

## Creating an Advanced Document Using Scientific WorkPlace

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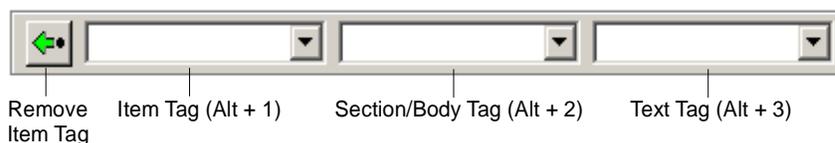
### 1. OPEN A NEW FILE

Follow the instructions below to start your document.

1. Create a new folder on the Desktop and rename it by your name.
2. From the View menu, turn on Invisibles, Helper Lines, Input Boxes, Markers also Toolbars.
3. On the Standard toolbar, click  or, from the **File** menu, choose **New**.
4. From the Shell Directories list, choose **Articles**.
5. From the Shell Files list, choose **Similar to Bulletin of the American Mathematical Society**.
6. Choose **OK**.

The program opens a new document displaying information about the shell you choose.

7. On the Standard toolbar, click  or, from the **File** menu, choose **Save** or **Save As** to save the file you have just created in your folder.
8. Enter a file name for your sample document.  
You can use any acceptable Windows file name.
9. Choose Save.
10. Delete the information about the shell: from the Edit menu, choose Select All and press Delete.
11. From the Section/Body Tag popup list on the Tag toolbar, click Body Text.



12. From the View menu, choose Toolbars.
13. Check Typeset Editing, Typeset Object, and Field, and then choose Close.

## 2. CREATE THE FRONT MATTER

The title, author, date, abstract, and table of contents for your sample article are called the *front matter*. You enter the information in fields in the Front Matter dialog box.

### 2.1. Open the Front Matter dialog box and enter your name.

1. On the **Typeset** toolbar, click  or, from the Typeset menu, choose Front Matter.
2. Place the insertion point immediately to the right of the shaded box labeled Author: and to the left of the words *The Author*.
3. Select the words *The Author*.
4. Type your name.

### 2.2. Enter the name of the second author. (If the article has a second author.)

1. Press Enter.
2. To end the field for the first author, click  on the Tag toolbar.
3. Click the Item Tag popup list on the Tag toolbar.
4. Choose Author.  
A shaded field box labeled Author: appears on the screen. This box indicates you're starting a new author field.
5. Type the second author name.

### 2.3. Enter the title and the date.

1. Select the words *The Title of an Article for the Bulletin of the AMS* and for example replace them with these words: **A Simple Mathematics Article**
2. Select the words *The Date* and replace them with today's date, using any format you want.
3. Don't enter anything in the Make Title field. This field tells the program to generate the title information for your article when you typeset.

### 2.4. Enter the abstract. You can use all the features available in the program window to enter the abstract, changing from text to mathematics as necessary:

- On the Standard toolbar, click  to change to mathematics.
- On the Standard toolbar, click  to change to text.

Note that you don't have to type the word *Abstract* at the beginning of the paragraph.

To make a character boldface in mathematics, click  on the Editing toolbar

1. Select the words *Replace this text with your own abstract*.
2. Type your own paragraph.

**2.5. Request a table of contents.** When you typeset your document, the program automatically generates a table of contents (abbreviated TOC) using the section headings throughout your document. To have the program print the table of contents, you must insert a special field similar to the one that creates the title.

1. Make sure the insertion point is at the end of the abstract you just completed.
2. Press Enter.
3. In the Item Tag popup list on the Tag toolbar, click Make TOC.
4. Choose OK.

### 3. CREATE SECTION 1

The sample article contains four main sections. Each section contains references to other parts of the document, footnotes, or bibliography items. The program uses each section heading to generate the table of contents when you typeset the document.

#### 3.1. Enter the section heading.

1. In the Section/Body Tag popup list on the Tag toolbar, click Section.
2. Type for example **Mathematics and Text**

Note that you don't have to type the section number. The program provides it automatically when you typeset.

3. Press Enter to end the heading paragraph.

The heading you entered shows on the screen in large letters on a shaded background. Remember that the screen appearance of your document is different from the printed appearance.

**Type the paragraph.** The paragraph contains mathematics and text and ends with a reference to the first item in your bibliography.

1. Type the contents of the paragraph, changing from mathematics to text whenever necessary:

**Let  $H$  be a Hilbert space,  $C$  be a closed bounded convex subset of  $H$ ,  $T$  a nonexpansive self map of  $C$ . Suppose that as  $n \rightarrow \infty$ ,  $a_{n,k} \rightarrow 0$  for each  $k$ , and  $\gamma_n = \sum_{k=0}^{\infty} (a_{n,k+1} - a_{n,k})^+ \rightarrow 0$ . Then for each  $x$  in  $C$ ,  $A_n x = \sum_{k=0}^{\infty} a_{n,k} T^k x$  converges weakly to a fixed point of  $T$**

2. Change to text.
3. Enter the citation:

- (a) On the Typeset Object toolbar, click  or, from the Insert menu, choose Typeset Object and then choose Citation.
- (b) In the Key box, type **Hani**  
You will use this key later to identify the bibliography item.

- (c) Choose OK.
- (d) The program displays a small shaded box containing the key for the item you cited.

4. Press Enter.

#### 4. CREATE SECTION 2

Section 2 illustrates in-line and displayed mathematics and contains a reference to a numbered equation.

##### 4.1. Enter the section heading.

1. In the Section/Body Tag popup list, click Section.
2. Type: **In-line and Displayed Mathematics**
3. Press Enter.

##### 4.2. Type the first part of the paragraph.

1. Type the first part of the paragraph, changing from text to mathematics when necessary:

The expression  $\sum_{i=1}^{\infty} a_i$  is in-line mathematics, while

$$\sum_{i=1}^{\infty} a_i$$

is displayed. Consider the numbered equation

$$u_{tt} - \Delta u + u^5 + u|u|^{p-2} = 0 \text{ in } \mathbf{R}^3 \times [0, \infty[.$$

2. Number the equation:

- (a) Place the insertion point to the right of and outside the last display.
- (b) On the Standard toolbar, click  or, from the Edit menu, choose Properties.
- (c) In the Number box, check Auto.
- (d) In the Key for this Line box, type **wave**  
You will use this key to create a reference to the equation in the next sentence.
- (e) Choose OK.

A small shaded box appears to the right of the equation. The box contains a # sign. When you typeset the document, the program automatically replaces the field box with the equation number.

**4.3. Type the last part of the paragraph.** The sentence contains a cross-reference to the numbered equation. When you typeset, the program will create the correctly numbered cross-reference for you.

1. Type

**We seek solutions in all space, despite the non-linearity of Eqn.**

2. Add the equation reference:

(a) On the Typeset Object toolbar click  or, from the Insert menu, choose Typeset Object and then choose Cross Reference.

(b) In the Key box, type **wave**

(c) Choose OK.

A field box for the cross-reference is displayed. The box contains the word *ref:* and the key of the numbered equation. When you typeset the document, the program automatically replaces the box with the number of the equation that has the key *wave*.

3. Press Enter.

**4.4. Insert table and picture.** To insert a table:

1. Click  or from the Insert menu, choose Table.
2. Chose the number of rows and columns you need.
3. Change the properties of the table as necessary and choose OK.

To Import a graphic:

1. Click  or from the File menu, choose Import picture.
2. Chose Folder File name and file type then click open .
3. Double click on the picture to change its properties if you like.

## 5. CREATE THE BIBLIOGRAPHY

When you create a list of bibliography items, the program automatically creates a heading for the list and automatically numbers the items in the list. The bibliography in this sample document contains three items. In section 1 you created a citation for the first item using the key *Hani*. When you create the item itself, you must enter the key so the program can create the cross-reference.

### 5.1. Create the first item in the bibliography.

1. In the Item Tag popup list, select Bibliography item.  
The program displays a shaded box containing the word *bibitem* and opens the Bibliography Item Properties dialog box.
2. In the Key box, type **Hani**  
The key is displayed in a shaded box.
3. Choose OK.
4. Type the bibliographic information for the first item.  
Remember to apply the Italic text tag to the title of the book. Apply the Normal text tag to turn off italics.  
**A. Hani, N. Dunford and J. Schwartz, *Functional Analysis*, v. 2, Interscience Publishers, Inc., New York, 1964.**
5. Press Enter to end the paragraph.  
The program displays another shaded box containing the word *bibitem* and opens the Bibliography Item Properties dialog box.

### 5.2. Create the second item in the list. You don't cite this item, so you don't need to give it a key.

1. Choose Cancel.
2. Type the bibliography information.  
Apply the Italic text tag to the title of the lecture.  
**W.P. Thurston, *Geometry and topology of three manifolds*, Lecture notes, Princeton Univ., NJ, 1979.**
3. Press Enter to end the paragraph.  
The program displays another *bibitem* box.
4. Choose Cancel to leave the dialog box.
5. Click  to end the list of bibliography items.

Your bibliography is complete.

## 6. TYPESET THE ARTICLE

You can preview the typeset appearance of your article before you print it.

### 6.1. Typeset preview and print the article.

1. On the Typeset toolbar, click  or, from the Typeset menu, choose Preview.  
You don't need to save this file and you can print it immediately.
2. Or on the Typeset toolbar, click  or, from the Typeset menu, choose Print.