

Spec Sheet Automator

Executive Summary

For the final project I decided to tackle a real world business problem that my wife faces daily. She is a sole proprietor interior designer and does business as CLID. This business consists of herself working as an independent contractor delivering interior design services working mainly on medical facilities. Currently she has running this business for 4 years and has consistently been working on remodels of skilled nursing centers in California.

The business problem that I tackled for my final project had to do with data entry into excel. I got the idea by asking her what she used excel for in her business and if there was anything that she did on a repeated basis. What came up was the creation of spec sheets, short for specification sheets. Whenever she selects a material, paint color, piece of furniture, etc. she has to create a details spec sheet with all the information to give to client for purchasing. The process for making these sheets is to open an excel spread sheet and manually enter all the information along with proper formatting so she can print it out and send it to the client. Due to the many different types of products she specifies and the detailed required on these spec sheets she was spending lots and lots of time getting these set up and formatted correctly for each item. With hundreds of items per project this was becoming very time consuming. In order to help with this time consuming process I worked on creating a system that would automatically generate the spec sheet and format it how she needs it but also leave it editable so she could make further adjustments.

To make the spec sheet creation process much faster I developed a system in excel that would allow her to select 5 inputs that would be used to generate and format a new spec sheet in seconds. Once the sheet is created she can also go back into it and edit or add details. Built into the system are also several forms that allow her to add projects and manufacturer data which are used in the creation of the specs. By using this spreadsheet customization she estimates she will be able to save days of work over the course of a month.

Implementation documentation

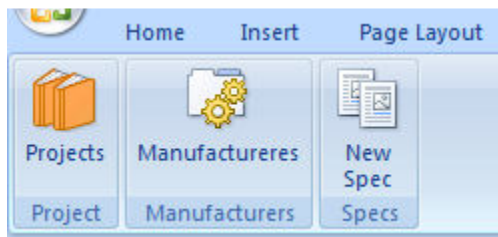
When building the system I split it up into 3 separate parts to help me better wrap my head around what needed to be done. These parts are described below.

Part 1 - User Interface

It was very important to me that this system would actually be usable so I wanted to make sure there was a user interface she could understand and would want to use. Consequently I created the following form and ribbon buttons to the spreadsheet.

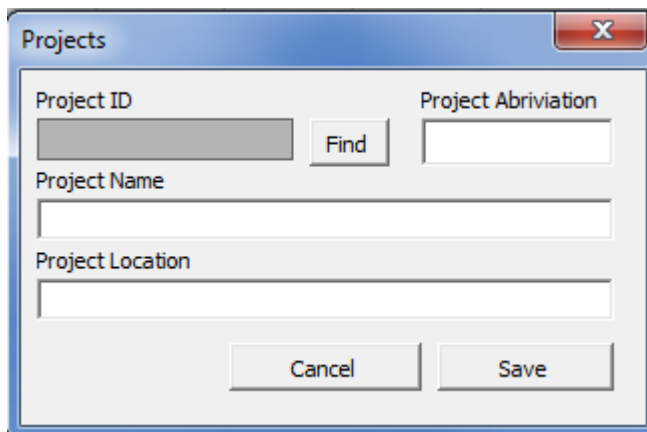
1. Ribbon Controls

- a. To make the interface more usable I created a new tab called CLID and added 3 buttons for adding/editing projects and manufactures and also one for generating a new spec.



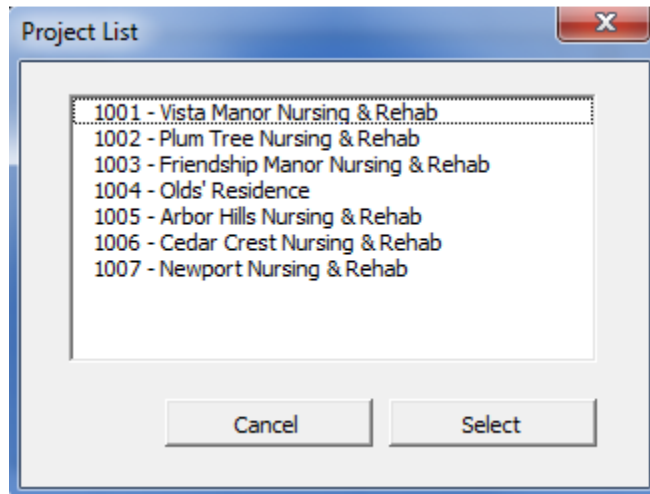
2. Projects Form

- a. I created a form this opened when you click on the projects button in the ribbon that allows the user to create and update projects.
- b. There is also a lookup functionality that allows you to lookup a project that you want to edit.

A screenshot of a Windows-style dialog box titled 'Projects'. The dialog box has a standard title bar with a close button (X). Inside the dialog, there are several input fields and buttons. At the top, there are two labels: 'Project ID' and 'Project Abriivation' (note the typo). Below 'Project ID' is a text input field, and to its right is a 'Find' button. Below 'Project Abriivation' is another text input field. Below these are two more text input fields labeled 'Project Name' and 'Project Location'. At the bottom of the dialog, there are two buttons: 'Cancel' and 'Save'.

3. Projects Lookup Form

- a. I created another form to be used with the projects lookup functionality. When you click on the find button from the projects window the Projects Lookup form is opened and you can select the project you want to work on. Once the project is selected the fields are populated in the projects form.



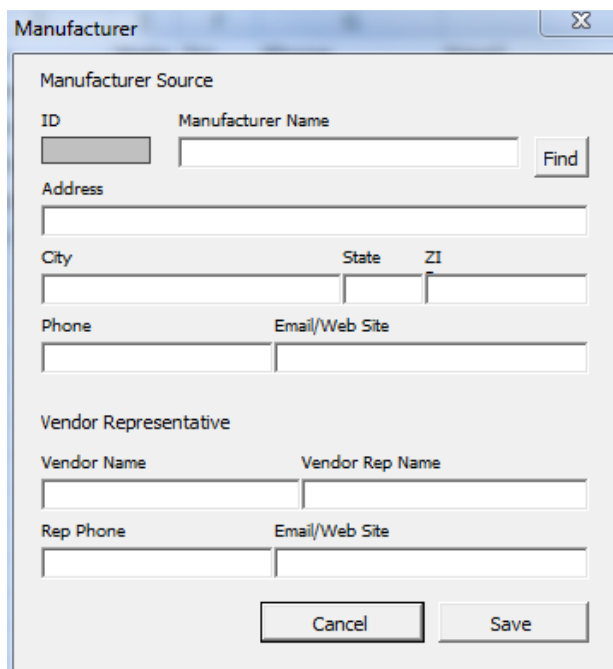
The screenshot shows a dialog box titled "Project List" with a close button (X) in the top right corner. Inside the dialog, there is a list box containing the following text:

- 1001 - Vista Manor Nursing & Rehab
- 1002 - Plum Tree Nursing & Rehab
- 1003 - Friendship Manor Nursing & Rehab
- 1004 - Olds' Residence
- 1005 - Arbor Hills Nursing & Rehab
- 1006 - Cedar Crest Nursing & Rehab
- 1007 - Newport Nursing & Rehab

At the bottom of the dialog, there are two buttons: "Cancel" and "Select".

4. Manufacturers Form

- a. The Manufacturers form has the same functionality as the projects form. It opens when you click the Manufacturers button and allows you to create new manufacturers or edit existing ones.
- b. There is also a lookup functionality in this form.



The screenshot shows a form titled "Manufacturer" with a close button (X) in the top right corner. The form is divided into several sections:

- Manufacturer Source:** Contains fields for "ID" and "Manufacturer Name", and a "Find" button.
- Address:** Contains a single-line text field.
- City, State, and ZIP:** Contains three separate text fields for "City", "State", and "ZI".
- Phone and Email/Web Site:** Contains two separate text fields for "Phone" and "Email/Web Site".
- Vendor Representative:** Contains fields for "Vendor Name" and "Vendor Rep Name", and two separate text fields for "Rep Phone" and "Email/Web Site".

At the bottom of the form, there are two buttons: "Cancel" and "Save".

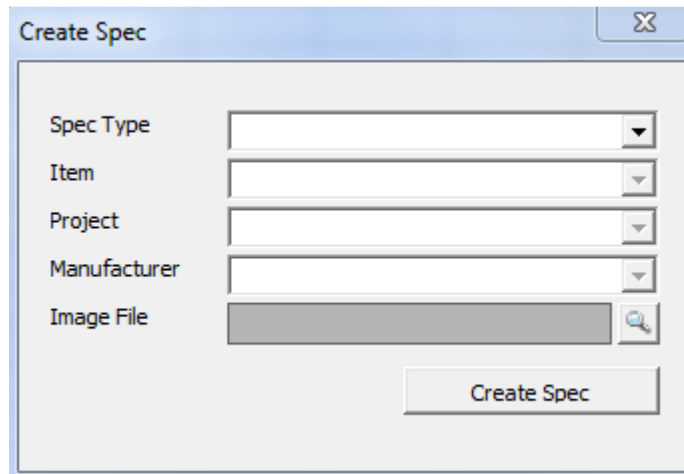
5. Manufacturers Lookup Form

- a. This form was created to allow users to lookup existing manufactures just like in the projects form.



6. Create Spec Form

- a. This form is where the magic happens. When the New Spec button is clicked this form opens and there are 5 different inputs to specify for creating the new spec.
- b. Once the options are chosen the user clicks Create Spec and the new spec is created.



Part 2 - Data Management


The second part of this project was figuring out how to handle the data that was going to be used for the individual specs. Since the specs themselves are derived from projects and manufacturers and the

items I had to keep this information stored and accessible. Since this is excel and I wanted everything to self contained in one spreadsheet I decided to simply use the excel sheets to store the data.

When the projects and manufacturers are saved their values are written back to their respective worksheets so there is also the option to edit information right in the spreadsheets themselves. I also have another worksheet called MiscValues that is used for storing additional, static information that is used in the code. I chose to use a spreadsheet instead of putting these values into the code so the end user could add to or change the values without having to open the VBA editor.

Part 3 – Formatting

Since the whole goal of this system is to turn out a spec that can be printed, it was very important to make the spreadsheet look just right. The formatting of each spec was also one of the most consuming parts of the process when done manually. For this part of the system I wrote a bunch of code that created a new spreadsheet and formatted it so it would be ready to print. A screen shot of the formatted worksheet is shown to the right. There are a couple of things to note on the formatting. One is that the image that is brought in will have to be sized manually by the user but the upper left hand corner will be places in the correct location. Also the Product information and notes information is pulled over from the items worksheet but will be edited by the user.

Carolina C. Lyon Interior Design 1052 Canyon Meadow Drive Apt 3, Provo UT, 84606 (714) 345-2334		
FF&E	Area Rug	Item Number: VM-IF-304
Project Name: Vista Manor Nursing & Rehab		Date: 4/7/2012
Project Location: San Jose, CA		Revised Date:
Manufacturer Source: RBF Group International 1441 W. 2nd St Pomona CA, 91766 Phone: (626) 333-5700 Email/WebSite: http://rbfgroup.net/		Product Image: 
Vendor Representative: RBF Group International Sarah Sherman Phone: (310) 403-7786 Email/Web: sshermansales@gmail.com		
Product Information: Description: Design pattern:		Notes: Field verify all dimensions prior to fabrication

Putting it all together

By focusing on these three areas I was able to write the VBA code necessary to perform each of the individual tasks and then I had to bring them all together so they would function as a usable system. Below is a diagram showing how the system was brought together along with descriptions of the parts.



Click projects and projects window opens

Click manufacturers and manufacturers window opens

Click New Spec to create a new spec. Create Spec window opens.

Click find and list of projects opens. Click select to return to projects window. Cancel to cancel

Once the inputs are selected click Create Spec. This will pull information from the Projects, Manufacturers, and Items worksheets and input them into a new worksheet where the new spec is created and formatted.

Click find and list of manufacturers opens. Click select to return to projects window. Cancel to cancel

Click Save and project data is saved to the Projects worksheet. Click cancel to cancel.

Click Save and manufacturers data is saved to the Manufacturers worksheet. Click cancel to cancel.

Project ID	Project Name	Project Location	Abbreviation
1001	Vista Manor Nursing & Rehab	San Jose, CA	VM
1002	Plum Tree Nursing & Rehab	Los Gatos, CA	PT
1003	Friendship Manor Nursing & Rehabilitation	National City, CA	FM
1004	Older Residence	Irvine, CA	OR
1005	Adler Hills Nursing & Rehab	La Mesa, CA	AH
1006	Cedar Crest Nursing & Rehab	Sunnyvale, CA	CC
1007	Newport Nursing & Rehab	Newport Beach, CA	NP

Manufac ID	Manfac Name	Address	City	State
2001	RBF Group International	1441 W. 2nd St	Pomona	CA
2002	Hunter Douglas	2211 N Elston Avenue, Ste 301	Chicago	IL
2003	Fabricut Contract	9303 East 46th Street	Tulsa	OK
2004	Visual Comfort	2021 Bingle Road	Houston	TX
2005	Good Fellas Industries	1849 East 50th Street	Los Angeles	CA

Learning and Conceptual Difficulties

This was a great practical project that I was really hoping to experience in this class. While I am very pleased with the result of the project there were definitely some ups and downs to getting things right.

The biggest thing I learned from this project was to make sure and plan out the whole project before you start. In the beginning I sat down with my wife and got the details of what she wanted done. While she was good about telling me what she wanted it was hard for me to translate that into actionable items for myself. Consequently I would take her requests and start working on them one at a time. After I finished a couple of the pieces of the system I found myself going back and seeing that I had duplicated the same effort on something earlier. If I would have known all the parts of the system to create I could have had a much better master plan. In the end this only cost me time as I was able to re-write several pieces of the program and got all the functionality I wanted. Even though it was completed and works, I was still frustrated at times because I felt like I was lost in my code and didn't know what was going on. What helped me was to put in a lot of comments in the code and visually separate the different parts that I was working on.

Another big thing I learned is to save my project ALL THE TIME!! Excel isn't the most robust programming platform and in my experience it crashed very often. In my case it probably crashed 3 times for every hour that I was programming. Due to this frequent crashing I lost a lot of code that couldn't be recovered and I had to rework a lot of the code in the beginning. After I lost code 3 or 4 times I started becoming obsessive about saving my work. I think I started saving the code every time I wrote something new. I also noticed that Excel would crash when I clicked the save button ironically, so I started another habit of copying all the code I had been working on and pasting it into a word doc just in case. A lot of hard work goes into these programs and it can be lost very easily and quickly if things go wrong. Knowing this has drilled into my head that I need to backup often and store code in multiple places.

Because I was able to include all of the functionality into the project that I wanted there was nothing I couldn't figure out. The formatting was pretty difficult and time consuming at first but as I found the proper lines of code on the internet it became much smoother. Knowing the syntax for VBA code in excel will be very helpful going forward in my job and also in life as I look for ways in which I can simplify the processes that I run in excel.

Assistance

For this project I didn't receive any help on the coding except for looking things up on line. The process of doing all the code myself helped me become more confident in my abilities to actually create functioning systems on my own. The only other person that helped me was my wife who helped model out the solution and provided me with the data that was to fill the spec sheets.