

## **VBA Final Project: ArticleMaker**

### EXECUTIVE SUMMARY

The business of “content creation” can be profitable both on-line and off. Particularly in the area of on-line content creation, though, the speed of creation is important. An individual article on a niche blog might only generate a few dollars of advertising revenue per year. Similarly, articles submitted for publication to Yahoo’s AssociatedContent.com, HubPages.com, and other user-submitted content sites generate small amounts of money.

To make a full-time income from on-line content creation, writers must consistently produce numerous completed articles in an hour. On a pay-per-article website, for example, a writer might receive an average of \$3 per completed article. Assuming a 250-day work year, a writer would have to write 100 articles per day to generate a \$75,000 annual income from this site.

My ArticleMaker program makes this rapid creation of original content possible by automating the most time-consuming elements of content creation – namely, research and citation. Writers enter facts (with citations) into the program, thereby creating a database of cited facts for use on future articles. To aid in this process, the program includes a “Search Wikipedia” function that export any Wikipedia article to a Word document, accompanied by the correct citation. Once facts are entered into the database, writers use the “Write an Article” function to select facts for inclusion in a particular article. The program exports a Word document with the facts listed, each followed by a correct citation, and with a properly formatted bibliography. It is then a simple matter for the writer to expound upon the cited facts, and thereby create a completed article.

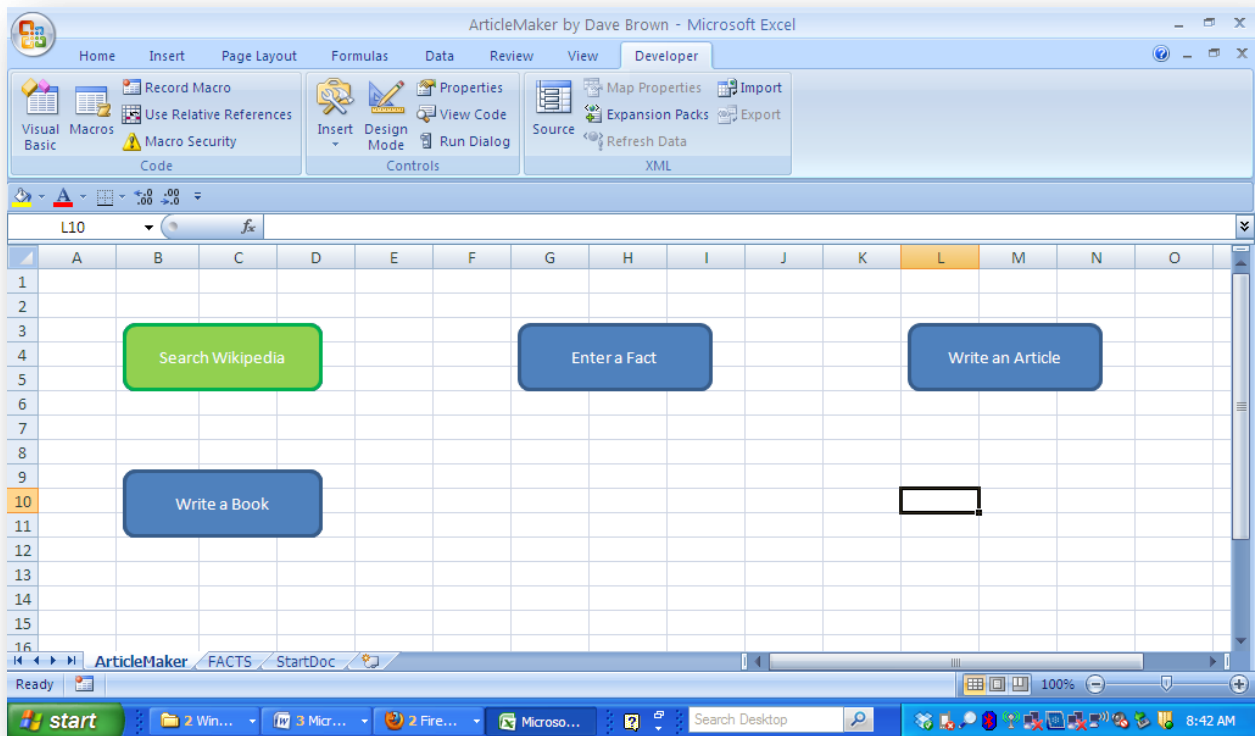
As an added bonus, I have included a “Write a Book” function that guides a writer through the creation of an outline for a full-length non-fiction book.

### IMPLEMENTATION

#### **I. How It Works**

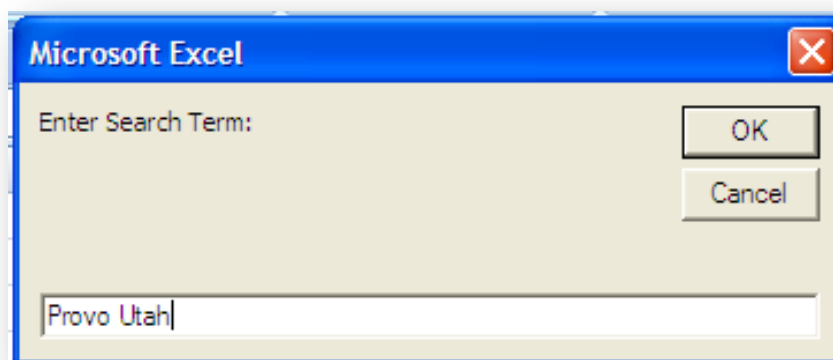
ArticleMaker automates content creation by assiting the user in finding citation material (by searching Wikipedia), creating a database of such material, assembling selected facts into an article format with complete citations, and guiding the user through the creation of the outline of a non-fiction book.

Accordingly, ArticleMaker's opening screen (see screenshot below) presents four options:



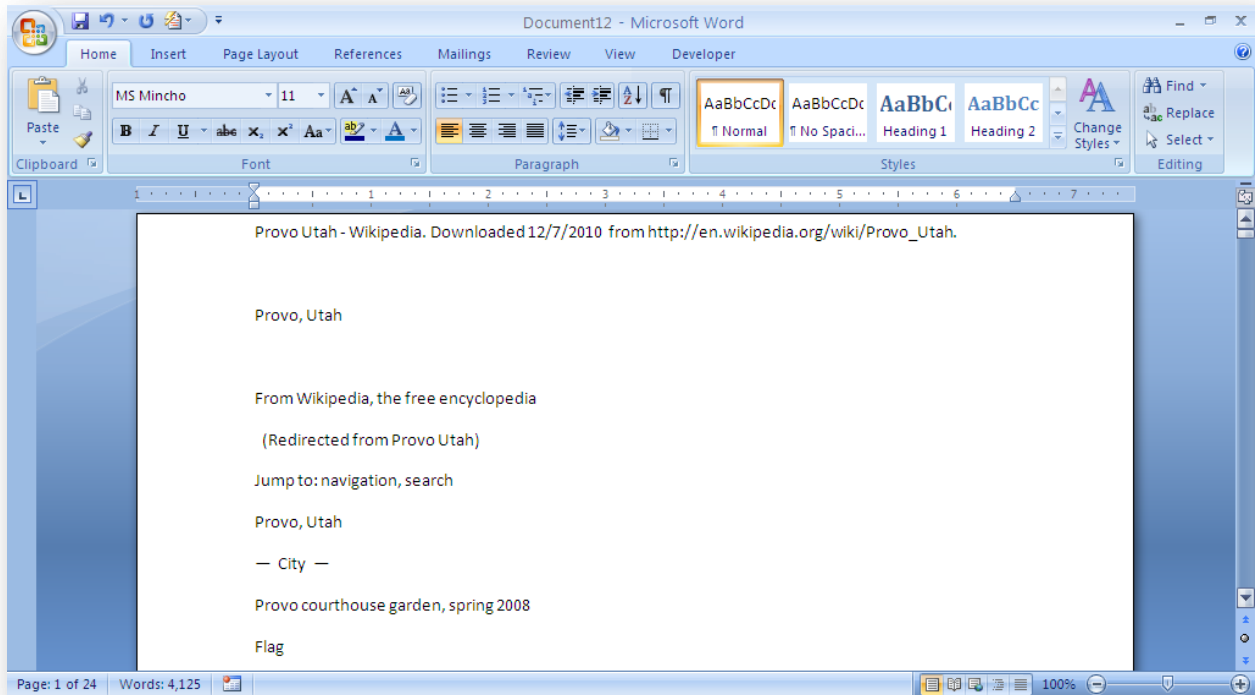
#### A. Search Wikipedia

If the "Search Wikipedia" button is clicked, the user is presented with a prompt to enter a search term:



After entry of the search term, ArticleMaker imports the relevant Wikipedia page into Excel. The program then creates and opens a Word document with the correct citation for the Wikipedia article (including today's date as the date of download) at the top, followed by the text of the article.

The following screencap displays the beginning of a Wikipedia output file, featuring the citation and the beginning of the Wikipedia article.



The user might choose to pull facts from the Wikipedia output file for entry into ArticleMaker's fact database, as described in the next section below.

## B. Enter a Fact

To enter a fact, the user clicks the "Enter a Fact" button. The user is then prompted to enter a fact with a citation, as shown below:

A screenshot of a "Fact Form" dialog box. It has a blue title bar with a close button. The form contains two text input fields. The first field is labeled "Fact:" and contains the text "Provo, Utah has a population of 555,551.". The second field is labeled "Citation:" and contains the text "Provo Utah - Wikipedia. Downloaded 12/7/2010 from [http://en.wikipedia.org/wiki/Provo\\_Utah](http://en.wikipedia.org/wiki/Provo_Utah)". Below these fields is a button labeled "Finished".

The fact and citation are then stored in ArticleMaker's "FACTS" worksheet for use in the "Write an Article" function. This database can hold up to 1,048,576 facts (limited by the number of lines in the "FACTS" worksheet), which is far in excess of what most users would need.

### C. Write an Article

After clicking the "Write an Article" button, the user is presented with the following form:

The screenshot shows a window titled "ArticleForm" with a blue title bar. Inside, there's a section "Select a Fact by Clicking It:" on the left, containing a list of facts. The fact "DEFINE: Account executive: The brokerage firm employee who handles stock orders for clients. See: Broker." is highlighted. To the right of this list is a section "Click a Button to Remove It:" with a list of buttons. At the bottom, there's a search box labeled "Narrow Fact List With A Search Term:" with a "Search" button, a "Restore All Facts" button, and a "Publish to Word" button. There are also "Cancel" and "Clear Buttons" buttons.

The large box on the left of the form lists all of the facts from the FACTS worksheet (as an object list). Because there can, potentially, be a large number of facts in this database, there is a search box at the bottom left corner of the form that can be used to limit the facts displayed by entering a search term. After the search term is entered, only those facts that contain the search term will be displayed:

**ArticleForm**

Select a Fact by Clicking It:

- DEFINE: Absolute priority: Rule in bankruptcy proceedings requiring senior creditors to be paid in full before junior creditors.
- DEFINE: Adjustment bond: A bond issued in exchange for outstanding bonds when a corporation facing bankruptcy is reorganized.
- DEFINE: Automatic stay: The restricting of liabilityholders from collection efforts related to collateral seizure. Automatically imposed.
- DEFINE: Bankruptcy: Inability to pay debts. In bankruptcy of a publicly owned entity, the ownership of the firm's assets is transferred to the bankruptcy court.
- DEFINE: Bankruptcy cost view: The argument that expected indirect and direct bankruptcy costs offset the other benefits from bankruptcy.
- DEFINE: Bankruptcy risk: The risk that a firm will be unable to meet its debt obligations. Also referred to as default or insolvency risk.
- DEFINE: Bankruptcy view: The argument that expected bankruptcy costs preclude firms from financing entirely with debt.
- DEFINE: Capital market imperfections view: The view that issuing debt is generally valuable, but that the firm's optimal choice of capital structure is affected by imperfections in capital markets.
- DEFINE: Commercial risk: The risk that a foreign debtor will be unable to pay its debts because of business events, such as business failure.
- DEFINE: Cramdown: The ability of the bankruptcy court to confirm a plan of reorganization over the objections of some class of creditors.
- DEFINE: Creditor's committee: A group representing firms that have claims on a company facing bankruptcy or extreme financial distress.
- DEFINE: Debtor in possession: A firm that continues to operate under the Chapter 11 bankruptcy process.
- DEFINE: Debtor-in-possession financing: New debt obtained by a firm during the Chapter 11 bankruptcy process.
- DEFINE: Discharge of bankruptcy: The termination of bankruptcy proceedings, resulting in cancellation of the debtor's obligations.
- DEFINE: Fair-and-equitable test: A set of requirements for a plan of reorganization to be approved by the bankruptcy court.
- DEFINE: Financial distress: Events preceding and including bankruptcy, such as violation of loan contracts.
- DEFINE: Insolvency risk: The risk that a firm will be unable to satisfy its debts. Also known as bankruptcy risk.
- DEFINE: Legal bankruptcy: A legal proceeding for liquidating or reorganizing a business.
- DEFINE: Negative working capital: Occurs when current liabilities exceed current assets, which can lead to bankruptcy.
- DEFINE: Plan for reorganization: A plan for reorganizing a firm during the Chapter 11 bankruptcy process.
- DEFINE: Prepackaged bankruptcy: A bankruptcy in which a debtor and its creditors pre-negotiate a plan of reorganization.
- DEFINE: Receiver: A bankruptcy practitioner appointed by secured creditors to oversee the repayment of debts.
- DEFINE: Senior debt: Debt whose terms in the event of bankruptcy, require it to be repaid before subordinated debt receives payment.
- DEFINE: Senior mortgage bond: A bond that, in the event of bankruptcy, will be redeemed before any other bonds are repaid.
- DEFINE: Senior security: A security that, in the event of bankruptcy, will be redeemed before any other securities.
- DEFINE: Seniority: The order of repayment. In the event of bankruptcy, senior debt must be repaid before subordinated debt.
- DEFINE: Static theory of capital structure: Theory that the firm's capital structure is determined by a trade-off of the value of debt and the costs of financial distress.
- DEFINE: Subordinated debt: Debt over which senior debt takes priority. In the event of bankruptcy, subordinated debt is repaid after senior debt.

Narrow Fact List With A Search Term:

bankruptcy

Search Restore All Facts Publish to Word Cancel Clear Buttons

Click a Button to Remove It:

When the user clicks on one of the facts, that fact is added to the first available button on the right side of the form. Clicking on any of these buttons will remove the fact listed on that button from the button. By clicking “Clear Buttons” at the bottom right of the form, the user can clear all of the selected facts. The following screenshot shows that six facts have been selected:

**ArticleForm**

Select a Fact by Clicking It:

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Narrow Fact List With A Search Term:

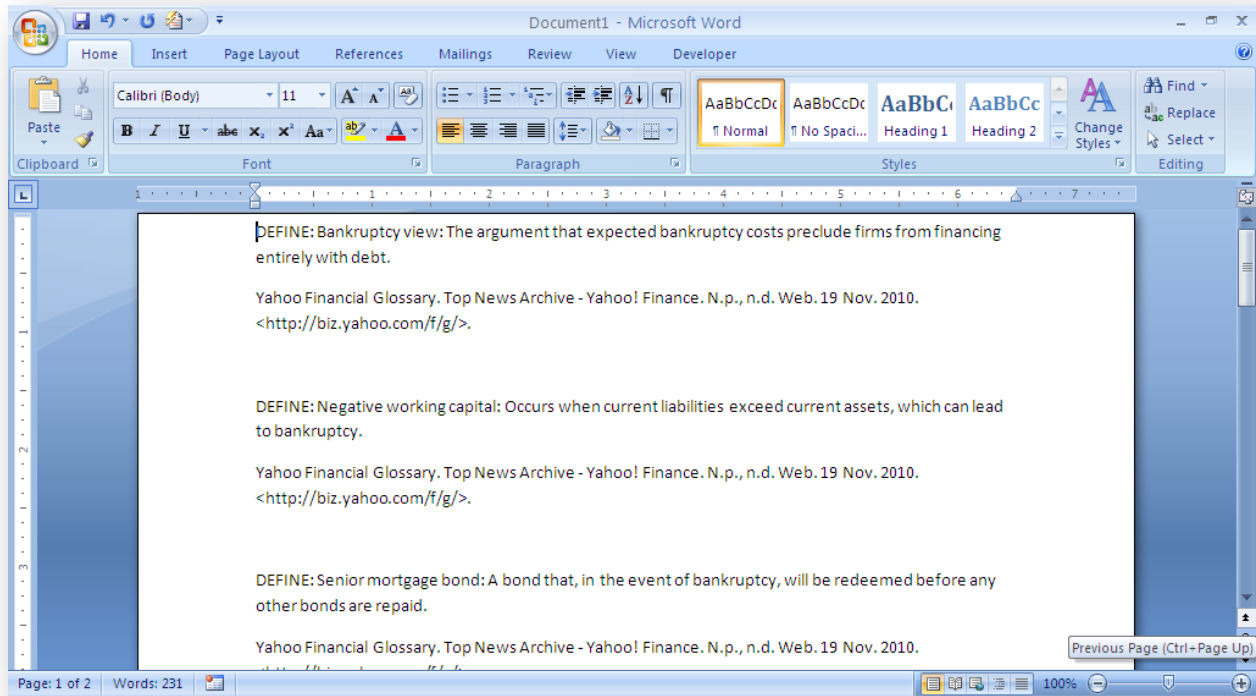
bankruptcy

Search Restore All Facts Publish to Word Cancel Clear Buttons

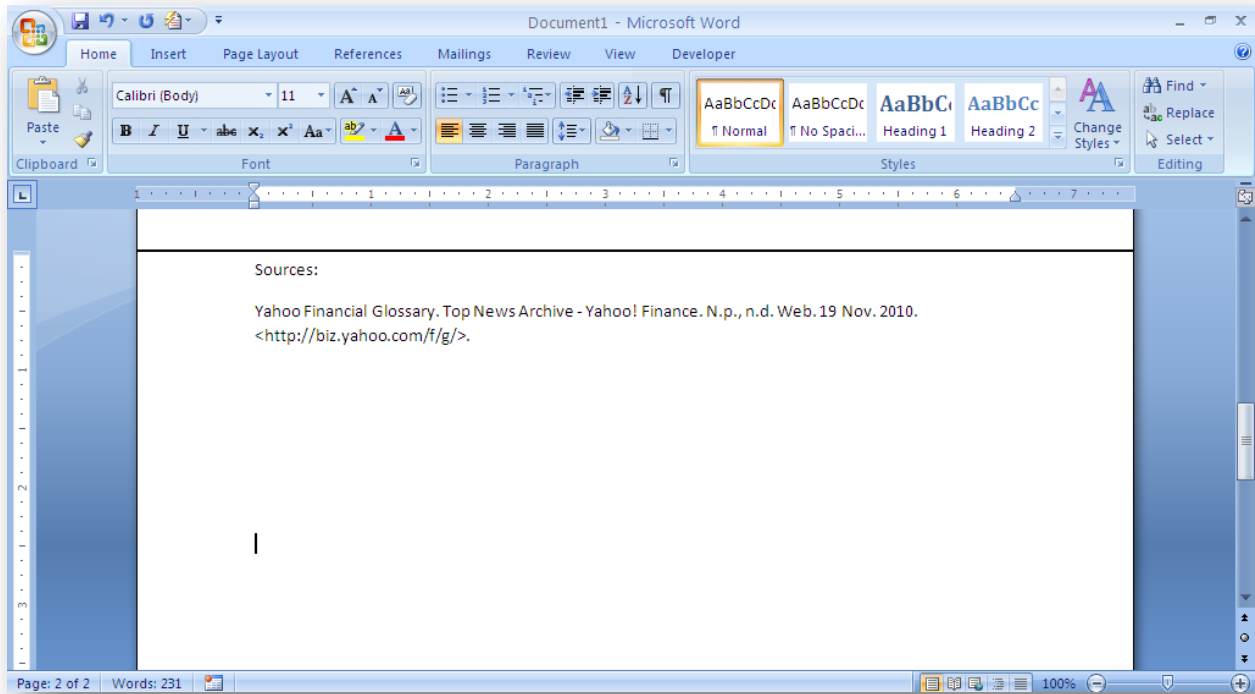
Click a Button to Remove It:

- DEFINE: Bankruptcy view: The argument that expected bankruptcy costs preclude firms from financing entirely with debt.
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- DEFINE: Adjustment bond: A bond issued in exchange for outstanding bonds when a corporation facing bankruptcy is reorganized.

Once the user has selected all the facts necessary to create an article, the user can hit the “Publish to Word” button. ArticleMaker then creates and opens a Word document containing each of the selected facts, as demonstrated in the next screencap:



Each of the facts is followed by the associated citation. At the end of the document, there is a list of “Sources” (i.e., a bibliography), containing all of the citations used, alphabetized, with duplicates removed. For an example of the “Sources” section, see the following screencap; in this example, all of the facts came from the same source, so only one source is listed.



The user now has a Word document containing all of the facts necessary for an article, along with proper citation of the sources for those facts. It is then a simple matter for the user to draft an article worthy of publication on the web. This feature could also be used to write academic papers and other long works for which citations are needed.

Using ArticleMaker, a user can write a 400-word article with citations in less than 5 minutes, as opposed to the 20 to 30 minutes such an article would otherwise take.

#### **D. Write a Book**

ArticleMaker's "Write a Book" function works independently of the other functions. This feature assists the user in creating an outline or first draft of a nonfiction book. The program creates a book using a simple pyramid structure, with facts entered by the user and stored in two arrays.

The pyramid structure looks like this:

Level 1 = The main topic/thesis/argument

Level 2 = 3 supporting points

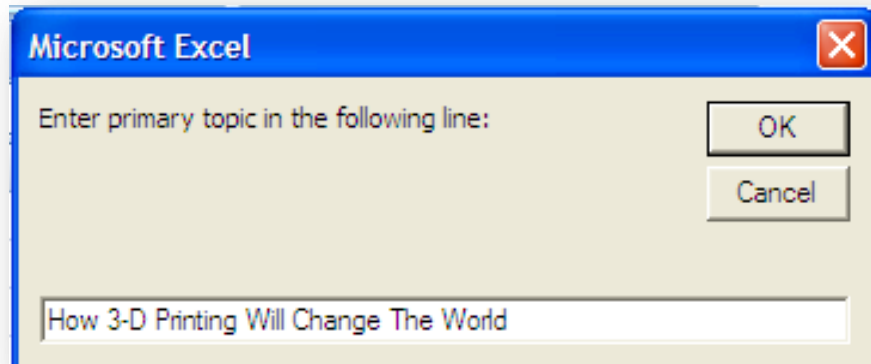
Level 3 = 9 supporting points (one for each of the Level 2 points)

Level 4 = 27 supporting points (one for each of the Level 3 points)

Level 5 = 81 supporting points (one for each of the Level 4 points)

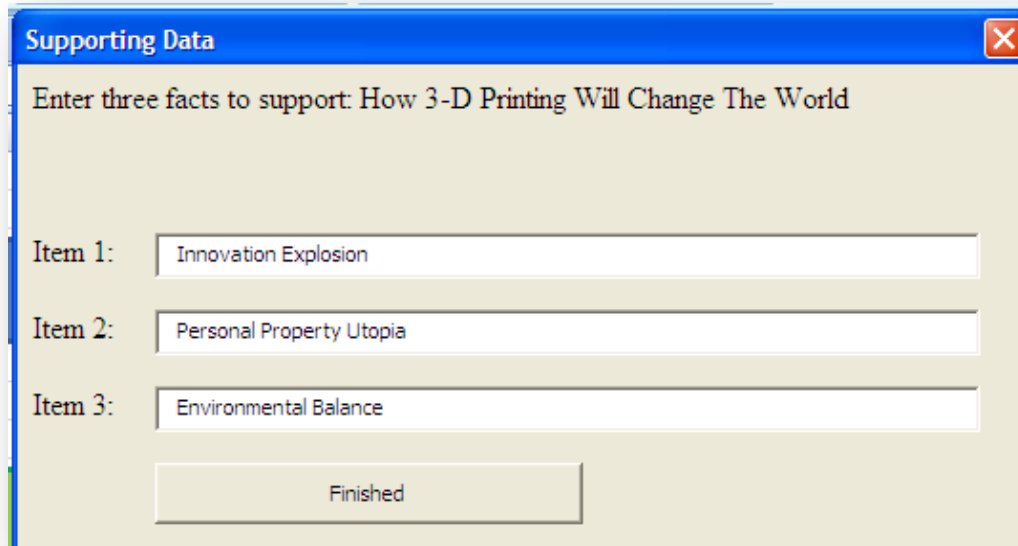
There are, in total, 121 points, with supporting facts for each.

To begin the writing process, the user is prompted to enter the primary topic or thesis.



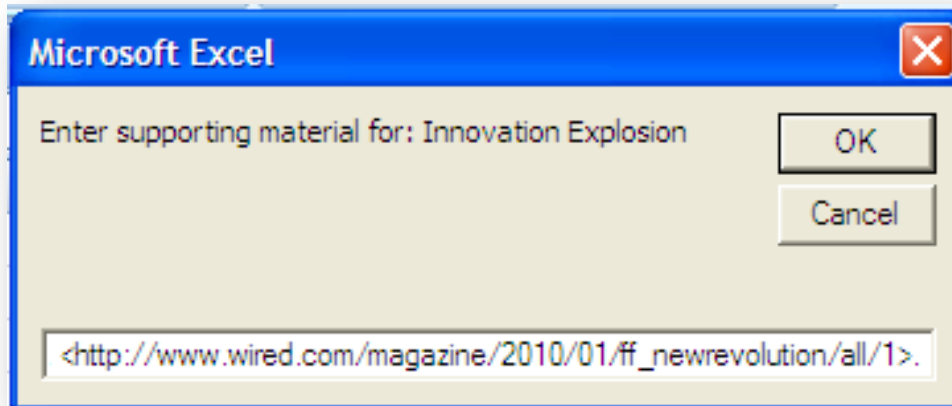
A screenshot of a Microsoft Excel dialog box. The title bar is blue with the text "Microsoft Excel" and a red close button. The main area is light beige. It contains the text "Enter primary topic in the following line:" followed by a large text input field. To the right of the input field are two buttons: "OK" and "Cancel". The input field contains the text "How 3-D Printing Will Change The World".

Then the user is prompted to enter three facts that support the thesis (see below). These “facts” can literally be facts, or they can be general statements worthy of further explication.



A screenshot of a "Supporting Data" dialog box. The title bar is blue with the text "Supporting Data" and a red close button. The main area is light beige. It contains the text "Enter three facts to support: How 3-D Printing Will Change The World". Below this text are three input fields, each preceded by a label: "Item 1:", "Item 2:", and "Item 3:". The first input field contains "Innovation Explosion", the second contains "Personal Property Utopia", and the third contains "Environmental Balance". At the bottom of the dialog is a button labeled "Finished".

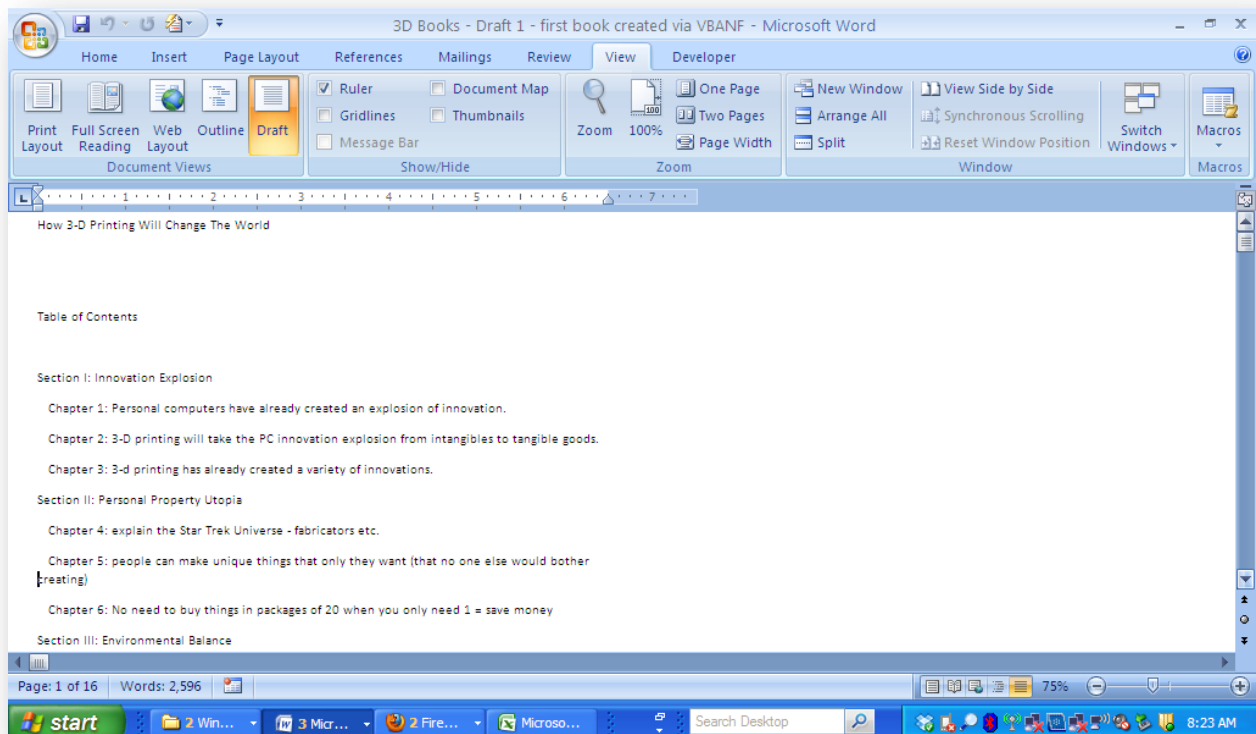
After entering these three facts, the user is prompted to enter a source (e.g., a citation) for each of the facts. Like all data entry points in the program, this entry is optional; if the field is left blank, it will simply be omitted from the draft book.



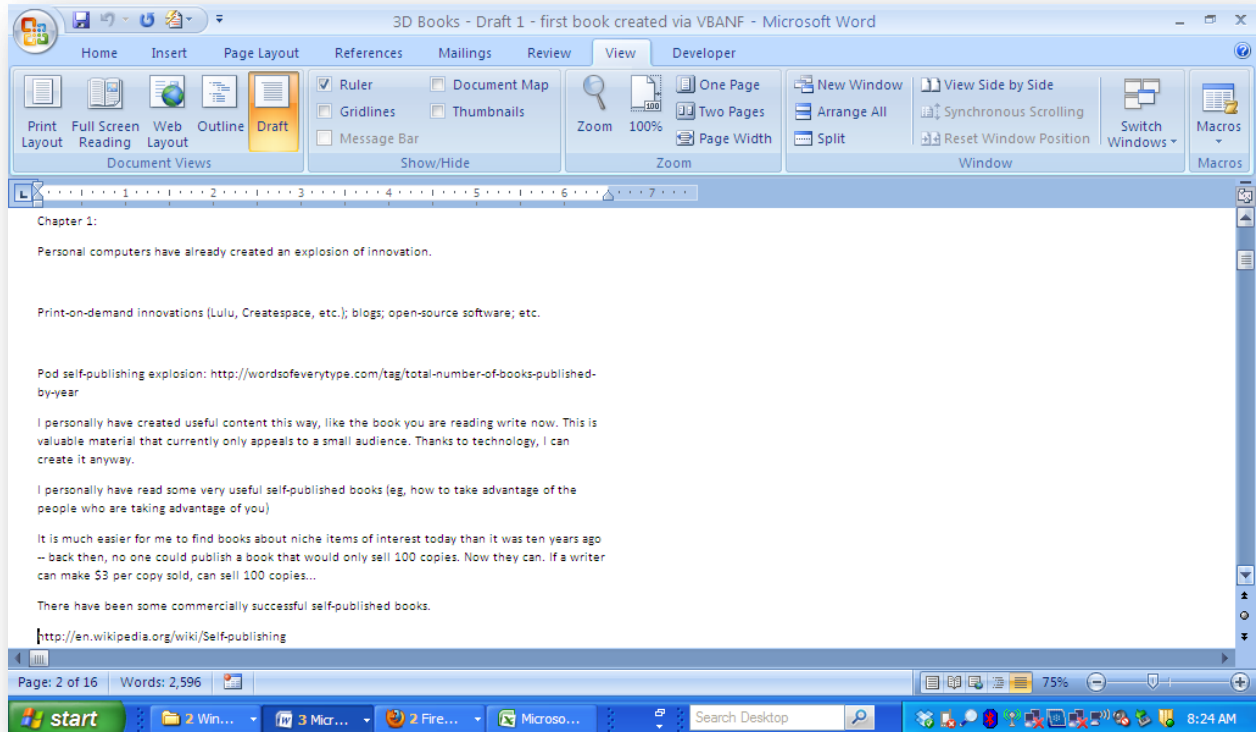
After these steps, the process repeats itself, asking for three supporting facts for each of the original three supporting facts, then asking for three supporting facts for each of the new facts, and so forth through the 5-level structure of the nonfiction book.

The entry process takes almost 2 hours, but results in a book outline of about 30 pages.

The output is in Word format and begins with a table of contents:



After the table of contents, the text is formatted like most nonfiction books, with section titles, chapter titles, and so forth. Each chapter organizes the user inputs (facts paired with citations) in a coherent order (see the following screencap).



Using the output file, the user can quickly draft a full-length nonfiction book. Most writers spend years thinking about a book before putting pen to paper. Once the process is begun, it may be months or years before a first draft is completed. With this ArticleMaker software, the first draft takes less than 2 hours.

## II. Difficulties and Learning

In the course of writing this software, I encountered two difficulties that forced me to change plans.

### A. Website Submission

The main difficulty in this project was my planned “Publish to AssociatedContent.com” feature, which was supposed to take a complete article and automatically submit it to AssociatedContent.com for an upfront payment.

I was close to completing the submission code when Yahoo, the new owner of AssociatedContent.com, completely revamped the submission process making my code largely irrelevant.

Because Yahoo acquired the site recently (and because there is a lot of room for improvement in the site), I anticipate future revisions in the short term. Consequently, I abandoned the submission component.

The lesson here is that any code dependent on a website is liable to become outdated suddenly and without warning. I did, however, learn a lot about manipulating webpages with VBA.

## **B. Fact Entry for “Write A Book” Feature**

The second feature I intended to include but abandoned was a feature in the book-writing process that would allow the user to select facts (and the associated citations) from the FACTS database in the program. This could be somewhat useful for someone creating a fact-intensive nonfiction book.

Unexpectedly, though, processing time became an issue for me.

In my working draft of the program, I used a database of about 5000 facts. This was a large enough number to be useful, but far short of the 1,048,576 facts the program is capable of holding. Even with this small number of facts, though, it takes a couple of seconds for the “Write An Article” form to load.

If I inserted the relevant list object into the input form for every input step in the book-writing process, the length and hassle of the process would increase significantly. Accordingly, I decided not to make this addition, even though it would have been pretty easy to make.

The lesson here is that processing time can matter, even in the level of programs I am capable of writing.

## **III. Conclusions**

The program works remarkably well and has already enabled me to publish dozens of on-line articles in record time. The time savings result not just from the automation of research and citation creation, but also from the ability to use facts and associated citations in numerous different articles over time.

I have searched the web for other content creation automaters, and I believe this is the best software package that does not infringe others’ copyrights.