An Introduction to LaTeX Using Scientific Word

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1 Getting Started

1.1 What Are We Doing Here?

After doing so, click on \Typeset" again, then select the newly-unghosted \Compile PDF" option. Once that's complete, the folder you created will have the `.tex` le, the PDF, and all the incidentals required.

1.3 Adding Some Toolbars

With that complete, we can turn our attention to learning more about typesetting nuances. Let's begin by tweaking the sentence you just wrote. After all, the word \gosh-darned" is pretty informal and should be put in quotation marks. So, put regular quotation marks around the word and click \Preview PDF." Observe that the end result looks pretty bad. Why is this? [illegible]

1.4 Applying a Tag

Not all of the things you can pull o are included in the buttons | just many of the basic ones are included. But, no worries. We can apply a host of commands with a simple right click. Suppose we want to make a word larger. Simply type the word,

subitem | for example, if you want (a) and (b) to pop up under a number 1. | then just apply the tag multiple times.

2 Basic Math Typesetting

2.1 Math Mode

We now move on to basic math typesetting. LaTeX typesets input di erent depending on the mode that it is in; up to this point, we have operated in *text* mode. To typeset mathematics, we will need to enter *math* mode. This is not all that di cult to do; in Scienti c Word, there is a button at the top of the screen with a large black \T."

Math Templates. We've got quite a few toolbars going now, so you might want to drag and drop them to come up with a better set-up to suit your eye.

Let's review what these buttons mean. Generally, these are for getting the location of mathematical formulae correct. Give these each a shot as we go along.:

1. The leftmost of these is a fraction button, as is evidenced by the two red boxes above a black line. Clicking on this button places an empty fraction into your document; you can click on the empty box above or below the line to add the numerator and denominator. Notice that Scienti c Word automatically enters math mode when you click on the fraction button, so whatever you add will already be in pretty math format. So, clicking on the button and adding letters will get you something like $\frac{3x}{4y}$. Entering a space or moving to the right with an arrow button will get you out of the fraction.

2. To its right is the square root radical. This is easy enough to work with | clicking on it gives you an empty box inside a radical, which results in something like $\sqrt{58}$. Again, you can get out of the radical with a right arrow or a space.

3. Next come buttons for superscripts | like this, 8^3 | and subscripts | similarly, b_i. Notice that you can add more than just one character in a subscript or superscript, and you can use them simultaneously | for example, x_{ij}^{t}.

4. The next two buttons are handy for adding parentheses and brackets; clicking on them gives you a paired set. What's really cool about these is that they automatically adjust to the correct size. For example, click on the bracket button, then click on the fraction button. The brackets automatically get a little taller to accommodate the fraction!

5. Next up is the summation operator, as evidenced by the capital . Often in formulae you'll see this with letters and terms at the top and bottom of the . You can use subscripts and superscripts to achieve this e ect in basic math mode. So, click on the summation button, then click on the subscript button. In the new box, add $i = 1$. Now click on the right arrow to get out of the subscript box, and click on the superscript button. In the new box, add an n. The end result should look like $\sum_{i=1}^{n}$.

6. The button to the right is the symbol for integrals: $\int$. Just as with the summation operator, you can use subscripts and superscripts to achieve the required e ect if need be: for example, $\int_{3x}^{1}$.

7. Finally, there is a button that inserts appropriate symbols for many basic units, such as feet, pounds, and the like.

This is a really handy set of buttons, and you'll want to keep it in a prominent spot on your workspace.

2.3 Math Objects

Now let's add yet another toolbar | click \View," then \Toolbars." Now add the Math Objects toolbar.

5.

(b) Symbol Panels: a lot more of these are now helpful to us. We can add lowercase or uppercase Greek letters, mathematical operators like + and , symbols, Latin and other kinds of typeface, and basic grammatical stu .

(c) Math Templates: basic fractions, radicals, subscripts, superscripts, and the like.

(d) Math Objects: a powerful set of buttons that lets us make beautiful and varied formulae in Display mode.

3 Some Fun Document Miscellany

3.1 Packages: The `fancyhdr` Example

Today, we'll get a little bit more into the workings of LaTeX, and we'll learn how to do several important tasks while doing so. First, let's apply a fancy header to our document. You might have seen this kind of thing before; the top of the page will feature a line, and headers fall above the line at the left, center, and right of the page. Lots of people use this often, so it's an important skill to pick up.

LaTeX uses *packages* to maintain exibility; there is a default bunch of packages included in Scienti c Word, but some need to be added. In this instance, we'll need to tell LaTeX to use the `fancyhdr` package. To do so, let's do the following:

1. Click on the \Typeset" menu button, then select \Options and Packages."
2. This causes a new window to pop up. It has two tabs: \Class Options" and \Package Options." Highlight the \Package Options" tab.
3. There shouldn't be anything in the window right now. Let's add a package by clicking \Add."
4. Scroll down to `\fancyhdr`." Highlight it and click \OK."
5. `\fancyhdr`" should now appear in the window. Our work here is done; click \OK."

So, that is half the battle won. We now need to get into the actual LaTeX code to set the options we want for our page style. We will operate within the preamble of the code. So, do the following with me:

1. Again, click \Typeset." This time, choose \Preamble."
2. Again, a window pops up. This one has all kinds of weird stu going on | this is LaTeX code that sets up the document in a certain way. We want to make a mild tweak to get fancy headings.

3. First, we need to change the style of the page. The default is \plain," which doesn't have the line at the top. We want to change this to the \fancy" option. This is easy enough; underneath all the weird code | the last should be setting a new environment | type `\pagestyle{fancy}`.

4. Let's add the headings we want. To show all three kinds of headings, do the following:

   (a) Under your last command, enter `\lhead{Left Heading}`

   (b) Under that, enter `\chead{Center Heading}`

   (c) Under that, add `\rhead{Right Heading}`

That's all we need! So, type some jibberish into the document and Preview the PDF. You should see your headings in the new document with a very fancy header if I may say so myself.

3.2 Basic Document Properties

Let's use packages to handle some basic document properties like spacing and margins. First, we'll achieve doublespacing by using the `setspace` package. Same as before:

1. Click \Typeset," then select \Options and Packages."

2. From the \Package Options" table, click \Add."

3. Scroll down to `setspace`; highlight it and click \OK."

But now we've got a new option to get the spacing right. On the \Package Options" tab, highlight `setspace` click \Modify" next to \Currently Selected Options for the Package setspace." From here, we can simply click the line spacing we want | double spacing, one-and-a-half spacing, etc. Select double spacing. If you Preview your PDF with this in place, you'll notice that the document is in fact double spaced. Easy.

Now let's handle our margins. This time, we will use the `geometry` package. You know how to get it going, right? Same as with `fancyhdr` and `setspace` | just click \Typeset," then \Packages and Options." If you check out the options for the `geometry` package, you'll see that it will let us manipulate the typesetting in a lot of ways. To get the margins how we want them, though, we'll need to get into the Preamble again. So, click on \Typeset," then \Preamble." Underneath your additions for the headers, type the following:

```
\geometry{left=1in,right=1in,top=1in,bottom=1in}
```

As you may have guessed, these manipulate the left margin, right margin, top margin, and bottom margin in turn. Preview the PDF, and you've got yourself some smaller margins!

A note on packages: obviously there are a lot of packages in LaTeX. There isn't enough time to make a course on how to use them all, but most packages have a manual that is easy enough to find via

Close the Front Matter window, and preview your PDF. You should see all of your

1	2	3
4	5	6
7	8	9

Observe that we can do some formatting on the y in Scienti c Word. For example, we might want to put a vertical line between the rst and second column. Easy enough | just highlight the left column with your mouse, then right-click on it. From here, select \Properties." A new window will pop up, and observe that you can decide what kind of lines you'd like to add in the middle tab, entitled \Lines." Click on \Single Line" under \Line Style." Next, choose the right line position. You should see a preview in the window. Click \OK," and the line will appear in your table in the interface. If you preview the PDF now, you should get something like

1	2	3
4	5	6
7	8	9

A common formatting practice is to put a double-line above the top row. Again,

4.2 Footnotes and Endnotes

Technical and academic papers are rife with footnotes and endnotes. Happily, we can enter these into our document quite easily with Scienti c Word. In your Scienti c Word document, type a sentence | say, \I like using Scienti c Word so much." Ensure that your cursor is at the end of your sentence, then click \Insert" and select \Note." A new window will appear. In the text section of the box, type \This is a complete lie." On the right side of the new window, you can order the program to add your new entry as either a footnote at the bottom of the page or as an endnote at the end of the document. I generally prefer footnotes, and everybody has their own preferences.

Click \OK," and you should see a gray button that says \Footnote" or \Endnote" where you entered your note. Double-clicking this will cause the window to appear again in case you need to make changes. Quite easy!