

FINAL PROJECT WRITE UP

**Executive Summary**

The project centers on the needs of SW Asset Management, a small hedge fund based in Newport Beach, CA. The fund actively trades bonds, equities, options, currency, and credit default swaps. Currently the fund consists of the 4 founding partners (i.e. no junior guys to crunch numbers). Two funds are managed, SWA0 and FFXIX. Trades can be allocated to either or both funds.

A routine task for the fund is to fill out a trade blotter each time a trade is done, along with a trade ticket. Currently this is done manually in excel. In addition, exposure and profit and loss attribution analytics must be run on the fund's holdings and performance, respectively. For example, it is important to know the geographic and industry exposure of the fund. Moreover, investors would like to know, of their returns, how much was attributable to interest on the bonds vs. capital appreciation, as well as what percent of the returns were realized gains vs. mark to market gains.

The project does not go so far as to run analytics, but rather sets up a robust user interface to enter trades, to record those trades to the trade blotter, and to fill in the trade ticket. Because good analytics depends on clean data up front, my goal for the project was to create a system that is easy to use, pulls the necessary data to run analytics, and saves the firm time by not having to manually enter trade details. The analytics will come in version 2 when I am actually getting paid. The project included building user forms, populating list boxes, displaying information based on certain selections, writing information to excel, creating a custom button in the ribbon, and other basic calculations.

## Implementation

### *Building the Userform*

Page 207 in the book states “working with user forms is arguably the most fun part of VBA application development.” So, that is where I started. I envisioned a form that would pop up in order to enter all trade details. Rather than have to manually enter all trade details twice (once on the blotter and once on the ticket) I thought it would be slick to enter trade details in a userform and automatically write the data to the blotter and trade ticket. To the extent the data is controlled going in, the outputs in the form of analytics will be much cleaner. Entering data via a userform helps control data inflow. After compiling a list of input fields I built the form as shown below.

The screenshot shows a VBA Userform titled "SW ASSET MANAGEMENT" with a grid background. The form contains the following fields and controls:

- TRADE DATE:** 4/13/2011 (dropdown)
- SETTLE DATE:** 4/13/2011 (dropdown)
- BUY/SELL:** Radio buttons for BUY and SELL.
- FUND:** Radio buttons for SWA0, FFXIX, and BOTH.
- SECURITY TYPE:** Dropdown menu.
- SHARES/ PAR AMOUNT:** Text input field.
- PRICE:** Text input field.
- ACCRUED INTEREST:** Text input field.
- FEES:** Text input field.
- COMMISSION:** Text input field.
- TOTAL PROCEEDS:** Text input field.
- Calc Total:** Button.
- ENTER:** Button.
- COUNTER PARTY:** Dropdown menu.
- CONTACT:** Dropdown menu.
- CONTACT PHONE #:** Text input field.
- ISIN:** Dropdown menu.
- CUSIP:** Text input field.
- TICKER:** Text input field.
- SECURITY DESC:** Text input field.
- CPN:** Text input field.
- MATURITY:** Text input field.
- START ACC DT:** Text input field.
- NXT CPN DT:** Text input field.
- LAST CPN DT:** Text input field.
- COUNTRY OF RISK:** Text input field.
- GEO REGION:** Text input field.
- SECTOR:** Text input field.
- CRNCY:** Text input field.
- RTG SP:** Text input field.
- RTG MDY:** Text input field.
- RTG FITCH:** Text input field.
- RTG COMPOSITE:** Text input field.
- CONVENTION:** Text input field.
- ISSUE TYPE:** Text input field.
- Row:** Text input field.

The main input drivers of the form are:

- Trade date
- Settle date
- Buy or Sell
- Name of the fund the trade was done for
- Security type (bond, equity, option, etc.)
- Price
- Counterparty
- Contact
- ISIN (unique security identifier)

With these basic inputs it is possible to get the rest of the data needed to complete the task.

### ***The Execution***

One of the most arduous tasks about the manual process is to collect the security data from Bloomberg. Trades are done based on the security's ISIN number, a unique identifier. Using the ISIN, a number of other fields are collected, including the CUSIP (another identifier), ticker, security description, coupon, maturity, start accrue date, next coupon date, last coupon date, country of risk, geographic region, sector, currency, S&P rating, Moody's rating, Fitch's rating, convention, and issue type. To make this process tight I dedicated a worksheet to pull data from Bloomberg. From this worksheet I load the ISIN numbers into a list box. The user simply selects the ISIN number from the list box and all other data points automatically populate. Below is a visual representation of the process.

'Securities' tab pulls data from Bloomberg via the API functionality. In order for this to work the workbook must be opened on a 'Bloomberg machine'. For this project I copied paste special values because I could not always be on one of the Bloomberg terminals. The final resting place of this workbook will be on a Bloomberg machine. Version 2 of the project will have VBA code pulling directly from Bloomberg.

	A	B	C	D	E	F	G	H	I	J
1	ISIN	CUSIP	SECURITY TYPE	TICKER	SECURITY_DES	Issue Type	CPN	MATURITY	START_ACC_DT	NXT_CPN_DT
3	ARARGE03E147	EF0162372	CORP	ARGENT	ARGENT 0 12/15/35	144(a)	0	15-Dec-35	1-Nov-05	15-Dec
4	ARARGE03F144	EF1061060	CORP	ARGBON	ARGBON 7 10/03/15	144(a)	7	3-Oct-15 (blank)		30-Apr
5	US03523TAY47	03523TAY4	CORP	ABIBB	ABIBB 9 3/4 11/17/15	144(a)	9.75	17-Nov-15	17-Nov-10	17-May
6	US040114GL81	040114GL8	CORP	ARGENT	ARGENT 8.28 12/31/33	144(a)	8.28	31-Dec-33 (blank)		30-Jun
7	US05968LAB80	05968LAB8	CORP	BANCOL	BANCOL 6 1/8 07/26/20	144(a)	6.125	26-Jul-20 (blank)		(blank)
8	US716558AC52	716558AC5	CORP	PDVSA	PDVSA 12 3/4 02/17/22	144(a)	(blank)	17-Feb-22 (blank)		(blank)
9	US89376NAC20	89376NAC2	CORP	TMYE	TMYE 12 12/15/10	144(a)	0	15-Dec-10 (blank)		(blank)
10	USD33488AA17	E12024103	CORP	MAGNES	MAGNES 7 7/8 03/30/20	144(a)	7.875	30-Mar-20 (blank)		(blank)
11	USG0111KAA28	E14617219	CORP	AES	AES 9 1/2 11/12/20	144(a)	9.5	12-Nov-20	12-Nov-10	12-May
12	USG0732RAF58	E13508005	CORP	BRADES	BRADES 5.9 01/16/21	144(a)	5.9	16-Jan-21 (blank)		(blank)
13	USG11010AA62	E13339625	CORP	FRIBOI	FRIBOI 8 1/4 01/29/18	144(a)	8.25	29-Jan-18 (blank)		(blank)
14	USG27631AB90	EG2199362	CORP	DLTLD	DLTLD 9 1/8 01/15/15	144(a)	9.125	15-Jan-15	27-Feb-07	15-Jan
15	USG27649AC99	E10604351	CORP	DLTLD	DLTLD 8 1/4 09/01/17	144(a)	8.25	1-Sep-17	8-Dec-09	1-Mar
16	USG33894AA75	CP5029592	CORP	FERTI	FERTI 8.29 04/01/20	144(a)	8.29	1-Apr-20	21-Apr-98	1-Apr
17	USG3400PAB34	E12404370	CORP	FIBRIA	FIBRIA 7 1/2 05/04/20	144(a)	7.5	4-May-20 (blank)		(blank)
18	USG3980PAD71	E13239148	CORP	GOL	GOL 9 1/4 07/20/20	144(a)	9.25	20-Jul-20 (blank)		(blank)
19	USG5814RAB45	E12404131	CORP	MARFRI	MARFRI 9 1/2 05/04/20	144(a)	9.5	4-May-20 (blank)		(blank)
20	USG6710EAF51	E14668774	CORP	ODEBRE	ODEBRE 6.35 06/30/21	144(a)	6.35	30-Jun-21	18-Nov-10	30-Jun
21	USG0710EAF72	E13993165	CORP	ODBR	ODBR 7 1/2 09/29/49	144(a)	7.5	29-Sep-49	14-Sep-10	14-Dec
22	USG73982AA17	E11614078	CORP	RSDPWV	RSDPWV 11 7/8 03/15/17	144(a)	11.875	15-Mar-17 (blank)		10-Mar
23	USG8600UAA19	E14103087	CORP	SUZANO	SUZANO 5 7/8 01/23/21	144(a)	5.875	23-Jan-21	23-Sep-10	23-Jan
24	USG87361AA26	E14101842	CORP	MICC	MICC 8 10/01/17	144(a)	8	1-Oct-17	23-Sep-10	1-Apr
25	USG90748AA57	EG0492546	CORP	TRISTN	TRISTN 10 1/2 01/01/12	144(a)	10	1-Jan-12	20-Dec-06	1-Jul
26	USG9372JAA00	E15490061	CORP	GVOBR	GVOBR 10 1/2 01/28/18	144(a)	10.5	28-Jan-18	28-Jan-11	28-Jul
27	USL2179AA88	E13251630	CORP	CSNABZ	CSNABZ 9 1/2 07/21/20	144(a)	6.5	21-Jul-20 (blank)		(blank)
28	USN2809PAA59	E12320303	CORP	DTEKUA	DTEKUA 9 1/4 04/28/15	144(a)	9.5	28-Apr-15 (blank)		28-Oct
29	USP0902MAD58	E15158841	CORP	AEROP	AEROPUERTOS ARGENT 10 3/4 12/20	144(a)	10.75	1-Sep-20 (blank)		(blank)
30	USP04559AB98	E14605123	CORP	ARCOR	ARCOR 7 1/4 11/09/17	144(a)	7.25	9-Nov-17	9-Nov-10	9-May
31	USP07785AE11	E13405186	CORP	BCOBMG	BCOBMG 8 7/8 08/05/20	144(a)	8.875	5-Aug-20 (blank)		(blank)
32	USP09133BF89	E14079758	CORP	CRUZ	CRUZ 8 7/8 09/22/20	144(a)	8.875	22-Sep-20	22-Sep-10	22-Mar
33	USP09646AC75	E14025660	CORP	BCP	BCP 5 3/8 09/16/20	144(a)	5.375	16-Sep-20 (blank)		(blank)
34	USP1400AAA27	E13209596	CORP	BMEBMZ	BMEBMZ 9 5/8 07/16/20	144(a)	9.625	16-Jul-20 (blank)		(blank)
35	USP14996AG02	E12286843	CORP	BCOPAN	BCOPAN 8 1/2 04/23/20	144(a)	8.5	23-Apr-20 (blank)		(blank)
36	USP151658G46	E13299555	CORP	BANVOR	BANVOR 7 3/8 01/21/20	144(a)	7.375	21-Jan-20 (blank)		(blank)

The ISIN number from column A is loaded into the list box labeled ISIN on the form.

ISIN	<input type="text"/>	
CUSIP	ARARGE03E147 ARARGE03F144 US03523TAY47	SECTOR
TICKER	US040114GL81 US05968LAB80 US716558AC52	CRNCY
SECURITY DESC	US89376NAC20 USD33488AA17 USG0111KAA28	RTG SP
CPN	USG0732RAF58 USG11010AA62 USG27631AB90	RTG MDY
MATURITY	USG27649AC99 USG33894AA75 USG3400PAB34	RTG FITCH
START ACC DT	USG3980PAD71 USG5814RAB45 USG6710EAF51	RTG COMPOSITE
NXT CPN DT	USG6710EAF72	CONVENTION
LAST CPN DT	<input type="text"/>	ISSUE TYPE
COUNTRY OF RISK	<input type="text"/>	

```

Sub loadISIN()
Dim x As Integer
x = 2
Do Until Sheets("securities").Cells(x, 1).Value = ""
    lstISIN.AddItem Sheets("securities").Cells(x, 1).Value
    x = x + 1
Loop
End Sub

```

Once the user selects the appropriate ISIN the rest of the boxes fill in automatically.

ISIN	USP68166AA81	SECTOR	TRANSPORTATION
CUSIP	EG8763997	CRNCY	USD
TICKER	SENDA	RTG SP	B-
SECURITY DESC	SENDA 10 1/2 10/03/15	RTG MDY	
CPN	10.5	RTG FITCH	B-
MATURITY	10/3/2015	RTG COMPOSITE	B-
START ACC DT	10/3/2007	CONVENTION	ISMA-30/360
NXT CPN DT	4/3/2011	ISSUE TYPE	144(a)
LAST CPN DT	10/3/2010		
COUNTRY OF RISK	MEXICO		
GEO REGION	LATAM		

Row 47

```
Private Sub lstISIN_Change()
Dim isin As String
Dim isinrow As Integer
Dim x As Integer

isin = lstISIN.Value
x = 1

Sheets("Securities").Select
Do Until Sheets("Securities").Cells(x + 1, 1) = ""
    If InStr(1, Cells(x, 1), (isin)) > 0 Then
        Sheets("Securities").Cells(x, 1).EntireRow.Select
        Exit Do
    End If

    x = x + 1
Loop

lblRow = ActiveCell.Row
lblCusip = Cells(lblRow, "b")
lblTicker = Cells(lblRow, "d")
lblSecdes = Cells(lblRow, "e")
lblCpn = Cells(lblRow, "g")

If Cells(lblRow, "h") = "(blank)" Then
    lblMaturity = ""
Else
    lblMaturity = Cells(lblRow, "h")
End If

If Cells(lblRow, "i") = "(blank)" Then
    lblStartaccdt = ""
Else
    lblStartaccdt = Cells(lblRow, "i")
End If
```

Often times the pull from Bloomberg is blank, causing the field to display “(blank)”. To mitigate this I wrote an if statement causing the value to be “” in the case a field does not pull through.

Next on the list was to create inputs for trade date and settle date. This was simply done via a date and time picker. I found this convenient function in the book.

```
Private Sub DTPicker1_CallbackKeyDown(ByVal KeyCode As Integer, ByVal Shift As Integer, ByVal CallbackField As String, CallbackDate As Date)
End Sub

Private Sub DTPicker2_CallbackKeyDown(ByVal KeyCode As Integer, ByVal Shift As Integer, ByVal CallbackField As String, CallbackDate As Date)
End Sub
```

<b>TRADE DATE</b>	<b>SETTLE DATE</b>
4/13/2011	4/13/2011

The trade could be either a buy or sell so it made sense to use option buttons for this choice. The trade could also be for the SWA0 fund, the FFXIX fund, or both.

<input type="radio"/> BUY <input type="radio"/> SELL	<b>FUND</b> <input type="radio"/> SWA0 <input type="radio"/> FFXIX <input type="radio"/> BOTH
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One of the problems with the manual entry is data integrity. I saw this problem again and again at my job before returning to school as well as at SW. This is particularly pervasive in entering the counterparty and contact information. Take JP Morgan for example; I saw it entered six different ways. JPM, J.P. Morgan, JP Morgan, JPMorgan, J.P.Morgan and JP M. How frustrating when you try to sort data based on this field! The problem is just as bad when entering contact names. To solve this problem I created an 'input' tab that lists all counterparties and contact names.

COUNTER PARTY

CONTACT

CONTACT PHONE #

The counterparty and contact list box pull from these lists so the user stays consistent in entering counterparty and contact data.

Security Types	Counterparty	Contact Name	Contact Phone Number
OPTIONS	AMERICAVEST	AARON FERNANDES	123.456.7890
FIXED INCOME	BANCO DE SANTANDAR	ALEX PITALEFF	123.456.7890
CDS	BARCLAYS CAPITAL	ALEXANDER WALBRIDGE	123.456.7890
EQUITY	BETA CAPITAL	ANISHA AMBARDAR	
FX	BOFA	BENJAMIN HARRIS	
MTGE	BTG PACTUAL	CAMERON MARCHANT	
	BTIG PACTUAL	CHRIS SCHARVER/FRED MENIS	
	CREDIT AGRICOLE	DALINDA GUERRERO	
	CREDIT SUISSE	DAN JURKOWITZ	
	DB	DAVID DISI	
	DB-INTL	DAVID FRANCO	
	GOLDMAN SACHS	DAVID MATTY	
	HAPOALIM	DEAN TYLER	
	ING	GERARD GOGER	
	JEFFERIES	GREG WAGNER	
	JP MORGAN	HUGO SOUZA	
	MERRILL LYNCH	IAN ALBIN	
	MILLER TABAK	JEREMY GODFREY	
	MORGAN STANLEY	JIM BONFILS	
	NOMURA	JOHN BIRDSALL	

```

Sub loadcp ()
Dim x As Integer
x = 2
Do Until Sheets("Inputs").Cells(x, "c").Value = ""
lstcp.AddItem Sheets("Inputs").Cells(x, "c").Value
x = x + 1
Loop
End Sub

Sub loadcontact ()
Dim x As Integer
x = 2
Do Until Sheets("Inputs").Cells(x, "d").Value = ""
lstcontact.AddItem Sheets("Inputs").Cells(x, "d").Value
x = x + 1
Loop
End Sub

```

The final step was to create text boxes to enter the actual trade amount, price, fees, commissions, and accrued interest. Total proceeds can be calculated using the above mentioned values.

SECURITY TYPE	<input type="text"/>
SHARES/ PAR AMOUNT	<input type="text"/>
PRICE	<input type="text"/>
ACCRUED INTEREST	<input type="text"/>
FEEES	<input type="text"/>
COMMISION	<input type="text"/>
TOTAL PROCEEDS	<input type="text"/> <input type="button" value="Calc Total"/>

```

Private Sub CommandButton1_Click()
|
If lblparamt = "" Or lblprice = "" Or lblaccruedint = "" Or lblfees = "" Or lblcommision = "" Then
MsgBox ("Please Enter All Values")
Exit Sub
End If

lbltotal.Value = lblparamt.Value * lblprice.Value / 100 + lblaccruedint.Value + lblfees.Value + lblcommision.Value
formatTextBox lbltotal, "$#,###", 2
End Sub

```

Once all values have been entered I wanted the form to do two things: 1) write the data to a trade blotter that keeps a record of each trade and 2) enter the data into a trade ticket that could be printed out and signed. There are two trade blotters, one for SW and one for FFXIX. Depending on which 'Fund' button is selected determines where the trade details are written. Let's follow the process using the below snap shot as an example.

The screenshot shows a trade ticket form with the following details:

- TRADE DATE:** 4/13/2011
- SETTLE DATE:** 4/15/2011
- BUY/SELL:** BUY
- FUND:** SWA0 (selected)
- SECURITY TYPE:** FIXED INCOME
- ISIN:** USG0111KAA28
- CUSIP:** EI4617219
- SECTOR:** UTILITIES
- TICKER:** AES
- CRNCY:** USD
- SECURITY DESC:** AES 9 1/2 11/12/20
- RTG SP:** B-
- CPN:** 9.5
- RTG MDY:**
- MATURITY:** 11/12/2020
- RTG FITCH:**
- START ACC DT:** 11/12/2010
- RTG COMPOSITE:**
- NXT CPN DT:** 5/12/2011
- CONVENTION:** ISMA-30/360
- LAST CPN DT:**
- ISSUE TYPE:** 144(a)
- COUNTRY OF RISK:** DO
- GEO REGION:** LATAM
- COUNTER PARTY:** JP MORGAN
- CONTACT:** ALEX PITALEFF
- CONTACT PHONE #:**
- SHARES/ PAR AMOUNT:** 100,000
- PRICE:** 95.125
- ACCRUED INTEREST:** \$2,500
- FEEES:** \$50
- COMMISION:** \$8
- TOTAL PROCEEDS:** \$97,683

Once all data is entered the user simply clicks the large 'ENTER' button to execute the code that writes the data to the blotter and trade ticket. The code directs the data to be written on the first blank line of the blotter.

### Trade Blotter

	A	B	C	D	E	F	G	H	I	J	K	L
1	PORTFOLIO	TRADE DATE	SETTLE DATE	INSTRUMENT	BUY/SELL	CUSIP	ISIN	SHORT DESCRIPTION	LONG DESCRIPTION	QUANTITY	UNIT PRICE	ACCRUED INTEREST
3	SWAO	4/13/2011	4/15/2011	FIXED INCOME	BUY	E14617219	USG0111KAA28	AES	AES 9 1/2 11/12/20	100,000	95.125	\$2,500

### Trade Ticket

	A	B	C	D	E	F	G	H	I	
1	<b>SW Asset Management, LLC</b>									
2	<b>TRADE INSTRUCTIONS</b>									
6	TO	SSB CUSTODY			DATE	13-Apr-11				
8		PURCHASE (BUY <input type="checkbox"/> )			SALE (SELL <input type="checkbox"/> )					
10	SW TRADE REF NUMBER : _____									
13	FUND NAME	SVGCO Master Fund Ltd.								
15	FUND NUMBER	SAW0								
17	Trade Date			Contractual Settlement Date						
18	13-Apr-2011			15-Apr-2011						
19	SECURITY DESCRIPTION									
23	AES		AES 9 1/2 11/12/20		144(a)					
25	ASSET ID / CUSIP	ISIN USG0111KAA28			CUSIP E14617219					
27	NUMBER OF SHARES / PAR	100,000								
29	Price	95.125			Trade Currency:	US				
31	Gross Amount	\$95,125			Settlement Currency:	US				
32	Commission	\$8			<b>or Physical Processing of</b>					
33	Fees	\$50			<b>Documents Delivery</b>					
34	Interest Amount	\$2,500			"AS-IS" Delivery					
35	NET AMOUNT	\$97,683			Attach Legal Paperwork					
37	SETTLEMENT INSTRUCTIONS									
39	Executing Broker				Clearing Broker					
40	JP MORGAN									
41	ALEX PITALEFF									
47	REFERENCE / COMMENTS / SPECIAL INSTRUCTIONS									
53	SW APPROVAL									
55	Name/Signature _____									
56	David C. Hinman									

### Code Sample

```

Private Sub cmdEnter_Click()
Dim x As String
Dim y As Integer
'x = Sheets("Trade Ticket")

If obswa0 = True Then
Sheets("Trade Blotter SW").Select
Cells(1, 1).Select
Selection.End(xlDown).Select
ActiveCell.Offset(1, 0).Range("A1").Select
y = ActiveCell.Row
Cells(y, "a").Value = "SWAO"
Cells(y, "b").Value = tradedt.Date
Cells(y, "c").Value = settledt.Date
Cells(y, "d").Value = 1stsectype

If obBuy = True Then
Cells(y, "e").Value = "BUY"
Else
Cells(y, "e").Value = "SELL"
End If

Cells(y, "f").Value = lblCusip
Cells(y, "g").Value = 1stISIN
Cells(y, "h").Value = lblTicker
Cells(y, "i").Value = lblSecdes
Cells(y, "j").Value = lblparamt
Cells(y, "k").Value = lblprice
Cells(y, "l").Value = lblaccruedint
Cells(y, "m").Value = ""
Cells(y, "n").Value = lblcommision
Cells(y, "o").Value = lblfees
Cells(y, "p").Value = lbltotal
Cells(y, "q").Value = 1stcpc
Cells(y, "r").Value = 1stcontact
Cells(y, "s").Value = lblphone
Cells.EntireColumn.AutoFit

```

Presto! A clean trade blotter and ticket are produced in a fast and efficient manner!

## ***Learning and conceptual difficulties***

It is important to know I had zero VBA skills before this class. Although the entire project takes about 5 seconds to execute, I learned a significant amount getting it to work.

One of the first things I learned was how fickle VBA is. I work on three different machines - the Bloomberg boxes at school, my laptop, and my desktop. Each time I would bring up the file on a different computer some of my code would not work. It could not find one thing or another in the library. Life was difficult as I had to redo things I had done again and again. Finally I decided to just work from one spot as much as possible.

Actually writing the code was difficult, but fun. Through a lot of trial and error I was able to piece things together. I got pretty good at isolating one variable to see what would happen when I tweaked it. This is how I wrote most of the code. I started with something I knew, added a little to it and saw what happened, then repeated the process.

The most difficult part of the project was to format text boxes as data was being input. I figured it would be a property of the box; I figured wrong. The code [you] came up with to format the text boxes was:

```
Sub formatTextBox(theTextBox As control, formatString As String, decimals As Integer)
Dim mask As String
Dim pos As Integer
Dim onechar As String
Dim pointPos As Integer

pointPos = InStr(1, theTextBox.Text, ".")
pos = Len(theTextBox.Text) - theTextBox.SelStart

If pointPos > 0 Then
    If Len(theTextBox.Text) - pointPos > decimals Then
        theTextBox.Text = Left(theTextBox.Text, Len(theTextBox.Text) - 1)
        pos = pos - 1
    End If
End If

onechar = "#"

mask = formatString

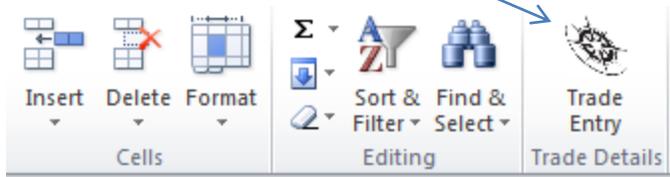
If InStr(1, theTextBox.Text, ".") Then
    mask = mask & "." & Replace(Space(decimals), " ", onechar)
End If

theTextBox.Text = Format(theTextBox.Text, mask)
theTextBox.SelStart = Len(theTextBox.Text) - pos

End Sub
```

---

Some other minor things I learned were how to number the text boxes so the user can simply tab from one box to the next. I also figured out how to insert a button on the ribbon with the SW logo.



All in all it was a great exercise to use basic VBA functionality to accomplish a routine task. The project included building user forms, populating list boxes, displaying information based on certain selections, writing information to excel, creating a custom button in the ribbon, and other basic calculations.

## Appendix

### Code in entirety

```
Sub formatTextBox(theTextBox As control, formatString As String, decimals As Integer)
```

```
Dim mask As String
```

```
Dim pos As Integer
```

```
Dim onechar As String
```

```
Dim pointPos As Integer
```

```
pointPos = InStr(1, theTextBox.Text, ".")
```

```
pos = Len(theTextBox.Text) - theTextBox.SelStart
```

```
If pointPos > 0 Then
```

```
    If Len(theTextBox.Text) - pointPos > decimals Then
```

```
        theTextBox.Text = Left(theTextBox.Text, Len(theTextBox.Text) - 1)
```

```
        pos = pos - 1
```

```
    End If
```

```
End If
```

```
onechar = "#"
```

```
mask = formatString
```

```
If InStr(1, theTextBox.Text, ".") Then
```

```
    mask = mask & "." & Replace(Space(decimals), " ", onechar)
```

```
End If
```

```
theTextBox.Text = Format(theTextBox.Text, mask)
```

```
theTextBox.SelStart = Len(theTextBox.Text) - pos
```

End Sub

```
Private Sub lblparamt_Change()  
    formatTextBox lblparamt, "#,###", 2  
End Sub
```

```
Private Sub lblprice_Change()  
formatTextBox lblprice, "#,###", 6  
End Sub
```

```
Private Sub lblfees_Change()  
formatTextBox lblfees, "$#,###", 2  
End Sub
```

```
Private Sub lblcommision_Change()  
formatTextBox lblcommision, "$#,###", 2  
End Sub
```

```
Private Sub lblaccruedint_Change()  
formatTextBox lblaccruedint, "$#,###", 2  
End Sub
```

```
Private Sub CommandButton1_Click()
```

```
If lblparamt = "" Or lblprice = "" Or lblaccruedint = "" Or lblfees = "" Or lblcommision = "" Then
```

```
MsgBox ("Please Enter All Values")
```

Exit Sub

End If

```
lbltotal.Value = lblparamt.Value * lblprice.Value / 100 + lblaccruedint.Value +  
lblfees.Value + lblcommision.Value  
formatTextBox lbltotal, "$#,###", 2  
End Sub
```

Private Sub UserForm\_Initialize()

loadSecuritytypes

loadISIN

loadcp

loadcontact

End Sub

Private Sub cmdEnter\_Click()

Dim x As String

Dim y As Integer

'x = Sheets("Trade Ticket")

If obswa0 = True Then

Sheets("Trade Blotter SW").Select

Cells(1, 1).Select

Selection.End(xlDown).Select

ActiveCell.Offset(1, 0).Range("A1").Select

y = ActiveCell.Row

```
Cells(y, "a").Value = "SWA0"  
Cells(y, "b").Value = tradedt.Date  
Cells(y, "c").Value = settledt.Date  
Cells(y, "d").Value = lstsectype
```

```
If obBuy = True Then  
Cells(y, "e").Value = "BUY"  
Else  
Cells(y, "e").Value = "SELL"  
End If
```

```
Cells(y, "f").Value = lblCusip  
Cells(y, "g").Value = lstISIN  
Cells(y, "h").Value = lblTicker  
Cells(y, "i").Value = lblSecdes  
Cells(y, "j").Value = lblparamt  
Cells(y, "k").Value = lblprice  
Cells(y, "l").Value = lblaccruedint  
Cells(y, "m").Value = ""  
Cells(y, "n").Value = lblcommision  
Cells(y, "o").Value = lblfees  
Cells(y, "p").Value = lbltotal  
Cells(y, "q").Value = lstcp  
Cells(y, "r").Value = lstcontact  
Cells(y, "s").Value = lblphone  
Cells.EntireColumn.AutoFit
```

```
Sheets("Trade Ticket").Cells(6, "g").Value = tradedt.Date  
Sheets("Trade Ticket").Range("c12").Value = "SWGCO Master Fund Ltd."  
Sheets("Trade Ticket").Range("c14").Value = "SAW0"  
Sheets("Trade Ticket").Range("a18").Value = tradedt.Date
```

```

Sheets("Trade Ticket").Range("e18").Value = settledt.Date
Sheets("Trade Ticket").Range("a20").Value = lblTicker.Value & " " &
lblSecdes.Value & " " & lblIssuetype.Value
Sheets("Trade Ticket").Range("d23").Value = "ISIN" & " " & lstISIN & " " & "CUSIP" &
" " & lblCusip
Sheets("Trade Ticket").Range("d25").Value = lblparamt
Sheets("Trade Ticket").Range("d27").Value = lblprice
Sheets("Trade Ticket").Range("d29").Value = lblprice * lblparamt / 100
Sheets("Trade Ticket").Range("d30").Value = lblcommision
Sheets("Trade Ticket").Range("d32").Value = lblfees
Sheets("Trade Ticket").Range("d34").Value = lblaccruedint
Sheets("Trade Ticket").Range("d35").Value = lbltotal
Sheets("Trade Ticket").Range("a40").Value = lstcp
Sheets("Trade Ticket").Range("a41").Value = lstcontact
Sheets("Trade Ticket").Range("a42").Value = lblphone

```

```

'If obBuy = True Then

```

```

'Sheets("Trade Ticket").Shapes.Range(Array("TextBox 1")).Select
'Selection.ShapeRange(1).TextFrame2.TextRange.Characters.Text = "X"
'Selection.ShapeRange(1).TextFrame2.TextRange.Characters(1,
1).ParagraphFormat. _
    'FirstLineIndent = 0
'With Selection.ShapeRange(1).TextFrame2.TextRange.Characters(1, 1).Font
    '.NameComplexScript = "+mn-cs"
    '.NameFarEast = "+mn-ea"
    '.Fill.Visible = msoTrue
    '.Fill.ForeColor.ObjectThemeColor = msoThemeColorDark1
    '.Fill.ForeColor.TintAndShade = 0
    '.Fill.ForeColor.Brightness = 0
    '.Fill.Transparency = 0
    '.Fill.Solid

```

```

        '.Size = 12
        '.Name = "+mn-lt"
    'End With
    'Else
    'Sheets("Trade Ticket").Shapes.Range(Array("TextBox 4")).Select
    'Selection.ShapeRange(1).TextFrame2.TextRange.Characters.Text = "X"
    'Selection.ShapeRange(1).TextFrame2.TextRange.Characters(1,
1).ParagraphFormat. _
        'FirstLineIndent = 0
    'With Selection.ShapeRange(1).TextFrame2.TextRange.Characters(1, 1).Font
        '.NameComplexScript = "+mn-cs"
        '.NameFarEast = "+mn-ea"
        '.Fill.Visible = msoTrue
        '.Fill.ForeColor.ObjectThemeColor = msoThemeColorDark1
        '.Fill.ForeColor.TintAndShade = 0
        '.Fill.ForeColor.Brightness = 0
        '.Fill.Transparency = 0
        '.Fill.Solid
        '.Size = 12
        '.Name = "+mn-lt"
    'End With
'End If

```

Else

If obffix = True Then

    Sheets("Trade Blotter FF").Select

    Cells(1, 1).Select

```
Selection.End(xlDown).Select
ActiveCell.Offset(1, 0).Range("A1").Select
y = ActiveCell.Row
Cells(y, "a").Value = "FFXIX"
Cells(y, "b").Value = tradedt.Date
Cells(y, "c").Value = settledt.Date
Cells(y, "d").Value = lstsectype
```

```
If obBuy = True Then
Cells(y, "e").Value = "BUY"
Else
Cells(y, "e").Value = "SELL"
End If
```

```
Cells(y, "f").Value = lblCusip
Cells(y, "g").Value = lstISIN
Cells(y, "h").Value = lblTicker
Cells(y, "i").Value = lblSecdes
Cells(y, "j").Value = lblparamt
Cells(y, "k").Value = lblprice
Cells(y, "l").Value = lblaccruedint
Cells(y, "m").Value = ""
Cells(y, "n").Value = lblcommision
Cells(y, "o").Value = lblfees
Cells(y, "p").Value = lbltotal
Cells(y, "q").Value = lstcp
Cells(y, "r").Value = lstcontact
Cells(y, "s").Value = lblphone
Cells.EntireColumn.AutoFit
```

```
Else
```

```
'frmallocation.Show
'If (lblswa0allocation.Value + lblffixallocation.Value) <> 1 Then
'MsgBox ("Sum Must Equal 1")
'Exit Sub
'End If
```

```
Sheets("Trade Blotter SW").Select
Cells(1, 1).Select
Selection.End(xlDown).Select
ActiveCell.Offset(1, 0).Range("A1").Select
y = ActiveCell.Row
Cells(y, "a").Value = "SWA0"
Cells(y, "b").Value = tradedt.Date
Cells(y, "c").Value = settledt.Date
Cells(y, "d").Value = lstsectype
```

```
If obBuy = True Then
Cells(y, "e").Value = "BUY"
Else
Cells(y, "e").Value = "SELL"
End If
```

```
Cells(y, "f").Value = lblCusip
Cells(y, "g").Value = lstISIN
Cells(y, "h").Value = lblTicker
Cells(y, "i").Value = lblSecdes
Cells(y, "j").Value = lblparamt
Cells(y, "k").Value = lblprice
Cells(y, "l").Value = lblaccruedint
Cells(y, "m").Value = ""
Cells(y, "n").Value = lblcommision
```

```
Cells(y, "o").Value = lblfees  
Cells(y, "p").Value = lbltotal  
Cells(y, "q").Value = lstcp  
Cells(y, "r").Value = lstcontact  
Cells(y, "s").Value = lblphone
```

```
Sheets("Trade Blotter FF").Select  
Cells(1, 1).Select  
Selection.End(xlDown).Select  
ActiveCell.Offset(1, 0).Range("A1").Select  
y = ActiveCell.Row  
Cells(y, "a").Value = "FFXIX"  
Cells(y, "b").Value = tradedt.Date  
Cells(y, "c").Value = settledt.Date  
Cells(y, "d").Value = lstsectype
```

```
If obBuy = True Then  
Cells(y, "e").Value = "BUY"  
Else  
Cells(y, "e").Value = "SELL"  
End If
```

```
Cells(y, "f").Value = lblCusip  
Cells(y, "g").Value = lstISIN  
Cells(y, "h").Value = lblTicker  
Cells(y, "i").Value = lblSecdes  
Cells(y, "j").Value = lblparamt  
Cells(y, "k").Value = lblprice  
Cells(y, "l").Value = lblaccruedint  
Cells(y, "m").Value = ""  
Cells(y, "n").Value = lblcommision
```

```
Cells(y, "o").Value = lblfees
Cells(y, "p").Value = lbltotal
Cells(y, "q").Value = lstcp
Cells(y, "r").Value = lstcontact
Cells(y, "s").Value = lblphone
Cells.EntireColumn.AutoFit
```

```
End If
```

```
End If
```

```
End Sub
```

```
'Private Sub lblparamt_Change()
```

```
'lblparamt.Value = Format(lblparamt.Value, "###,###,###")
```

```
'End Sub
```

```
'Sub lbltotal_Click()
```

```
'Dim lblparamt As Integer
```

```
'Dim lblprice As Integer
```

```
'Dim lblaccruedint As Currency
```

```
'Dim lblfees As Currency
```

```
'Dim lblcommision As Currency
```

```
'Dim lbltotal As Currency
```

```
lbltotal = (lblparamt * lblprice / 100) + lblaccruedint + lblfees + lblcommision
```

```
'End Sub
```

```
Private Sub lstISIN_Change()
```

```
Dim isin As String
```

```
Dim isinrow As Integer
```

```
Dim x As Integer
```

```
isin = lstISIN.Value
```

```
x = 1
```

```
Sheets("Securities").Select
```

```
Do Until Sheets("Securities").Cells(x + 1, 1) = ""
```

```
    If InStr(1, Cells(x, 1), (isin)) > 0 Then
```

```
        Sheets("Securities").Cells(x, 1).EntireRow.Select
```

```
        Exit Do
```

```
    End If
```

```
    x = x + 1
```

```
Loop
```

```
lblRow = ActiveCell.Row  
lblCusip = Cells(lblRow, "b")  
lblTicker = Cells(lblRow, "d")  
lblSecdes = Cells(lblRow, "e")  
lblCpn = Cells(lblRow, "g")
```

```
If Cells(lblRow, "h") = "(blank)" Then  
lblMaturity = ""  
Else  
lblMaturity = Cells(lblRow, "h")  
End If
```

```
If Cells(lblRow, "i") = "(blank)" Then  
lblStartaccdt = ""  
Else  
lblStartaccdt = Cells(lblRow, "i")  
End If
```

```
If Cells(lblRow, "j") = "(blank)" Then  
lblNxtcpndt = ""  
Else  
lblNxtcpndt = Cells(lblRow, "j")  
End If
```

```
If Cells(lblRow, "k") = "(blank)" Then  
lblLastcpndt = ""  
Else  
lblLastcpndt = Cells(lblRow, "k")  
End If
```

```
If Cells(lblRow, "l") = "(blank)" Then  
lblCountryofrisk = ""  
Else  
lblCountryofrisk = Cells(lblRow, "l")  
End If
```

```
If Cells(lblRow, "m") = "(blank)" Then  
lblGeoregion = ""  
Else  
lblGeoregion = Cells(lblRow, "m")  
End If
```

```
If Cells(lblRow, "s") = "(blank)" Then  
lblSector = ""  
Else  
lblSector = Cells(lblRow, "s")  
End If
```

```
If Cells(lblRow, "n") = "(blank)" Then  
lblCrncy = ""  
Else  
lblCrncy = Cells(lblRow, "n")  
End If
```

```
If Cells(lblRow, "o") = "(blank)" Then  
lblRtgsp = ""  
Else  
lblRtgsp = Cells(lblRow, "o")  
End If
```

```
If Cells(lblRow, "p") = "(blank)" Then
```

```
lblRtgmdy = ""
```

```
Else
```

```
lblRtgmdy = Cells(lblRow, "p")
```

```
End If
```

```
If Cells(lblRow, "q") = "(blank)" Then
```

```
lblFitch = ""
```

```
Else
```

```
lblFitch = Cells(lblRow, "q")
```

```
End If
```

```
If Cells(lblRow, "r") = "(blank)" Then
```

```
lblRtgcomposite = ""
```

```
Else
```

```
lblRtgcomposite = Cells(lblRow, "r")
```

```
End If
```

```
lblConvention = Cells(lblRow, "t")
```

```
lblIssuetype = Cells(lblRow, "f")
```

```
End Sub
```

```
Sub loadcp()
```

```
Dim x As Integer
```

```
x = 2
```

```
Do Until Sheets("Inputs").Cells(x, "c").Value = ""
```

```
lstcp.AddItem Sheets("Inputs").Cells(x, "c").Value
```

```
x = x + 1
```

```
Loop
```

```
End Sub
```

```
Sub loadcontact()
```

```
Dim x As Integer
```

```
x = 2
```

```
Do Until Sheets("Inputs").Cells(x, "d").Value = ""
```

```
lstcontact.AddItem Sheets("Inputs").Cells(x, "d").Value
```

```
x = x + 1
```

```
Loop
```

```
End Sub
```

```
Sub loadSecuritytypes()
```

```
Dim x As Integer
```

```
x = 2
```

```
Do Until Sheets("inputs").Cells(x, 1).Value = ""
```

```
lstsectype.AddItem Sheets("Inputs").Cells(x, 1).Value
```

```
x = x + 1
```

```
Loop
```

```
End Sub
```

```
Sub loadISIN()
```

```
Dim x As Integer
```

```
    x = 2
```

```
    Do Until Sheets("securities").Cells(x, 1).Value = ""
```

```
    lstISIN.AddItem Sheets("securities").Cells(x, 1).Value
```

```
    x = x + 1
```

```
    Loop
```

```
End Sub
```

```
Private Sub DTPicker1_CallbackKeyDown(ByVal KeyCode As Integer, ByVal Shift As Integer, ByVal CallbackField As String, CallbackDate As Date)
```

```
End Sub
```

```
Private Sub DTPicker2_CallbackKeyDown(ByVal KeyCode As Integer, ByVal Shift As Integer, ByVal CallbackField As String, CallbackDate As Date)
```

```
End Sub
```