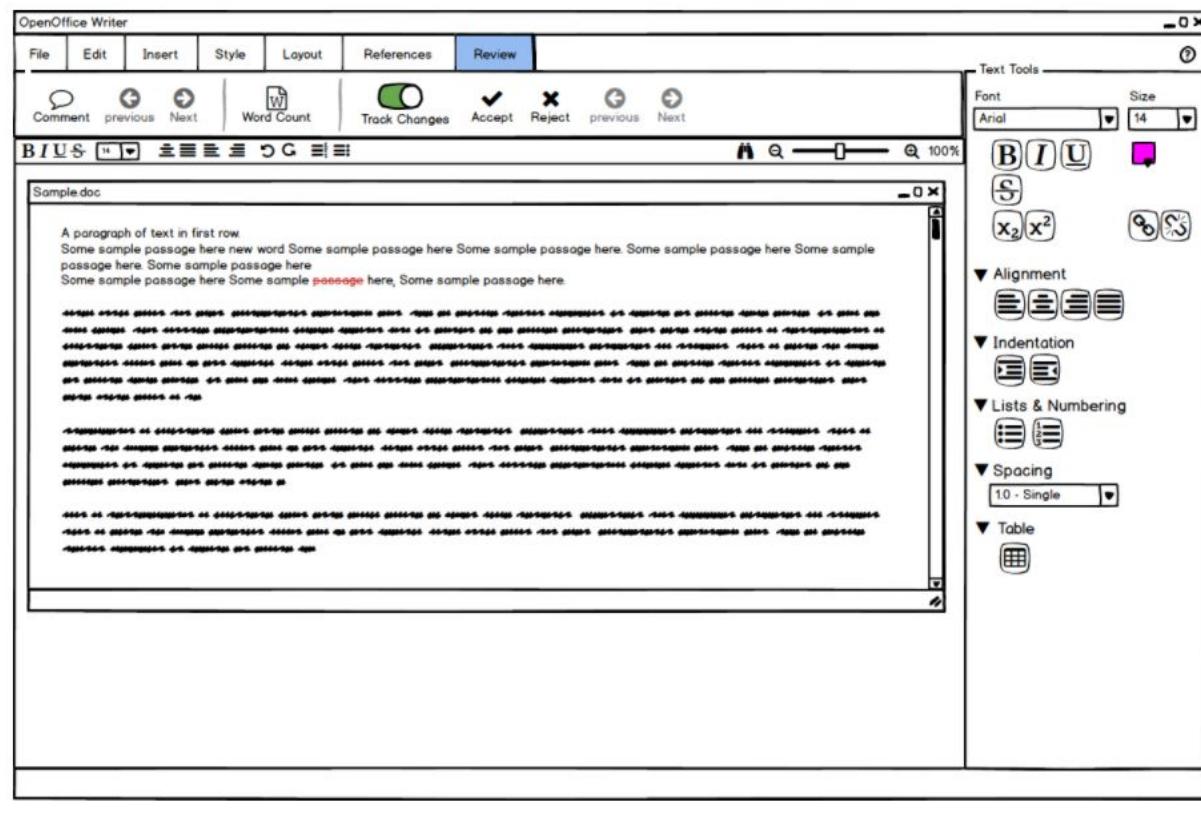


**Step 7:** Susan adds “new word” to the essay and removes “passage” from body text. These changes are highlighted in red.

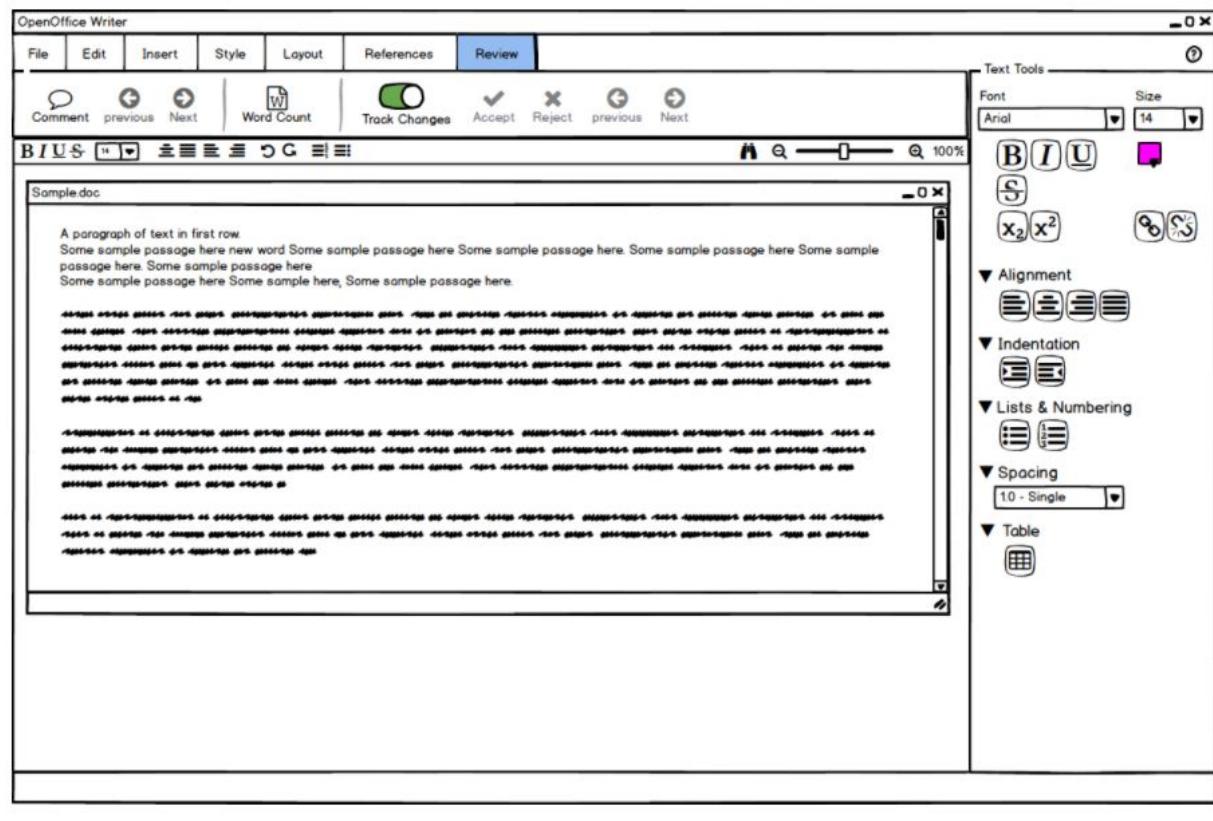
After making these changes, Susan sends updated essay to her student.



**Step 8:** Susan's student receives her modifications and she agrees to adding "new word" to the essay. So, the student **clicks on Accept icon** and "new word" becomes black and looks similar to rest of the text.



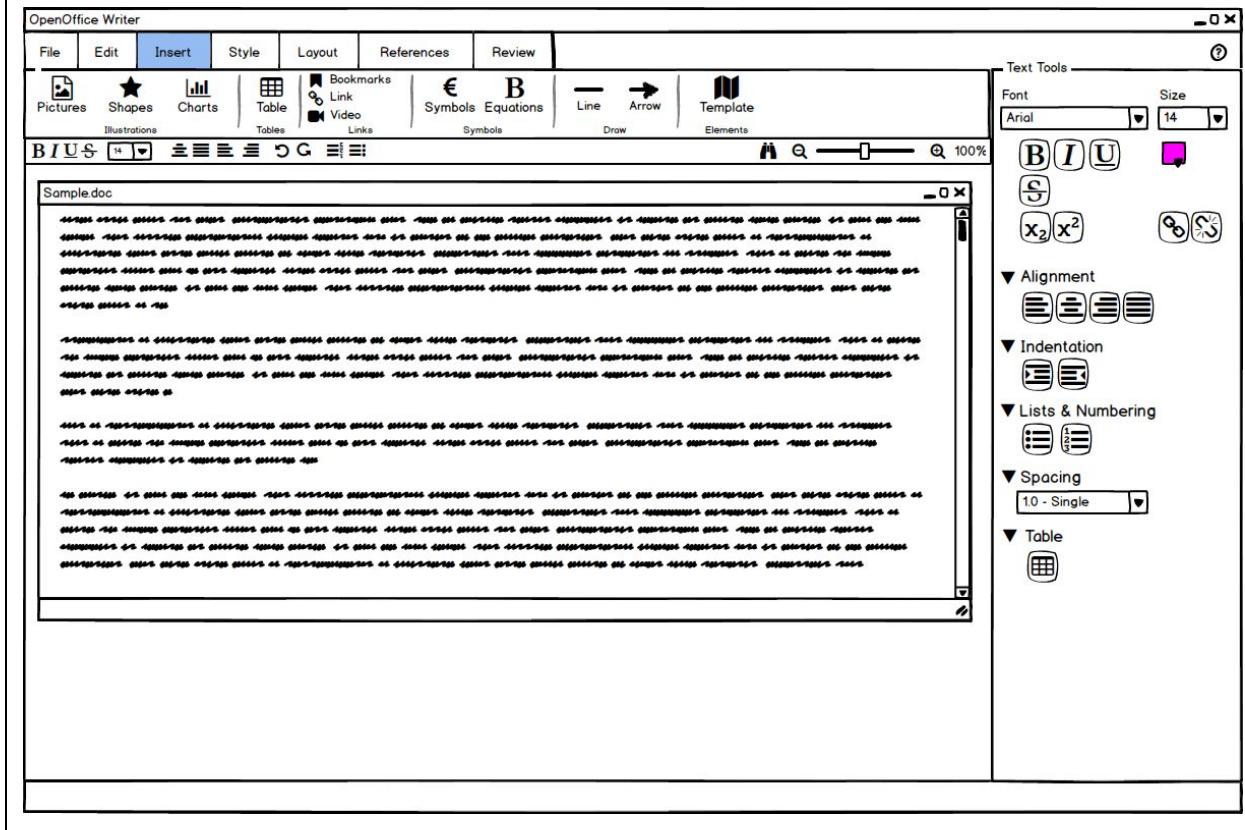
**Step 9:** Susan's student does not agree with the second change and she would like to keep the word "passage" in the essay. So, she clicks on Reject icon and "passage" word is kept in the document and it looks similar to rest of the text.



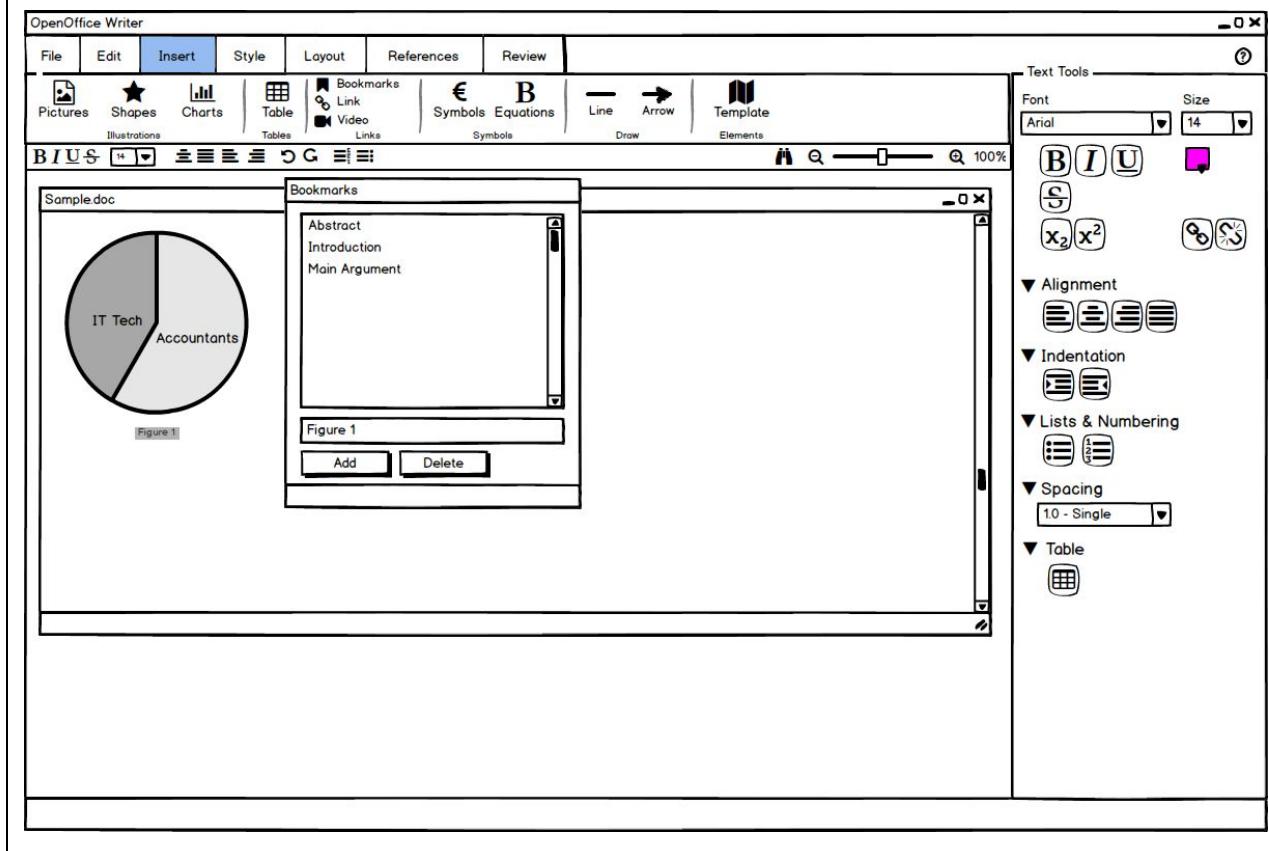
**End of Design Scenario #5**

## Design Scenario #6

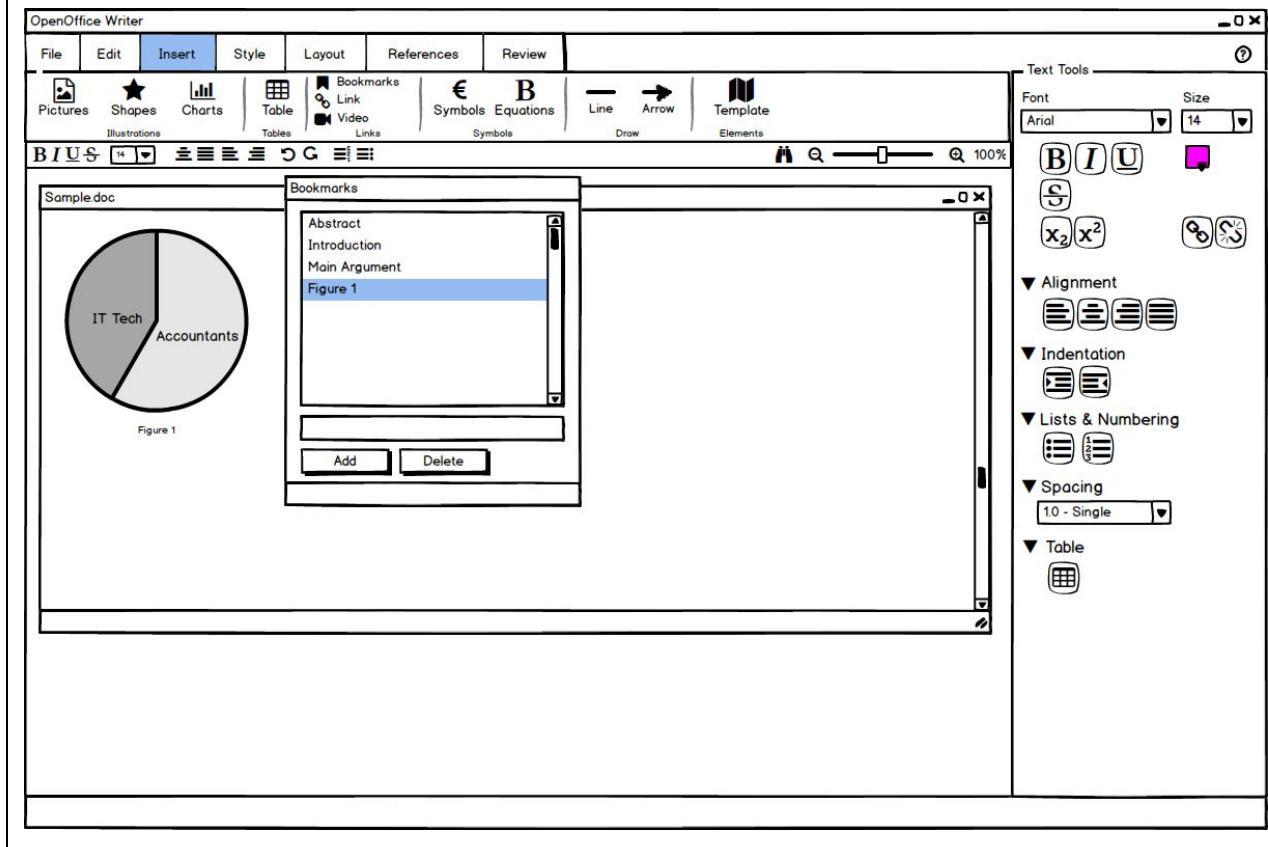
**Step 1:** Amanda has completed her 200 page thesis, complete with a Table of Contents. Before presenting the thesis to her professor, she would like to add hyperlinks to tables, figures, and locations in her text.



**Step 2:** Amanda highlights text, such as “Figure 1”, then clicks on the **Bookmarks** tool in the **Insert tab**. She names the bookmark “Figure 1” in the empty text field.

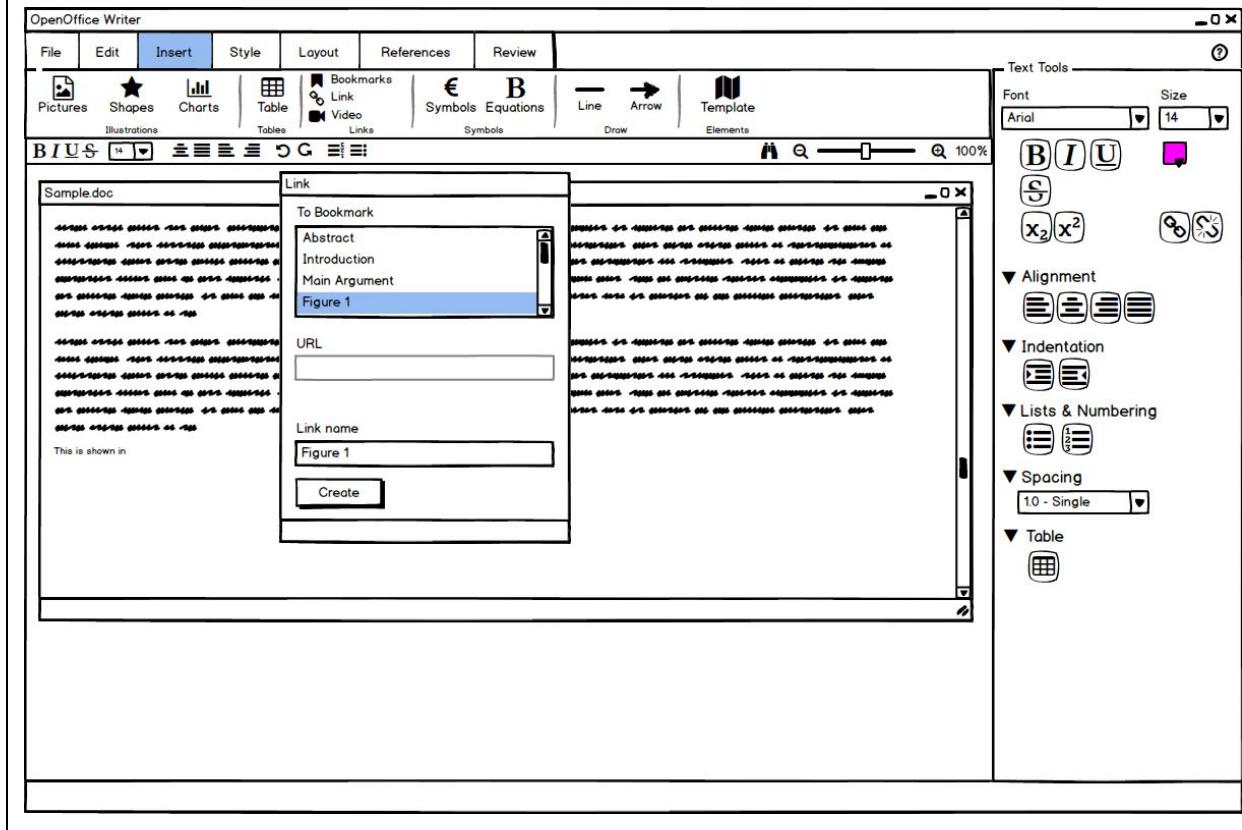


**Step 3:** Amanda adds the bookmark, and the bookmark is added into the list of bookmarks in the bookmarks window.

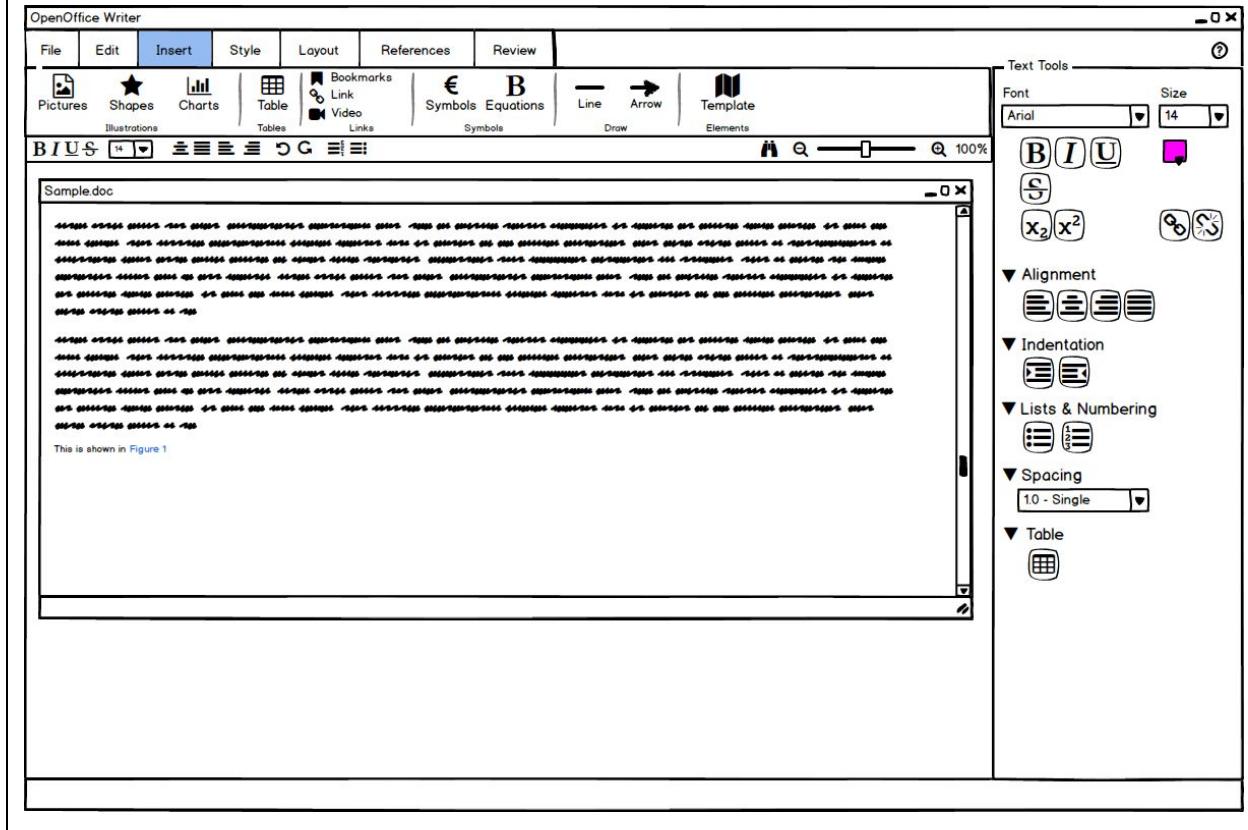


**Step 4:** Amanda then clicks on the **Link tool** in the **Insert tab**. If she had text, such as “Figure 1” highlighted, the window automatically fills out the link name in the Link window.

Amanda chooses “Figure 1” from the list of bookmarks in the “To Bookmark” pane in the Link window. If a bookmark is selected, the URL input becomes greyed out, and vice-versa. She clicks on “Create”.



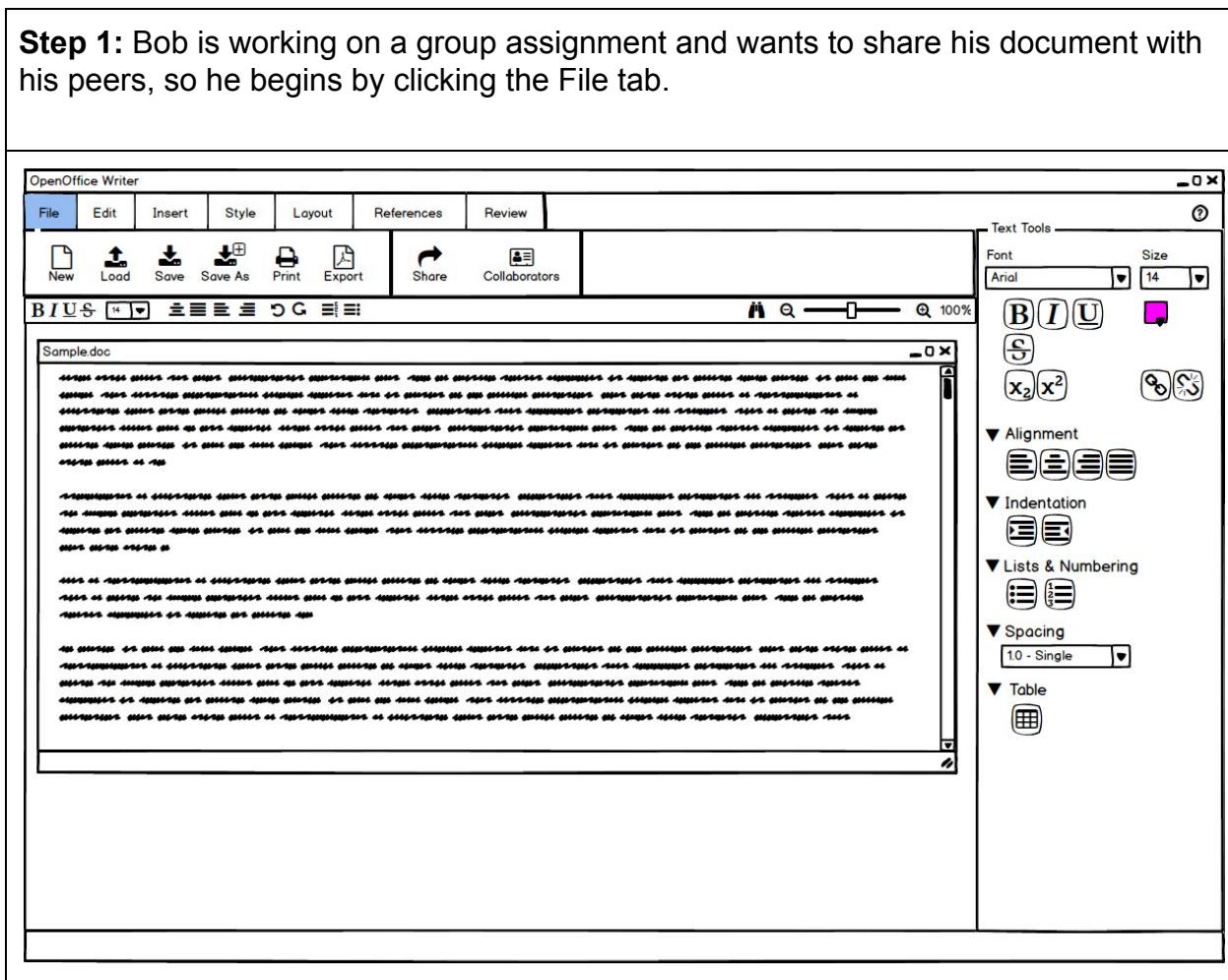
**Step 4:** The link to the bookmark “Figure 1” has been created. Clicking on this link will move the reader to the location of the bookmark in the document. Amanda repeats these steps to add links to all of her tables, figures, and lines of text.



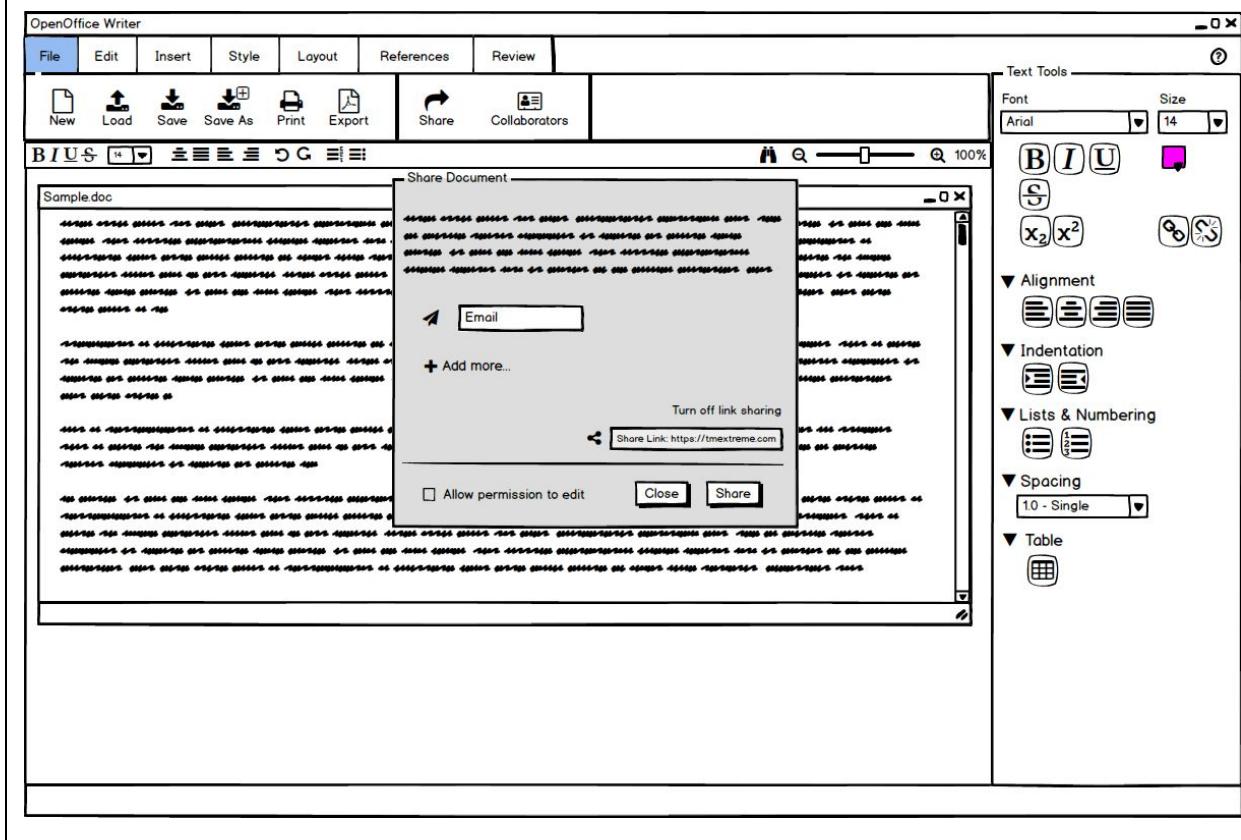
**End of Design Scenario #6**

## Design Scenario #7

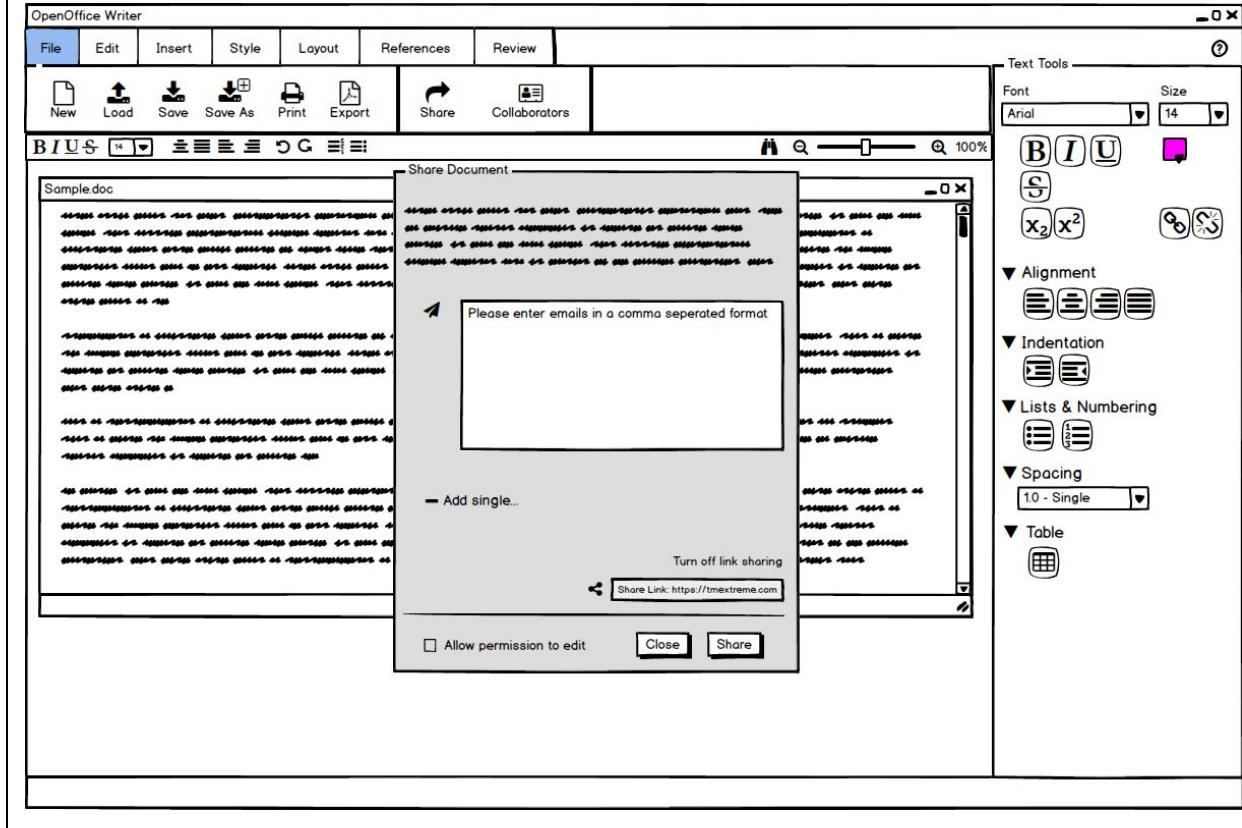
**Step 1:** Bob is working on a group assignment and wants to share his document with his peers, so he begins by clicking the File tab.



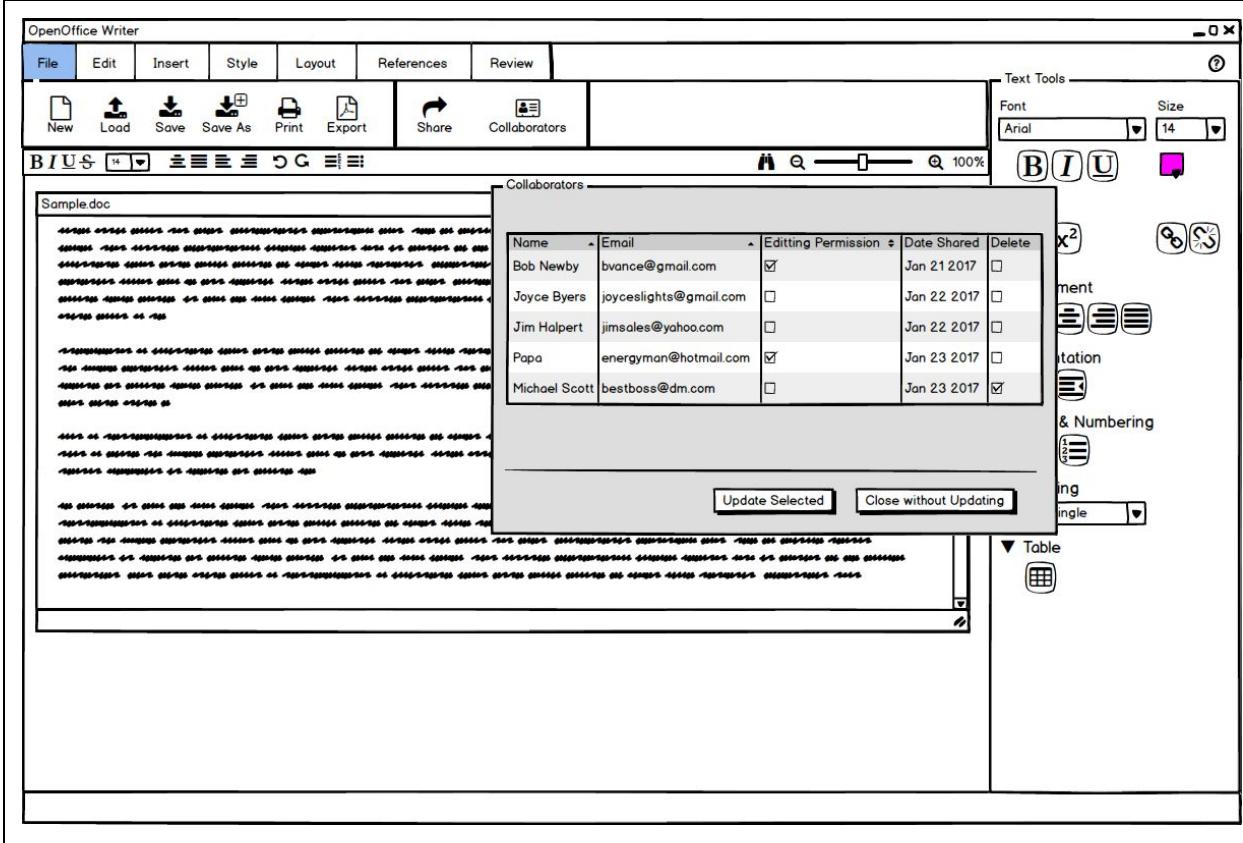
**Step 2:** Bob then clicks the **Share** button. He realizes that he needs to share the document with multiple people, so he clicks **Add more** in the Share Document dialog box.



**Step 3:** In a comma separated format he types his group members' emails. He finalizes this action by clicking the **Share** button.



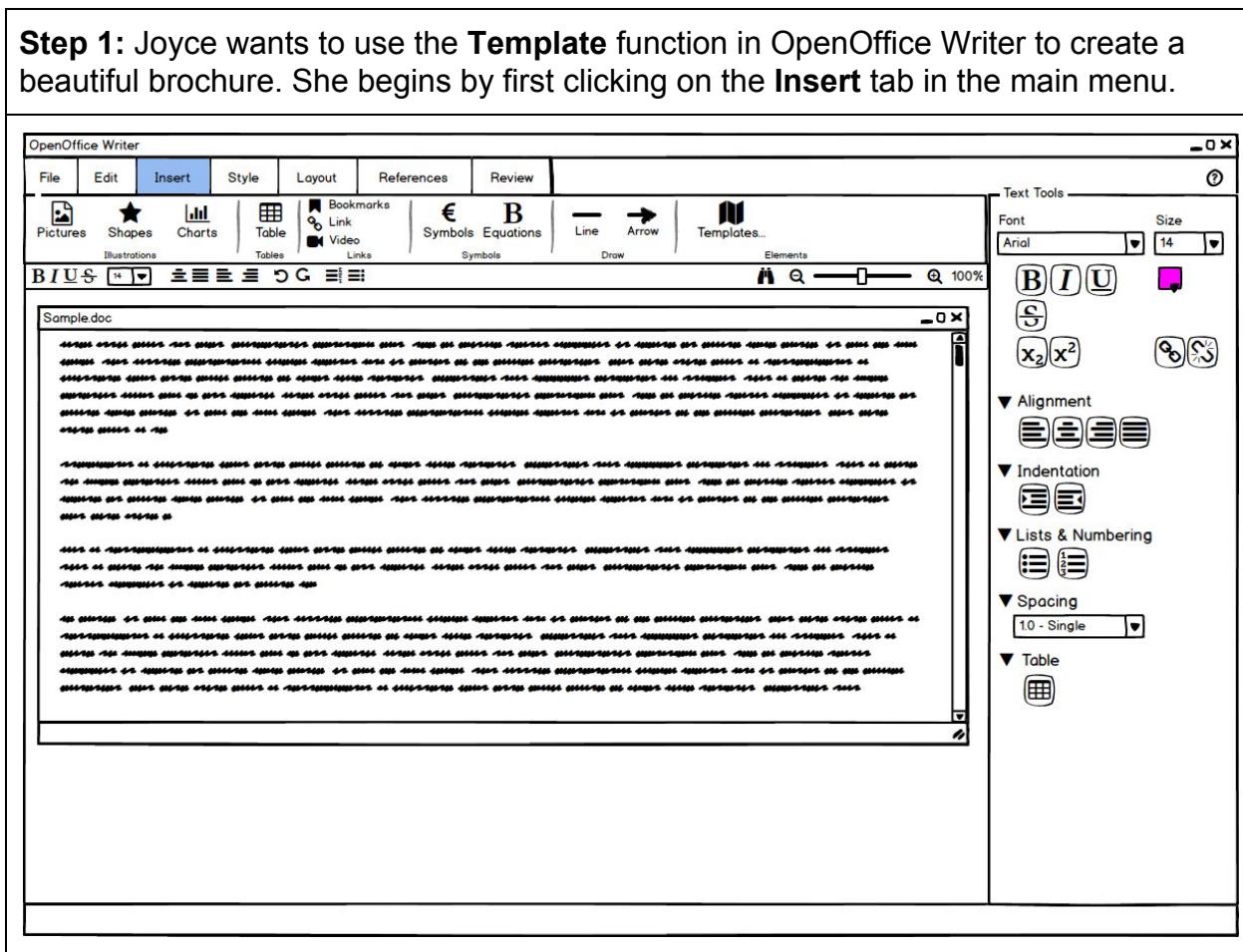
**Step 4:** Bob realizes that he incorrectly added a person to the share list and did not give the appropriate permissions to some of his group members. He fixes this by clicking the **Collaborators** button, selecting the necessary check boxes and finalizing it by clicking **Update Selected**.



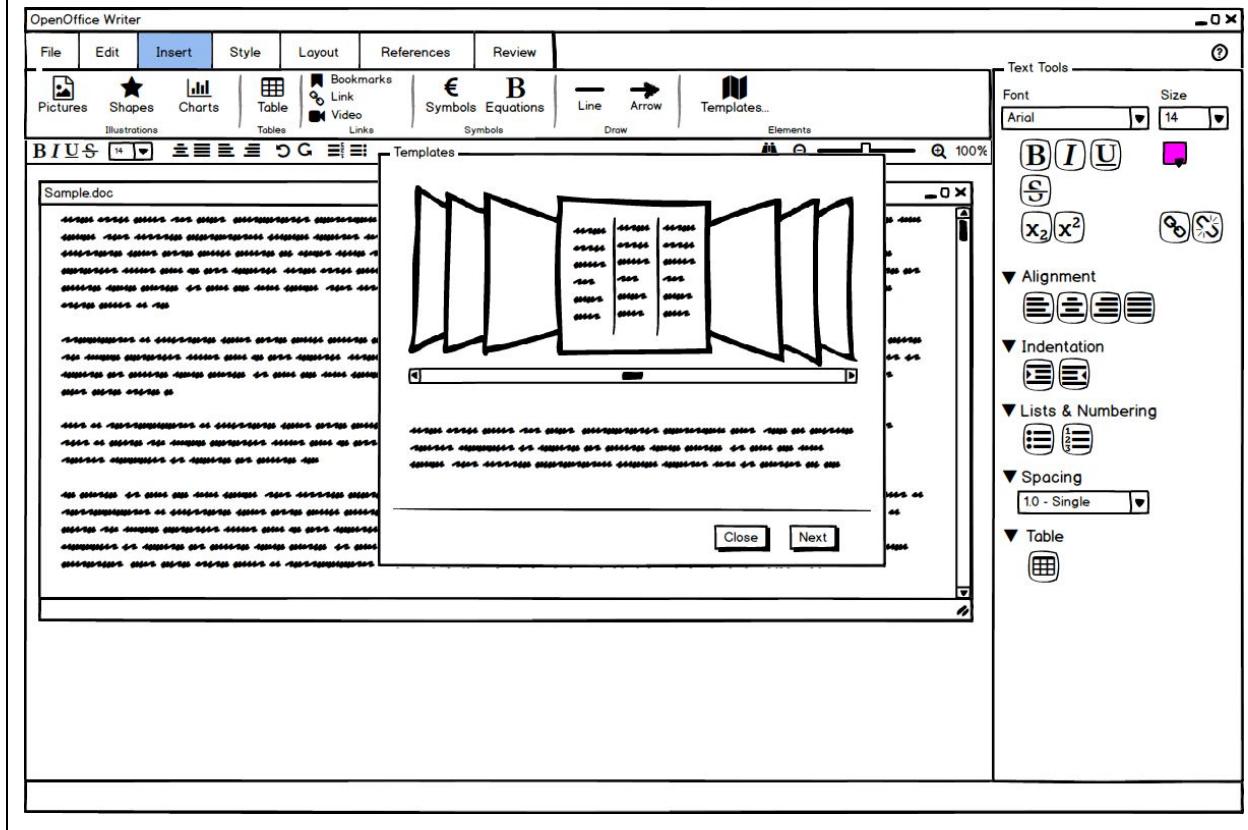
**End of Design Scenario #7**

## Design Scenario #8

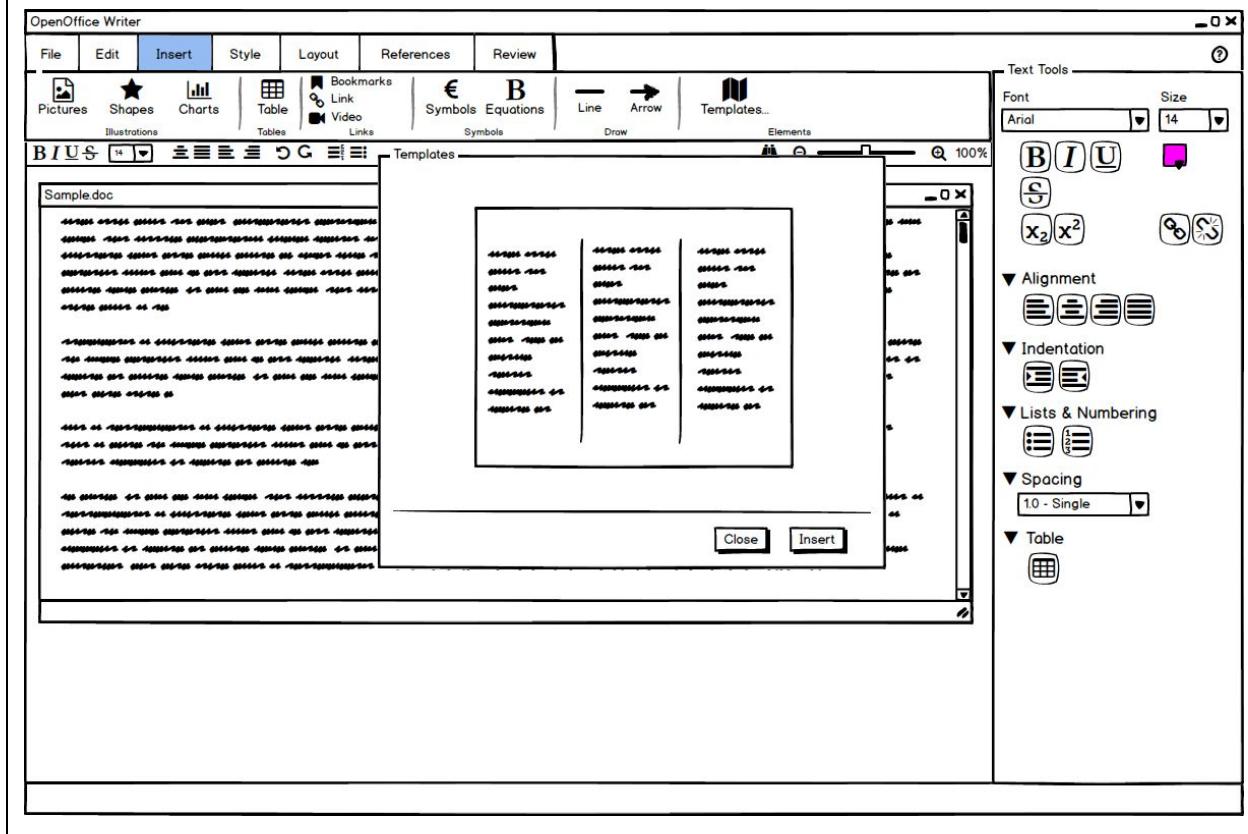
**Step 1:** Joyce wants to use the **Template** function in OpenOffice Writer to create a beautiful brochure. She begins by first clicking on the **Insert** tab in the main menu.



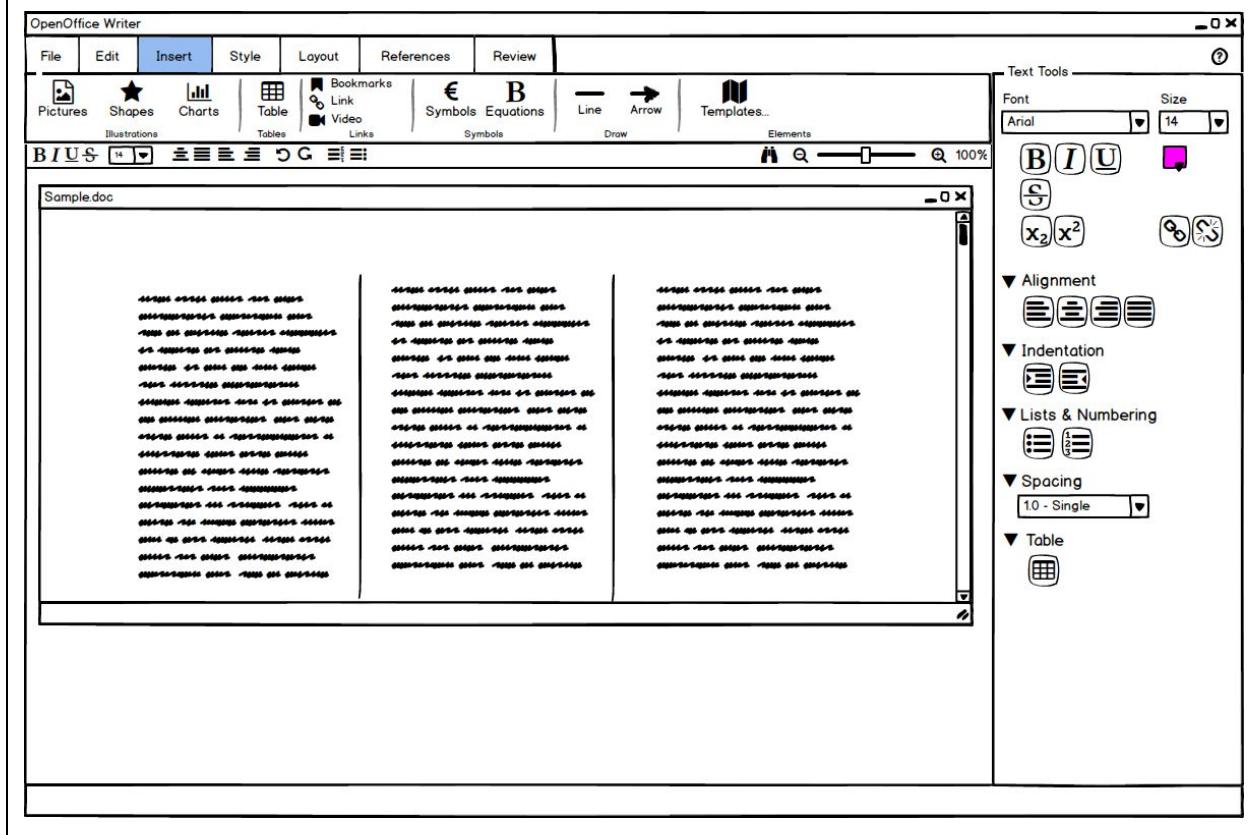
**Step 2:** Joyce then clicks the **Template...** button in the Elements sub section. Here she can scroll through the cover view to see various templates, but she settles with the tri-fold brochure. She clicks **Next**.



**Step 3:** Joyce gets a preview of the template and she likes it so she clicks **Insert**.



**Step 4:** The template is now inserted into the document and Joyce goes on to create her brochure.



**End of Design Scenario #8**

## **Group self-assessment for design**

### **Usability: 6 out of 10**

While giving our mockups a closer look, it was determined that the interface does not always make it clear how a feature should be used, which may cause users to get confused or stuck. That said, most of the core tools are organized into sensibly-named categories such that they are relatively easy to find with minimal effort needed to navigate the menu bar.

### **Usefulness: 8 out of 10**

We've included most of the core tasks from the inventory we build in our user research. The right side of the interface provides most of the text-control tools needed for the user to apply formatting. Tools for inserting various objects, references, and other commonly-used elements have also been provided. The mock-ups however lack some of the more advanced capabilities of these tools.

### **Desirability: 7 out of 10**

Our proposed interface was created with a touch-screen device in mind. Icons are large enough such that they are easy to tap. Likewise, the menu tabs make it relatively easy to navigate by hand. That said, the interface doesn't really break the mold of what is commonly seen in modern word-processors such as Google Docs and Microsoft Word.

# One Page Usability Test Plan

CONTACT DETAILS		FINAL DATE FOR COMMENTS
AUTHOR Team eXtreme	skd8@sfu.ca	November 28th, 2017
PRODUCT UNDER TEST  An updated user interface for OpenOffice Writer.	TEST OBJECTIVES  The objectives of the test are to determine if a group of participants representative of our chosen user base are able to complete the list of tasks given to them in a reasonable amount of time with minimal difficulty. These tasks will require the participant to navigate through the interface mockups in order to achieve a given goal.	PARTICIPANTS  5-6 participants will be recruited to take part in testing. The participants are a part of the SFU Community as either undergraduate students, or alumni. The participants will be familiar with text editing applications such as Microsoft Word or Google Docs, but may have little to no familiarity with OpenOffice Writer.
BUSINESS CASE  To determine whether the proposed changes to the interface provide a benefit to end-users without making it more difficult for them to achieve their goals.	TEST TASKS  The test results will allow us to determine whether our recommended modifications to the interface provide added value to the user in the form of improved learnability, usability and usefulness.	RESPONSIBILITIES  The responsible members for testing include: John Kim, Jasdeep Jassal, Sarah Kim Dao, Faranak Nobakhtian, and Shawn An.
PROCEDURE  What are the main steps in the test procedure?	EQUIPMENT  Testers will use a laptop or a notebook to record the results of each task and to make note of any observations.	LOCATION & DATES  Testing will be done from November 26th to November 28th. The locations may vary, but include the SFU Campus and the Brentwood Solo District. Testing may also be done online via Skype Call.
Step 1: Organize the time, date and location for the test session with the Participant.	Step 2: Inform the Participant of their consent and the interview's purpose.	Step 3: Advise the Participant that they will be asked to complete a series of tasks with printed mockups and along the way they are to speak out their actions and thoughts
		Step 4: Progress through each page as they select an action, record the results and their ability to successfully pass the task. Repeat this for every task.
		Step 5: Insert the symbol for Pi
		Step 6: Write down final observations and thank the Participant for their time.

## **Usability Testing Summary**

### **Participant Test Tasks**

#### **Design Scenario #1**

**Task 1:** Apply the 'Header 1' style to the header of each section shown on the screen.

**Task 2:** Insert a Table of Contents at the top of the document.

**Task 3:** Insert a Citation anywhere in the document. The citation is for page 26 of a book called 'User Research Methodologies'. It was written by John Doe in 1990.

**Task 4:** Insert a Bibliography Entry for the book 'User Research Methodologies'

#### **Design Scenario #2**

**Task 1:** Insert the symbol for Pi into the document

**Task 2:** Insert the following equation into the document:

$$3 + \frac{4}{2 \times 3 \times 4}$$

#### **Design Scenario #3**

**Task 1:** Create a bookmark.

**Task 2:** Create a hyperlink inside the document which when clicked, moves the reader to the bookmark.

#### **Design Scenario #4**

**Task 1:** Insert a table in document.

**Task 2:** Change background color of the table.

**Task 3:** Insert a Line chart in the document.

**Task 4:** Insert a Bar chart in the document.

**Task 5:** Insert a Pie chart in the document.

### **Design Scenario #5**

**Task 1:** View the number of words in the document.

**Task 2:** Insert a comment in the document.

**Task 3:** Minimize an existing comment.

**Task 4:** Enable Track Changes feature in the document.

**Task 5:** Accept a change that has been added using Track Changes feature.

**Task 6:** Reject a change that has been added using Track Changes feature.

### **Design Scenario #6**

**Task 1:** Apply a consistent header style for each of the headers in the document.

**Task 2:** Use the Line tool to draw lines in the document.

### **Design Scenario #7**

**Task 1:** Share the document.

**Task 2:** Add multiple people to share with.

**Task 3:** View the collaborators.

**Task 4:** Update the collaborators editing permissions.

**Task 5:** Delete collaborators.

## **Design Scenario #8**

**Task 1:** Preview templates.

**Task 2:** Insert a template.

### **Top 3 usability positive issues:**

- 1) Most of the tools were easy to find, easy to use, and easy to learn. Participants thought everything was labelled well and placed appropriately. Important tools (like bold, italics, etc) were forefront.
- 2) The layout was relatively similar to other word processors making it easy to find many of the tools. The core functionalities expected of a modern day word-processor(sharing, comments, tables) was well implemented. Because the design was consistent with similar word processing tools, it made it easier for user to follow and understand tasks.
- 3) The layout of the main interface is nice and clear. The icons were easy to recognize and helpful in understanding meaning of actions.

### **Top 3 usability problems (negative issues)**

1. Some tools were not obvious or clear in terms of how to use it. For example, advanced features such as bookmark and comment were slightly confusing. Entering chart data was also not clear to users.
2. More function operators are expected for complicated functions. For example, the Equations Editor needed a button to insert special characters (like Pi) since equations usually have lots of special characters.
3. There were not enough mockups to cover all the possible flow paths. Some participants asked questions on what would happen if he clicked on X during some state, there were some lack of mockups in certain edge cases of tasks (there should be error windows, for example when clicking on Bookmarks tool without highlighting anything)

### Task success matrix

Scenarios# & Tasks#		A	B	C	D	E	F
<b>S1</b>	<b>T1</b>	S	S	F	S	S	S
	<b>T2</b>	S	S	S	S	S	S
	<b>T3</b>	S	S	S	S	S	S
	<b>T4</b>	S	S	P	S	P	S
<b>S2</b>	<b>T1</b>	S	S	S	S	S	S
	<b>T2</b>	S	S	S	S	S	S
<b>S3</b>	<b>T1</b>	F	S	S	P	F	P
	<b>T2</b>	F	S	S	F	F	P
<b>S4</b>	<b>T1</b>	S	S	S	S	S	S
	<b>T2</b>	S	S	S	S	S	S
	<b>T3</b>	S	P	P	S	S	S
	<b>T4</b>	S	S	S	S	S	S
	<b>T5</b>	S	S	S	S	S	S
<b>S5</b>	<b>T1</b>	S	S	P	P	S	S
	<b>T2</b>	S	P	P	S	P	P
	<b>T3</b>	S	S	S	S	S	S
	<b>T4</b>	P	S	S	S	S	S
	<b>T5</b>	P	S	S	S	S	S
	<b>T6</b>	P	S	S	S	S	S
<b>S6</b>	<b>T1</b>	P	F	P	P	F	P
	<b>T2</b>	S	S	S	S	P	S
<b>S7</b>	<b>T1</b>	S	S	S	S	S	S
	<b>T2</b>	S	S	S	S	S	S

	<b>T3</b>	S	P	S	S	S	P
	<b>T4</b>	S	S	S	S	S	S
	<b>T5</b>	S	S	S	S	S	S
<b>S8</b>	<b>T1</b>	S	F	S	S	S	F
	<b>T2</b>	S	S	S	S	S	S

**Total Number of Tests: 28**

**Number of tests that have been successfully completed: 135**

**Number of tests that have been partially completed: 23**

**Number of tests that have been failed: 10**

**Success rate:  $(135+23*0.5)/(28*6) = 87.20\%$**

## **Appendix**

### **List of Interviewees**

#### **Participant A**

SFU Graduate Student  
Location: SFU Library  
Gender: Female  
Date Interviewed: Nov 26, 2017

#### **Participant B**

SFU Undergraduate Student  
Location: SFU Surrey Campus  
Gender: Male  
Date Interviewed: Nov 26, 2017

#### **Participant C**

SFU Undergraduate Student  
Location: SFU Library  
Gender: Male  
Date Interviewed: Nov 27, 2017

#### **Participant D**

SFU Undergraduate Student  
Location: Online  
Gender: Male  
Date Interviewed: Nov 27, 2017

#### **Participant E**

SFU Graduate Student  
Location: Online  
Gender: Male  
Date Interviewed: Nov 27, 2017

#### **Participant F**

SFU Graduate Student  
Location: Online  
Gender: Male  
Date Interviewed: Nov 27, 2017