Final Project – Data Entry/Invoice Manager

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Executive Summary:

My father-in-law is a geophysicist who owns his own consulting business. He has been managing his own finances from day one in a spreadsheet by entering in hourly charges and other reimbursable expenses. At the beginning of each month he would copy and paste the items for each client into a separate worksheet and attach the sheet to an email as the invoice. This method was not very professional looking and led to nonpayment for several invoices.

He has since been convinced to turn the handling of invoices over to my wife. The VBA application I built is a two part system will help each of them with the new process. For my father-in-law, it is an easier way to enter in all of the different charges and expenses that he accrues daily that need to be recorded for invoicing and also for tax purposes. For my wife, it is a convenient way to generate invoices by company and month, track which line item went out on which invoice and whether that line item has been paid off. When an invoice is created it can be sent from Excel to the email address listed for the client, or just saved for later use. It also allows her to manage clients in the system.

The Workbook:

The Excel workbook for this application is setup with seven worksheets. Three of the worksheets are where the data is stored that will later be used for invoices and for tracking personal and business expenses that will not be invoiced but need to be tracked for tax purposes. The next sheet stores the data that populates the combo boxes for client names, project names, and types of expenses. This sheet is hidden since it will not be necessary to access it often and clients can be added and removed from the list on this sheet through a userform. The last two worksheets are also hidden and contain more contact information for each client that is used to address and email the invoices and a sheet to track invoice numbers.

Data Entry:

My father-in-law, the business owner, will use the data entry userform of the application. The main purpose of using a form to enter the data into the sheet is to provide some standardization for the data (ex: Client name is entered exactly the same each time). It also allows him to enter data for invoices, business, and personal expenses in one place.

When the form is opened, the user can select any of the three tabs to begin working. Once the data is entered in for the fields on a particular tab the "Submit & Clear" button will insert a new row in the worksheet and reset the form for another entry. The "Submit & Close" button on each tab submits the data and closes the form, and the cancel button exits without inserting anything. On the "Personal Expense" tab, the "House Maintenance" combo box is disabled by default so that it does not throw an error if the cost is of a different type, but becomes enabled if the corresponding value is selected in the combo box.

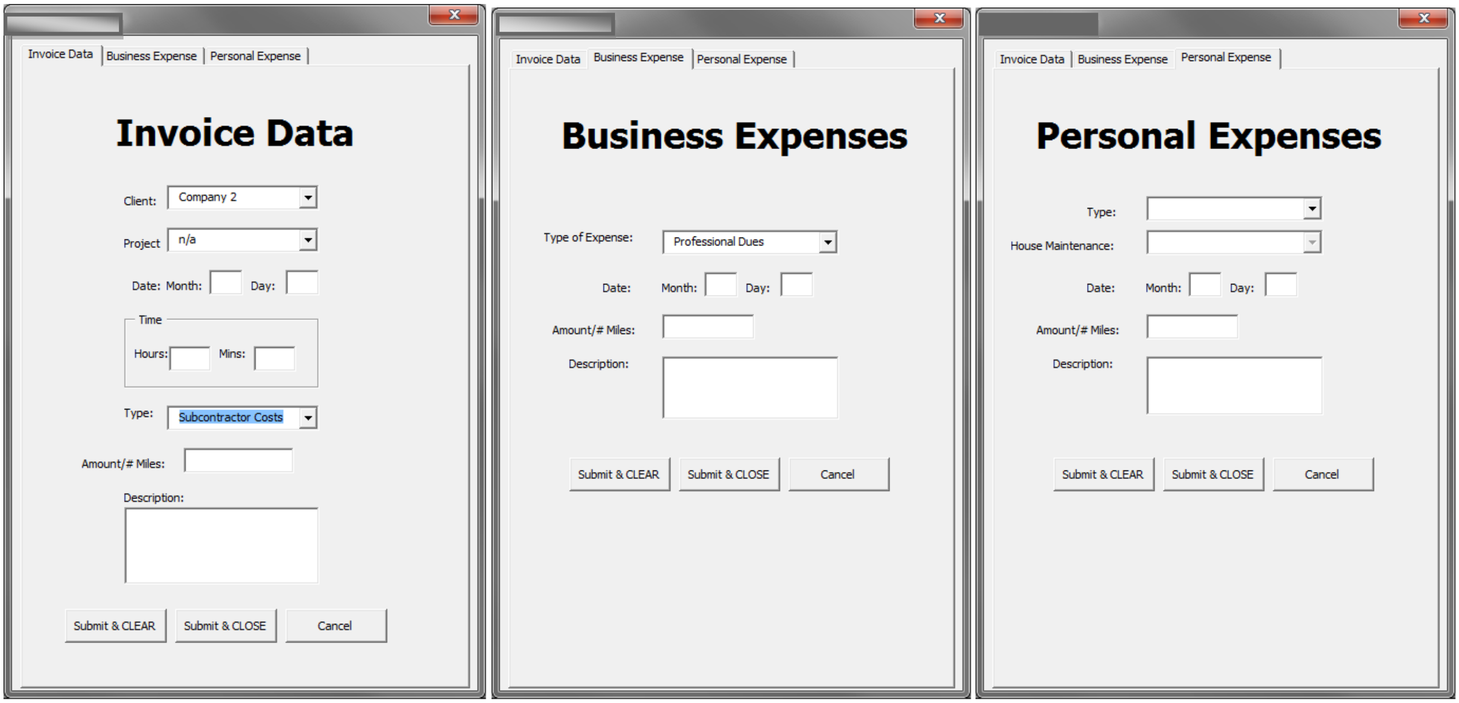
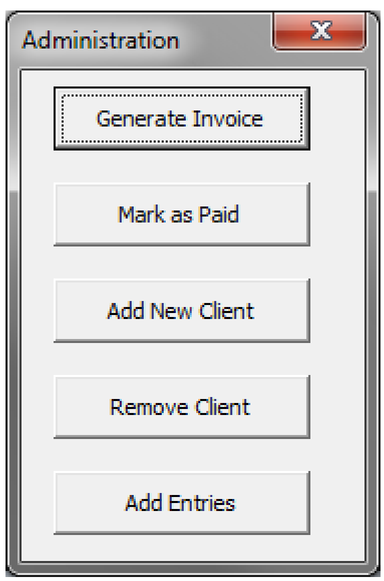


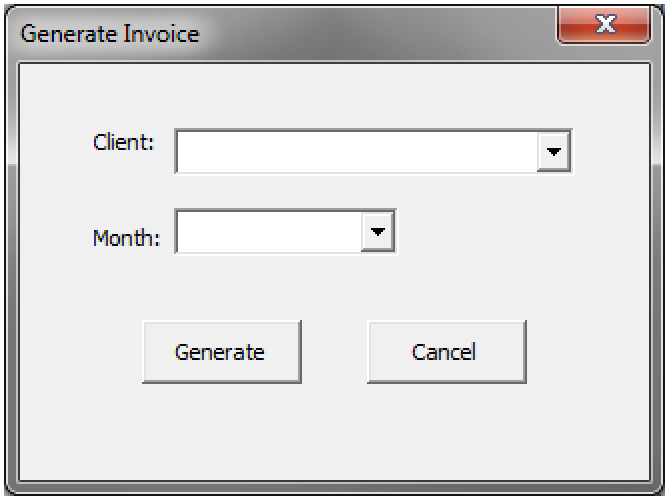
Figure 1 Data Entry Forms

Administration:

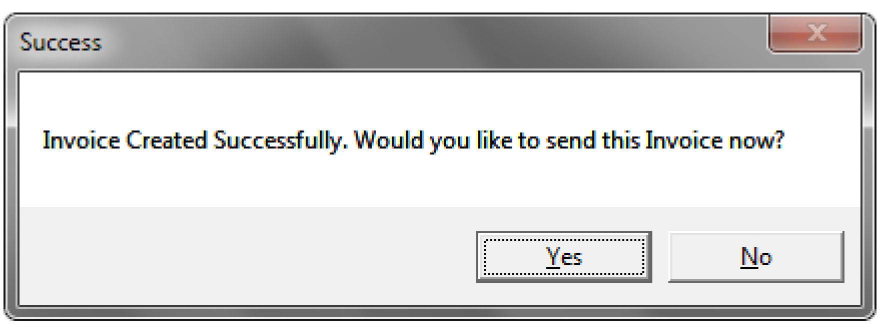
The other part of the application is the administration portion. Through this process the user can generate invoices for a client and month combination, add or remove a client, and mark invoices as paid. All of these tasks can be initiated by the admin screen seen here:

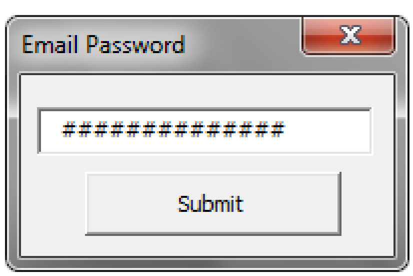


This form is set to be non-modal so that the user can work on the sheet as needed and then run any tasks that they desire and then come back to the form. To generate an invoice a user is shown the following form to initiate the process.



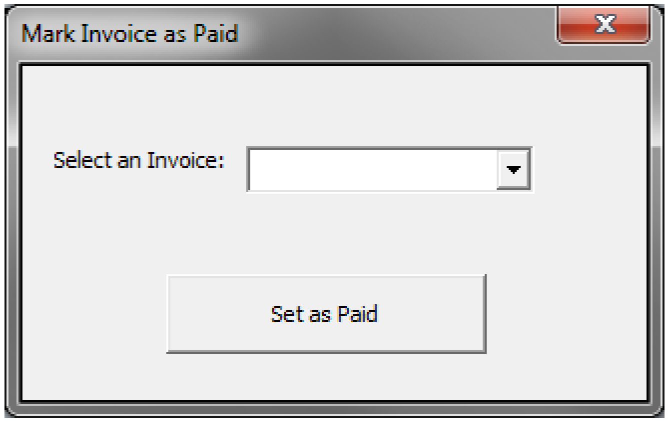
The client combo box is generated from the current list of clients. When the “Generate” button is clicked the worksheet containing the data is searched for all of the entries that match the month and client and entries that match the client, are from previous months, and have not been paid. The entries that match are then split into two sections by looking at the charge type column: Reimbursable Charges and Hourly Charges. The different charges are then entered into the invoice in the correct section. The client information is also looked up in the client information worksheet to retrieve the contact name and email address and these are also entered into the invoice along with the month of the invoice and invoice number. Back on the data worksheet, the invoice number is added to each entry that was included on this invoice. When the invoice is finished it is saved to the directory where the workbook is saved as a PDF, and a confirmation and prompt is given about whether the invoice should be emailed. If the user desires to email the invoice at this time, the password for the business email account is entered and the invoice is sent. If the user elects not to send the invoice the procedure exits and the user is taken back to the “Administration” window.





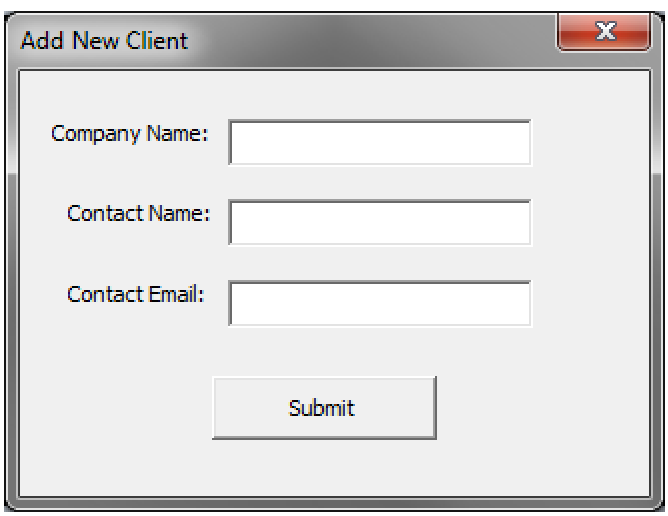
Mark as Paid:

When a check is received from a client the user can mark as paid the line items that were included on that particular invoice so that they are not included on future invoices. The user is presented with a list of invoices when one is selected, entries that correspond to that number are marked as paid in the worksheet containing the data.



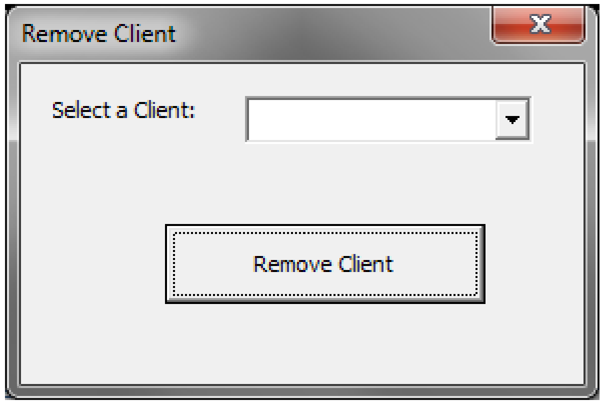
Adding a Client:

To add a new client to the system, all the user needs is the company name, contact that the invoice will be sent to and that contact's email address. The user selects the appropriate button from the administration screen and is presented with the add contact form. When submit is clicked the company name is entered into the client list and the list is resorted to maintain alphabetical order. All three pieces of information are added to the end of the list on the worksheet will the full contact information of the contacts.



Removing a Client:

Removing a client from the system is as easy as selecting a client in a combo box generated from the list of current clients and clicking the button. The client name is removed from the combo box data worksheet and the full information is removed from the contact information sheet.



Learning:

In the end, my project encompassed many of the topics and examples that we covered in class. I used two-dimensional arrays, loops, forms, email, and finding data in a worksheet. I was able to add many of the features by recording macros like saving as a PDF, inserting rows, and sorting columns. Since there isn't enough data to warrant it, it wasn't an issue for this project, but I began to explore the need for a two page invoice. I played around with a separate sub procedure and worksheet that already had a second invoice template and was able to move from the first page to the second page, though I haven't had time yet to get the row numbers exactly right.

Difficulties:

I started out by creating the data entry portion of the application a little over a month ago. Setting up the combo boxes and other elements went smoothly enough and the form was working as it should except for one part. I was having trouble finding a good way to implement date entry in the form. The date is important since it is business financial data so I knew I had to come up with something. My first attempt was creating another userform that just housed a calendar control that would open when the cursor entered the date field on the original form. When a date was selected on the calendar it would enter that date in the form and move on. This worked fine until I added the next tab and realized that as designed, I would have to create a new form with calendar for each tab in the data entry userform. To further complicate matters, I realized that the calendar control is not included with many installations of Office including on this forms intended computer. In the end, I came up with the temporary solution of entering month and date separately and combining them in the date column which is formatted as a date. My father-in-law has already requested that some sort of calendar be included so that he can look up past days, so I still have more work to do on this part.

Another issue I had that probably doesn't happen to many people was as I first began testing the "save" feature of the application I was not able to publish the invoice as a PDF. It turned out that you cannot publish files as PDFs if there are no printer drivers installed on the machine. I was working with on a fresh installation of Windows XP in a virtual machine and got it working with the Microsoft XPS Document Writer driver. (A Microsoft KB article said you could install any printer driver even if you didn't own it and it would work, but this did not work for me.)