Allpine Lumber Price Index and Invoice Creator

Kyle Martin

Executive Summary

In the early 1940's, Allpine Lumber began as a small lumber mill, focused principally on producing rough-cut dimension lumber for the residents of a small part of southern Colorado. Today, Allpine Lumber is one of the principal suppliers of house logs and other planed materials for log homes, not only for Colorado, but also for most of the Midwest and other parts of the United States.

Allpine Lumber has made a lot of changes since the 1940's with upgrades to equipment and processes. In the not too distant past, an accidental fire burned down a large portion of the lumber mill. Almost as a blessing in disguise, this allowed Allpine Lumber to make some important changes to their processes that have changed their overall cost structure. The problem that they now face is realigning the prices on their products to match the cost it requires to produce those products. Their prices are currently based on an old cost structure and I created my project to utilize the most recent cost data to determine prices for their products. In addition to determining prices for their products, I have created a system for producing invoices for customers based on the newly determined prices.

Implementation Documentation

For convenience, I have created an additional tab with a number of buttons that are used to perform various tasks in collecting data and creating invoices. Please see the Allpine Lumber tab for the buttons that perform each task.

Gathering the Data

The first thing required to calculate current prices and create invoices from those prices is to gather the most recent cost data. As I soon discovered, the company was not gathering cost data specific to each product that they sold. Instead, they had data for all of their various expenses throughout the year lumped into an expense report. In order to determine prices, I first needed to allocate their total expenses to each of the different products that they produce. Therefore, I decided to collect their sales data for the year in pursuance of using sales volume for each product to assign costs based on how much was sold throughout the year. The sales and expense data could be downloaded from their system and then saved in a desired location. I wrote code that would allow the user to open up a dialog box and select the most recent sales and expense data (See Exhibits 1 and 2).

Exhibit 1

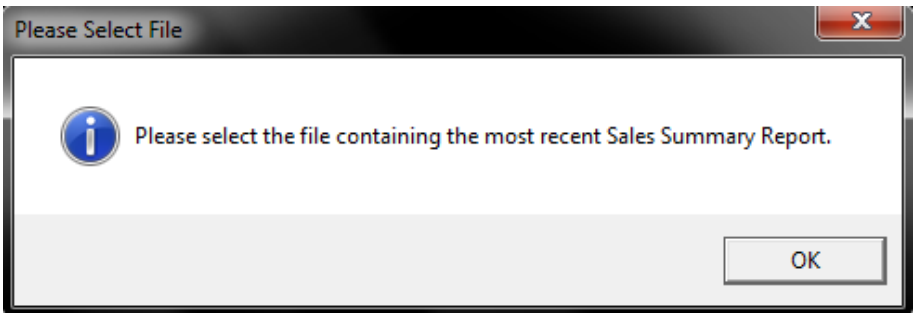
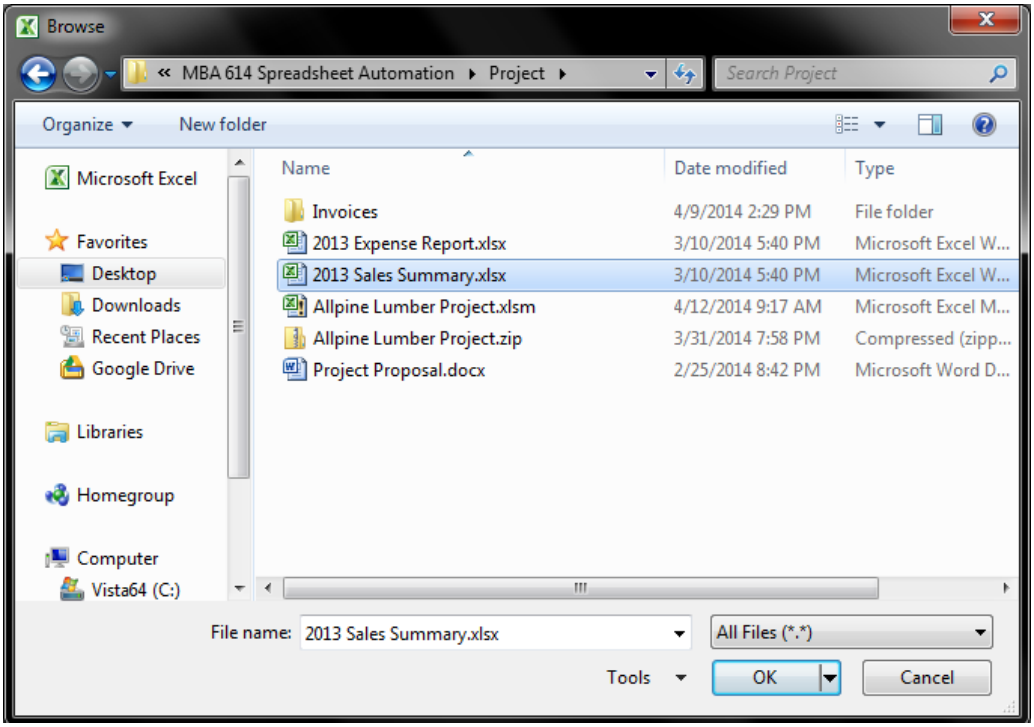


Exhibit 2



I decided that the best way to utilize the sales and expense data was to copy it into the project workbook both to make calculations and have for reference later if needed. Once the sales and expense data has been copied into the project workbook, it is now possible to analyze the data.

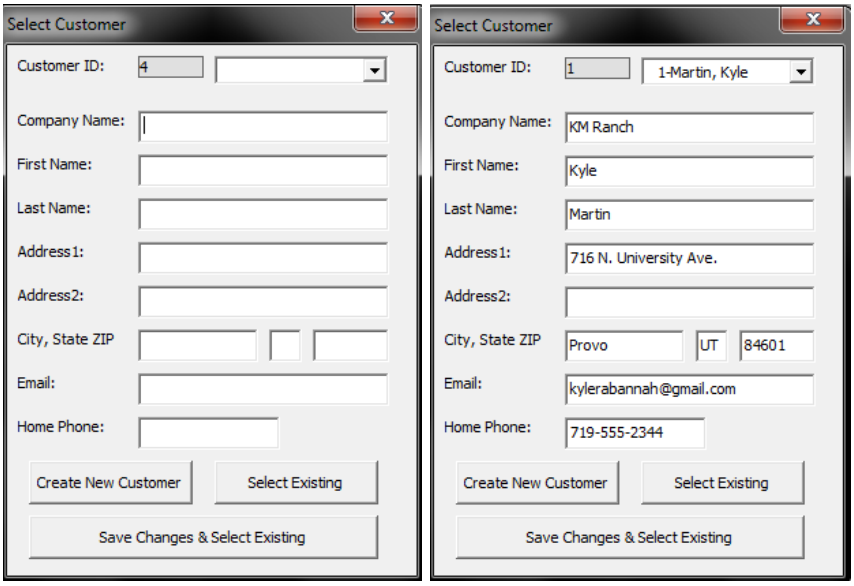
Calculating Cost

In order to calculate the cost for each product, I grouped products according to the type of wood used to produce each. I looped through the entire list of products and used arrays to label each by size and type of wood. I also captured the quantity sold and total sales for each product. Total sales for each type of wood were used to calculate a percentage of total sales that could be used to determine a percentage of cost to apply to that type of wood. Once a percentage of cost could be applied to a type of wood, I could then determine a unit price for that type of wood. I used the size of wood and quantity sold to determine the total number of board feet. I could then use the previously determine cost and divide it by the total board feet to get a unit cost per board foot.

Create Invoice

Once a unit price has been determined for each type of wood, retail prices can be calculated. These retail prices will be used to create invoices for customers. In the process of creating an invoice, I discovered that it would be important to also create a customer table. Exhibit 3 shows an example of the form I created that will allow the user to select existing customers, create new customers, or even edit existing customers. The data from the form would then be added to the invoice for the customer.

Exhibit 3



After selecting a customer, the user would need to select products to include in the invoice. Exhibit 4 is an example of the form used to add items to the customer invoice. The user can enter the quantity and size of each type of lumber needed and apply necessary discounts based on different situations. Once all items or products have been added, the user can then calculate the total price on the invoice including tax (See Exhibit 5). I thought the ability to save invoices for future reference would be valuable and thus created a button that would allow the user to save the invoice. This also adds the invoice to an invoice log for quick reference.

Exhibit 4

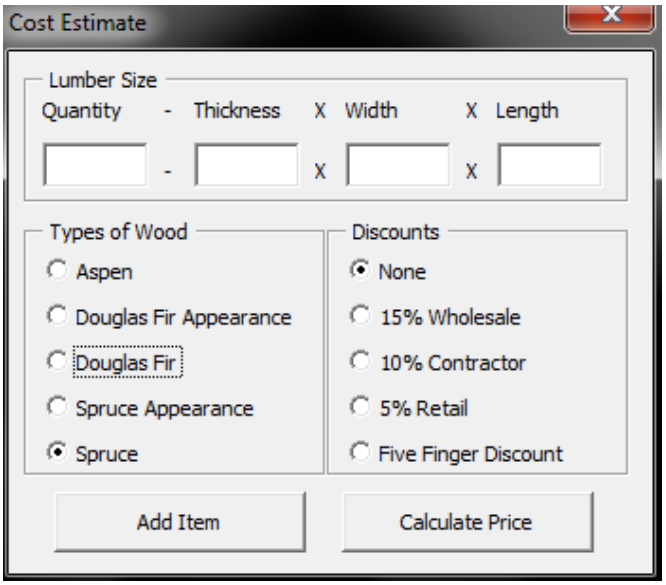
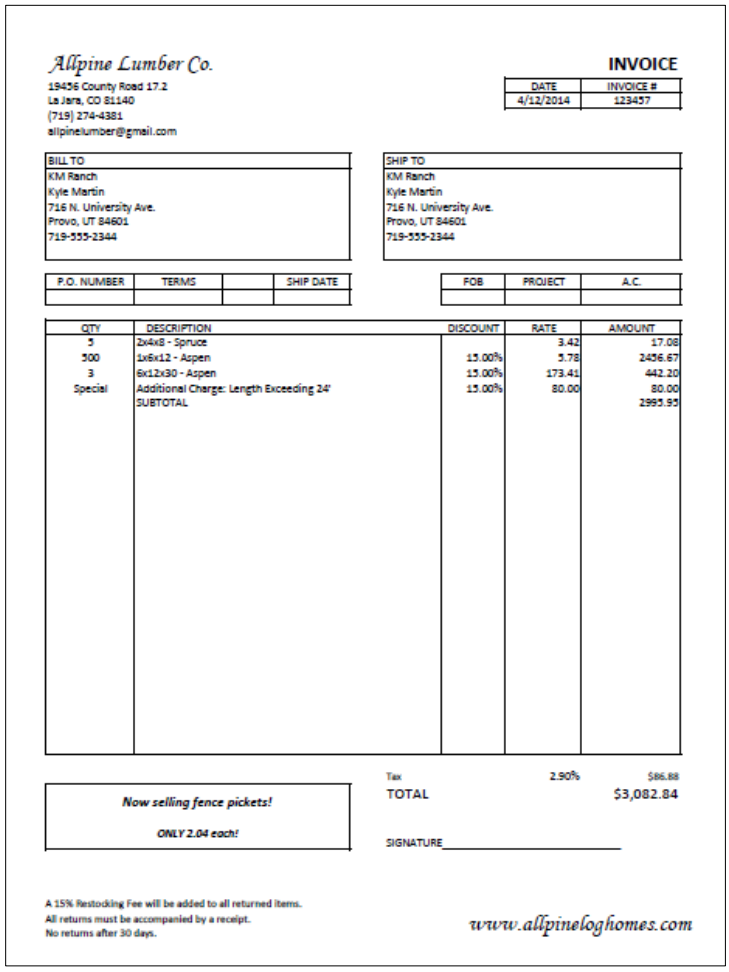


Exhibit 5



Allpine Lumber Co.
19436 County Road 17.2
La Jara, CO 81140
(719) 274-4381
allpinelumber@gmail.com

INVOICE

DATE	INVOICE #
4/12/2014	123457

BILL TO	SHIP TO
KM Ranch Kyle Martin 716 N. University Ave. Provo, UT 84601 719-555-2344	KM Ranch Kyle Martin 716 N. University Ave. Provo, UT 84601 719-555-2344

P.O. NUMBER	TERMS		SHIP DATE	FOB	PROJECT	A.C.

QTY	DESCRIPTION	DISCOUNT	RATE	AMOUNT
5	2x4x8 - Spruce		3.42	17.08
500	1x6x12 - Aspen	15.00%	5.78	2456.67
3	6x12x30 - Aspen	15.00%	173.41	442.20
Special	Additional Charge: Length Exceeding 24'	15.00%	80.00	80.00
	SUBTOTAL			2995.95

Now selling fence pickets!

ONLY 2.04 each!

Tax 2.90% $86.88

TOTAL $3,082.84

SIGNATURE_____

A 15% Restocking Fee will be added to all returned items.
All returns must be accompanied by a receipt.
No returns after 30 days.

www.allpineloghomes.com

Discussion of Learning and Conceptual Difficulties Encountered

I gained valuable experience with various aspects of VBA while working on this project. I learned the power of arrays and the ability to have a large collection of variables that I could loop through to find specific data. I also learned how to use a dialog box to allow a user to select files from any desired location. It has also been very valuable to become familiar with creating user forms. I have discovered that I can use forms to capture a lot of user input in a manner that will be consistent for all users. Probably one of the best things that I learned how to do is to modify the ribbon. This was exciting for me because it allows me to place buttons on the ribbon for easy access instead of locating them within the workbook on a specific sheet.

One of the greatest difficulties that I encountered in the project was labeling each of the different products the company produces. Product descriptions were not consistent and required extra work to label each correctly so that I could determine accurate prices.

The second greatest difficulty that I encountered was essentially trying to make each step in the process robust and to work out any possible errors that could occur. It seemed that each step in the process had numerous potential errors and I did my best to write my code in such a way that they would be prevented from occurring. However, I think only time and use will allow me to find all of the bugs and adjust my code as necessary.

Assistance

I did not receive substantial assistance working with this project.