



# **Technical Specification Document**

## **APEXPEAK PTE LTD**

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## Document Control

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### Approvals

*Approval refers to the approver's acceptance of the content and overall intention of this document, including acceptance of any commitments described in order to successfully deliver the initiative. The approver, where relevant, also confirms that this document complies with relevant strategies, policies and regulatory requirements.*

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### Related documents

Document	Location

## Table of Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>4</b>
1.1	Objectives .....	4
1.2	Scope.....	4
1.3	Development Environment .....	4
<b>2</b>	<b>FUNCTIONALITY.....</b>	<b>5</b>
2.1	Use Case Diagram .....	5
2.2	Site Map.....	5
2.3	Field Matrix .....	8
<b>3</b>	<b>ACHITECTURE.....</b>	<b>9</b>
3.1	Architecture Overview.....	9
<b>4</b>	<b>DESIGN.....</b>	<b>10</b>
4.1	Object Diagram.....	10
4.3	Data Dictionary .....	11
<b>5</b>	<b>CODE .....</b>	<b>12</b>
5.1	Coldfusion File Names and Structure .....	12

# 1. INTRODUCTION

## 1.1 Objectives

This document is a generic technical design document for the projects. It provides guidance which is intended to assist the relevant management, technical staff or client. It is also useful background reading for anyone involved in customization or monitoring the Pastel Export Customization interface.

## 1.2 Scope

This preface describes:

- Design UI for passing some valid inputs and select the CSV file locally saved using the browse option.
- Create the mapping table(Non object) in SAP B1, field code contains GL account of bibby's pastel system and name contains of SAP GL account.
- After the button click in the UI, identify the CSV file from the location and import it in data view.
- Get the data's for respective reference and start doing the validation
  1. Validating the CSV G/L account code have corresponding SAP G/L account in the mapping table.
  2. Validating the total credit amount with total debit amount whether its same / not.
- Any one of this validation fails, the system should prompt some related information's, so that the user get notified.
- If it's not fails, the system will post the respective transaction in SAP B1.

## 1.3 Development Environment

- This Solution is a True Add-on, Developed in VS2010 with using SAP B1 9 DLLs.

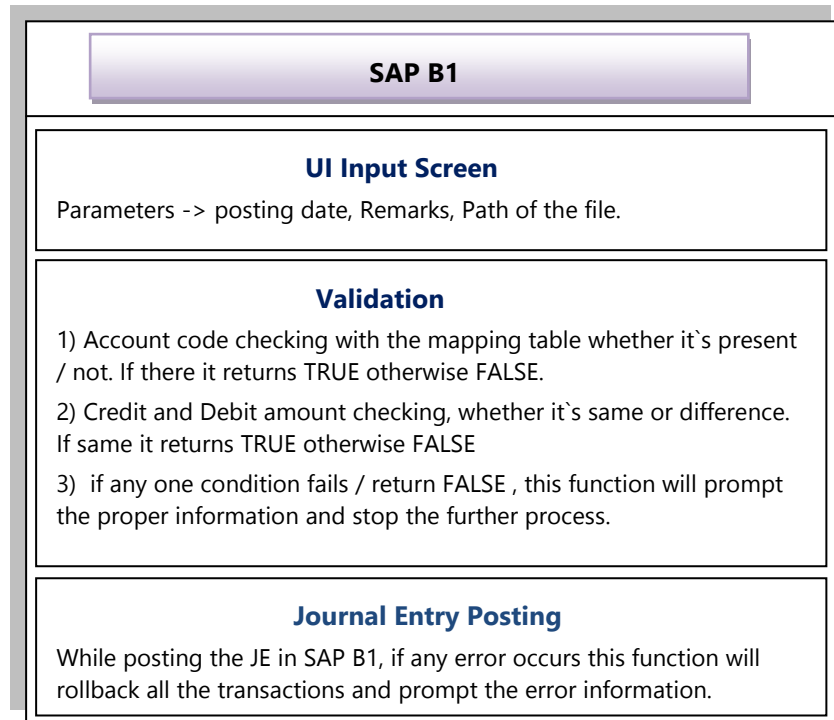
IDE : Visual Studio 2010

.Net Framework : 3.5

SAP Components : SAP B1 SDK, UIAPI, DIAPI

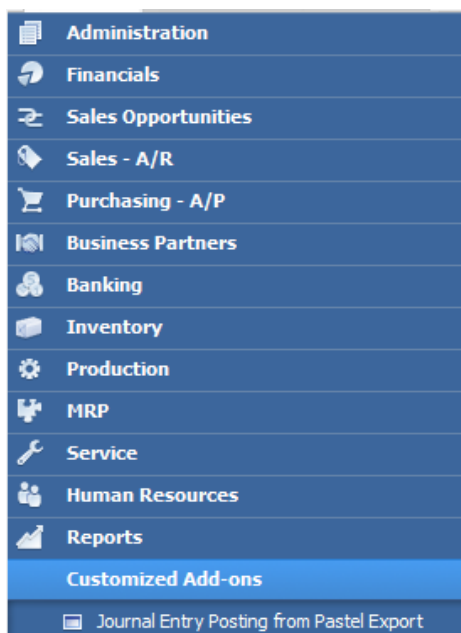
## 2. Functionality

### 2.1 Use Case Diagram

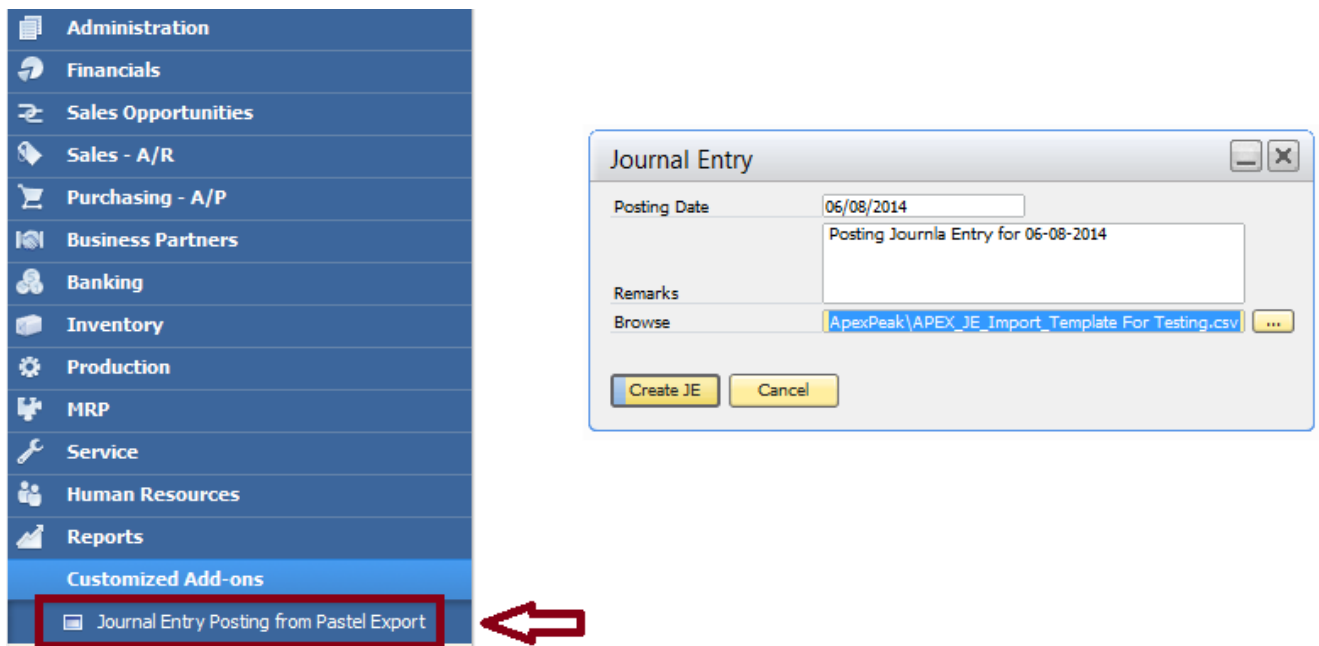


### 2.2 Site Map

The applications site map showing the navigation streams.



**SAP B1 Menu -> Customized Add-ons -> Journal Entry Posting from pastel export.**



**Validations:**

#1

1. If GDC is G, the AccNumber must have a corresponding SAP G/L Account in the mapping table. If there is no corresponding SAP G/L Account found in the mapping table, the program should pop up an error message to the user and no import should be made to SAP
2. If GDC is D → use the SAP G/L Debtor Account Number assigned to Debtor in the mapping table, i.e. all "D" AccNumbers will go into one SAP Debtor G/L Account.
3. If GDC is C → use the SAP G/L Creditor Account Number assigned to Creditor in the mapping table, i.e. all "C" AccNumbers will go into one SAP Creditor G/L Account

Error! The following AccNumbers do not have a corresponding SAP G/L Account in the mapping table!

Account Code

=====

Creditor Account Code

=====

Please create an entry for each of these invalid AccNumbers.

#2

1. If the SAP G/L Account Code in the mapping table is not found in table OACT (SAP COA) or Postable field is not equal to 'Y' then throw error

Error!The following SAP G/L Accounts are not found in the Chart of Accounts or the account is not an Active Account!

Account Code

400190.

Please create an entry for each of these invalid Account Numbers in Chart of Accounts or make sure these accounts are Active Accounts.

#3

1. For each Journal Entry, the Total Debit must be equal to the Total Credit. If not equal, the program should pop up an error message to the user and no import should be made to SAP

Error! The Total Debit is not equal to the Total Credit for the following group(RefNo)

Debit Amount	Credit Amount	Difference	RefNo
41532883.15	41532880.15	3	2

Please check the grouping of entries in the CSV file

SAP B1 Menu -> Financials -> Journal Entry.

The screenshot shows the SAP Journal Entry window. At the top, there are fields for Series (JV), Number (239), Posting Date (05/08/2014), Due Date (05/08/2014), Doc. Date (05/08/2014), and Remarks (Posting Journal Entry For 06-08-2014). Below these are fields for Origin (JE), Origin No. (239), Trans. No. (240), Template Type, Template, Indicator, and Project. There are also checkboxes for Fixed Exchange Rate, Reverse, Adj. Trans. (Period 13), and Automatic Tag.

Below the input fields is a table with columns: #, G/L Acct/BP Code, G/L Acct/BP Name, Debit, Credit, Remarks, Project, Tax Group, Federal Tax ID, Tax Amount, Gross Value, and Base ...

#	G/L Acct/BP Code	G/L Acct/BP Name	Debit	Credit	Remarks	Project	Tax Group	Federal Tax ID	Tax Amount	Gross Value	Base ...
1	400200	CAR HIRE INCOME (MALAYSIA)	SGD 36,958.80		Posting Journal Entry f						
2	400100	BAD DEBTS RECOVERED		36,958.80	Posting Journal Entry f						
3	400190	MANAGEMENT FEES REC'D		35,572.84	Posting Journal Entry f						
4	400120	COLLISION DAMAGE WAIVER F	SGD 35,572.84		Posting Journal Entry f						
5	400200	CAR HIRE INCOME (MALAYSIA)	SGD 61,537.20		Posting Journal Entry f						
6	400110	BANK INTEREST EARNED		61,537.20	Posting Journal Entry f						
7	400190	MANAGEMENT FEES REC'D		59,229.55	Posting Journal Entry f						
8	400130	CDW/PAI - MALAYSIA USE	SGD 59,229.55		Posting Journal Entry f						
9	400200	CAR HIRE INCOME (MALAYSIA)	SGD 67,307.24		Posting Journal Entry f						
10	400140	DISPOSAL OF ASSETS		67,307.24	Posting Journal Entry f						
11	400190	MANAGEMENT FEES REC'D		64,783.22	Posting Journal Entry f						
12	400140	DISPOSAL OF ASSETS	SGD 64,783.22		Posting Journal Entry f						
13	400200	CAR HIRE INCOME (MALAYSIA)		54,093.00	Posting Journal Entry f						
			41,532,883.15	41,532,883.15							

At the bottom of the window, there are buttons for OK, Cancel, Display in FC, Display in SC, and Cancel Template.

### 2.3 Field Matrix

Bibby's Pastel system in South Africa has a different Chart of Accounts with Singapore's SAP Business One. In order to import the data, G/L Account mapping between the two systems is needed. A User Defined Table (UDT) has been created in SAP Business One under the company Bibby(BIBBY\_LIVE database) to serve this purpose.

This table contains the G/L Account Mapping between Bibby's Pastel system and SAP Business One.

UDT Name:     dbo.[@BIBBY\_ACCT\_MAPPING]

UI Column Name	Bibby Acct	Apex Peak SG Acct
Column Description	Pastel System G/L Account	SAP G/L Account
	Sample Data	
DB Column Name	Code	Name
	G/L Account 1	SAP G/L Account 1
	G/L Account 1	SAP G/L Account 2
	D	SAP G/L Debtor Account
	C	SAP G/L Creditor Account

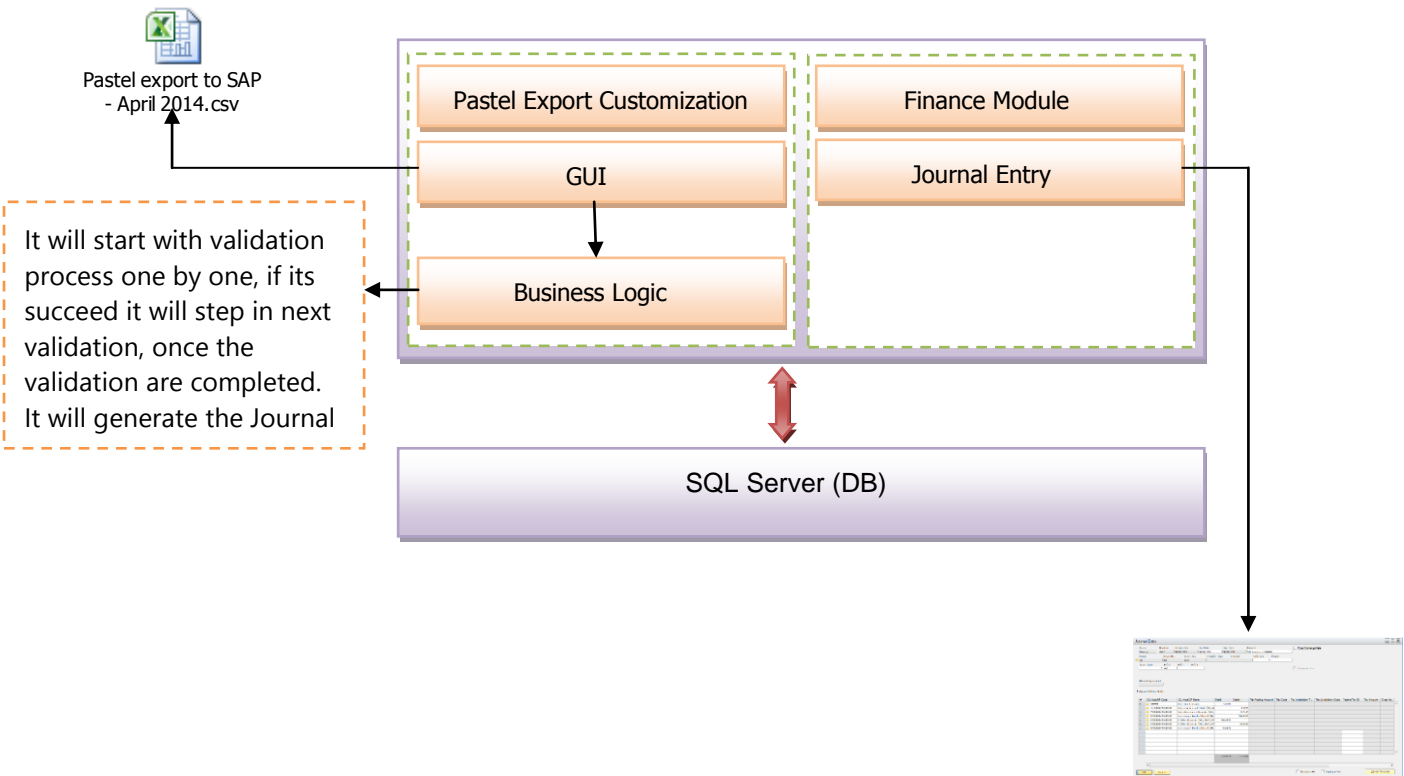
User needs to provide the G/L account mapping during design stage. After go-live, user will have to maintain this table.

Tools → User-Defined Windows → BIBBY\_ACCT\_MAPPING – Bibby Account Mapping



### 3. Architecture

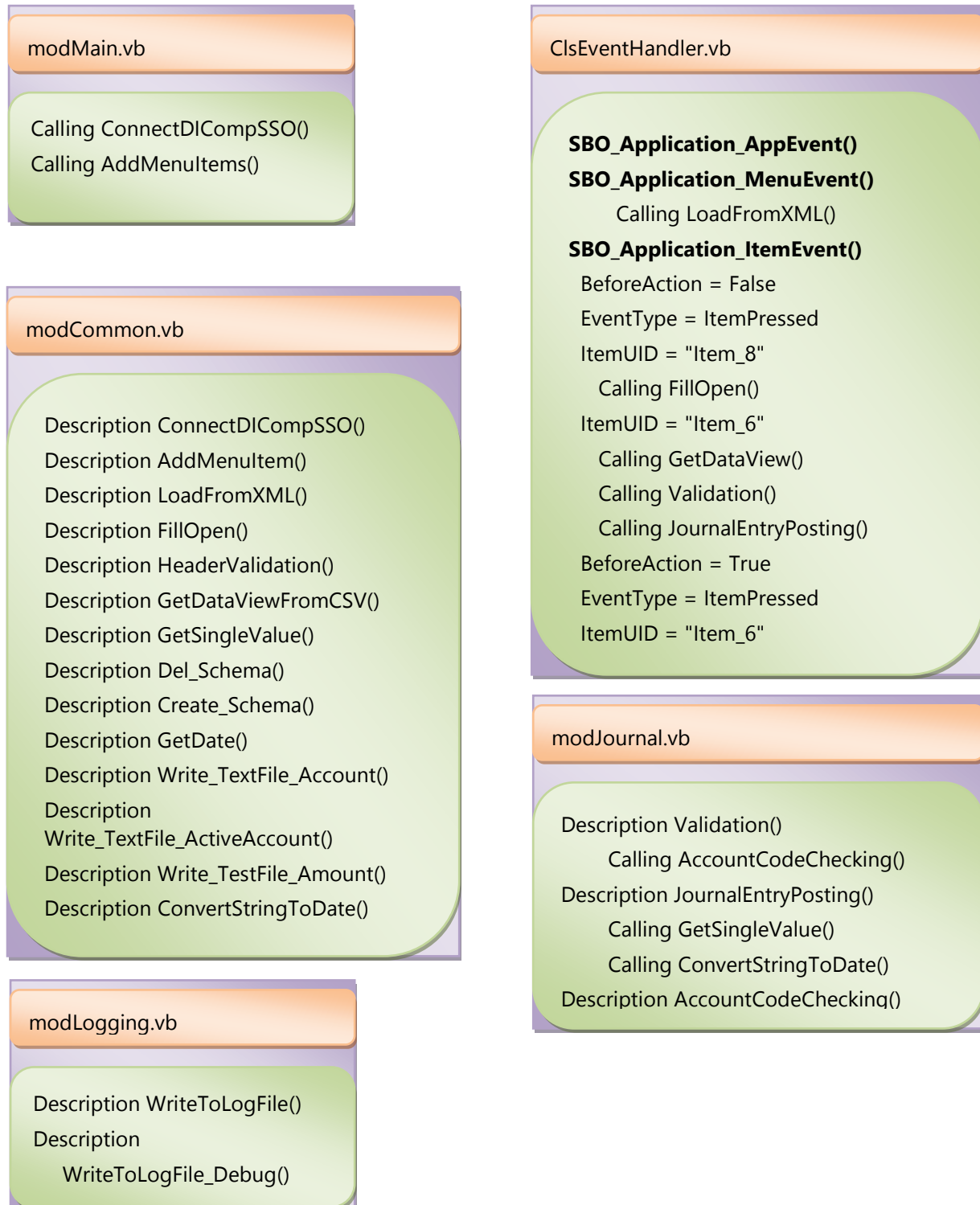
#### Architecture Overview



## 4. Design

### Object Diagram

A diagram of all of the participating classes and all of the objects methods.



## Data Dictionary

Descriptions of all the fields and Tables in the system.

Bibby's Pastel system in South Africa has a different Chart of Accounts with Singapore's SAP Business One. In order to import the data, G/L Account mapping between the two systems is needed. A User Defined Table (UDT) has been created in SAP Business One under the company Bibby(BIBBY\_LIVE database) to serve this purpose.

This table contains the G/L Account Mapping between Bibby's Pastel system and SAP Business One.

UDT Name: dbo.[@BIBBY\_ACCT\_MAPPING]

BIBBY_ACCT_MAPPING	BIBBY_ACCT_MAPPING	No Object	▼	
--------------------	--------------------	-----------	---	--

## UDF Details

- BibbyAFCode Alphanumeric(40)
- BibbySGCode Alphanumeric(40)

▼ BIBBY_ACCT_MAPPING						
	BibbyAFCode	Bibby Account Code	Alphanumeric (40)			
	BibbySGCode	Bibby Singapore Code	Alphanumeric (40)			

BIBBY\_ACCT\_MAPPING

#	Code	Name	Bibby Account Code	Bibby Singapore Code
2	1100650	400110	1100650	400110
3	2000100	400120	2000100	400120
4	2000650	400130	2000650	400130
5	3200000	400140	3200000	400140
6	3900200	400000	3900200	400150
7	8420000	400160	8420000	400160
8	APP001	400161	APP001	400161
9	APP999	400170	APP999	400170
10	C	V9999	C	600200
11	D	C9999	D	600210
12	PRE001	400180	9300000	400180
13	PRE999	400250	8000000	400250
14				

OK

Cancel

## 5. Code

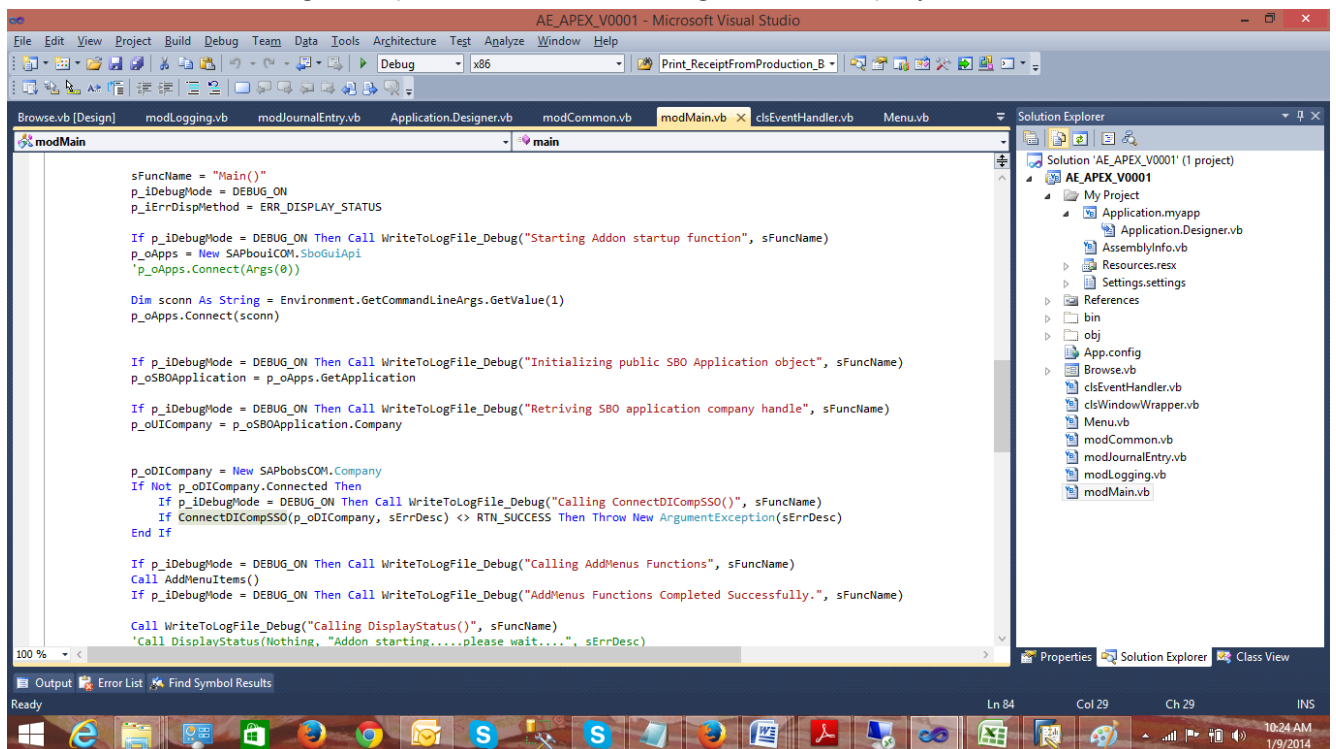
### Coldfusion File Names and Structure

The purpose for the methods/ function in this solutions.

#### Module and Class Name:

- **modMain.vb**

Initializing some public variables and calling the SAP Company connection method.



- **clsEventHandler.vb**

Event handler class having the main three events

- *AppEvent*

It will triggers when the connections / disconnection happen with the company database.

```

Select Case EventType
    Case SAPbouiCOM.BoAppEventTypes.aet_CompanyChanged, SAPbouiCOM.BoAppEventTypes.aet_ShutDown, SAPbouiCOM.BoAppEventTypes.aet_ServerTerminati
        sMessage = String.Format("Please wait for a while to disconnect the AddOn {0} ....", System.Windows.Forms.Application.ProductName)
        p_oSBOApplication.SetStatusBarMessage(sMessage, SAPbouiCOM.BoMessageTime.bmt_Medium, False)
    End
End Select
    
```

- *MenuEvent*

It will triggers any menu is clicked / pressed.

```

        If pVal.BeforeAction = False Then
            Select Case pVal.MenuUID
                Case "JE"
                    Try
                        LoadFromXML("JournalEntry.srf", SBO_Application)
                        oForm = SBO_Application.Forms.Item("JournalE")

                        oForm.Visible = True
                        Exit Try

                    Catch ex As Exception
                        SBO_Application.StatusBar.SetText(ex.Message, SAPbouiCOM.BoMessageTime.bmt_Short, SAPbouiCOM.BoStatusBarMessage1)
                        BubbleEvent = False
                    End Try
                Exit Sub
            End Select
        End If
    
```

- *ItemEvent*

### For Browse - Button Click

```

Case "JournalE"
    If pVal.EventType = SAPbouiCOM.BoEventTypes.et_ITEM_PRESSED Then
        If pVal.ItemUID = "Item_8" Then
            Dim oForm As SAPbouiCOM.Form = p_oSBOApplication.Forms.ActiveForm
            sFuncName = "'Browse' Button Click - ID 'Item_8'"
            If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Calling File Open Function", sFuncName)
            oForm.Items.Item("Item_5").Specific.string = fillopen()
            If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Completed With Success File Open Function", sFuncName)
            ' oForm.Items.Item("Item_5").Specific.string = p_sSelectedFilepath
        Exit Sub
    End If
End If
    
```

### For Journal Entry Creation - Button Click

**GetDataViewFromCSV()** - This function will handles the data export from CSV files to DataView "p\_oDVJE".

**Validation()** - This function will handles the validation part and if any validation fails, it will prompt the msg.

**JournalEntryPosting()** - This function will handles to generate the Journal entry in SAP B1.

```

If pVal.ItemUID = "Item_6" Then
    Dim oForm As SAPbouiCOM.Form = p_oSBOApplication.Forms.ActiveForm
    Dim oDataview_Tmp As DataView = Nothing
    sFuncName = "'Create JE' Button Click - ID 'Item_6'"

    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Calling GetDataViewFromCSV Function", sFuncName)
    p_oDVJE = GetDataViewFromCSV(oForm.Items.Item("Item_5").Specific.string, p_sSelectedFileName)

    If p_oDVJE Is Nothing Then
        If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("No Datas in the CSV file", sFuncName)
        BubbleEvent = False
        Exit Sub
    End If

    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Completed with Success GetDataViewFromCSV Function", sFuncName)
    oDTDistinct = p_oDVJE.Table.DefaultView.ToTable(True, "F7")

    ReDim p_sRefNuber(oDTDistinct.Rows.Count, 4)
    ReDim p_sAccountCodes(p_oDVJE.Count)
    ReDim p_sAccountCodes_ActiveAccount(p_oDVJE.Count)
    p_iArrayAcctCount = 0
    p_iArrayCount = 0
    p_iArrayAcctActiveCount = 0

    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Calling Validation Function", sFuncName)

    For IntRow As Integer = 1 To oDTDistinct.Rows.Count - 1
        p_oDVJE.RowFilter = "F7 = '" & oDTDistinct.Rows(IntRow).Item(0).ToString & "'"
        Validation(p_oDVJE)
    Next
    
```

```

If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Completed With Success Validation Function", sFuncName)

If Not String.IsNullOrEmpty(p_sAccountCodes(0)) Then
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("AccNumbers do not have a corresponding SAP G/L Account in the mapping table", sFuncName)
    Write_TextFile_Account(p_sAccountCodes)
    BubbleEvent = False
    ' sCursor.Current = Windows.Forms.Cursors.Default
    Exit Sub
End If

If Not String.IsNullOrEmpty(p_sAccountCodes_ActiveAccount(0)) Then
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("AccNumbers do not exist in SAP G/L Account table or inactive accounts", sFuncName)
    Write_TextFile_ActiveAccount(p_sAccountCodes_ActiveAccount)
    BubbleEvent = False
    ' sCursor.Current = Windows.Forms.Cursors.Default
    Exit Sub
End If

If Not String.IsNullOrEmpty(p_sRefNuber(0, 0)) Then
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("The Total Debit is not equal to the Total Credit", sFuncName)
    Write_TextFile_Amount(p_sRefNuber)
    BubbleEvent = False
    ' sCursor.Current = Windows.Forms.Cursors.Default
    Exit Sub
Else
    ' sCursor.Current = Windows.Forms.Cursors.Default
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Start the SAP Transaction", sFuncName)
    If Not p_oDICompany.InTransaction = True Then p_oDICompany.StartTransaction()

    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Calling JournalEntryPosting Function", sFuncName)

    For IntRow As Integer = 1 To oDTDISTINCT.Rows.Count - 1
        If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Filtering data with respective reference - " & oDTDISTINCT.Rows(IntRow).Item(0).ToString, sFuncName)

        p_oDVJE.RowFilter = "F7 = '" & oDTDISTINCT.Rows(IntRow).Item(0).ToString & "'"
        If JournalEntryPosting(p_oDVJE, oForm.Items.Item("Item_3").Specific.String, oForm.Items.Item("Item_4").Specific.String, sErrDesc) = RTN_ERROR 1
            If p_oDICompany.InTransaction Then p_oDICompany.EndTransaction(SAPbobsCOM.BoWfTransOpt.wf_RollBack)
            If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Completed With Error JournalEntryPosting Function", sFuncName)
            If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Rollback transaction on company database ", sFuncName)
            WriteToLogFile("Completed With Error JournalEntry Posting Function", sFuncName)
            WriteToLogFile("Rollback transaction on company database", sFuncName)
            Exit Sub
        End If
    Next
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Completed with Success JournalEntryPosting Function", sFuncName)

    If p_oDICompany.InTransaction Then p_oDICompany.EndTransaction(SAPbobsCOM.BoWfTransOpt.wf_Commit)
    p_oSBOApplication.MessageBox("Journal Entry has been successfully generated ..... !", 1, "Ok")
    oForm.Items.Item("Item_3").Specific.String = String.Empty
    oForm.Items.Item("Item_4").Specific.String = String.Empty
    oForm.Items.Item("Item_5").Specific.String = String.Empty
    If p_iDebugMode = DEBUG_ON Then Call WriteToLogFile_Debug("Transaction has been committed successfully ", sFuncName)
End If
Exit Sub

```

- **modCommon.vb**

**AddMenuItems()** - Creating the Menus in the SAP B1 GUI.

**LoadFromXML()** - Used to open the .srf file.

**FillOpen()** - Handles the Open Dialogue Box for navigate the CSV file.

**HeaderValidation()** - Validates the GUI .

**GetDataViewFromCSV()** - Export the CSV data into Dataview.

**GetSingleValue()** - Returns the SAP COA.

**Create\_Schema()** - Helps to retrieve the exact data in the CSV.

**Del\_Schema()** - After exporting the CSV file , it will delete the schema.

**GetDate()** - Helps to get the company Date format for posting the Journal Entry.

**Wirte\_TextFile\_Account()** - If account is missing in the mapping table , it will write into the text file and finally it will prompt as a message.

**Write\_TextFile\_ActiveAccount()** - it will write into the text file if the account is not active / invalid.

**Write\_TextFile\_Amount()** - it will write into the text file if the credit and debit amount is not same.

**ConvertStringToDate()** - This function will convert the string value "d/M/yyyy" to Date type "yyyy/M/d"

```
Public Sub AddMenuItems() ...

Public Sub LoadFromXML(ByVal FileName As String, ByVal Sbo_application As SAPbouiCOM.Application) ...

Public Sub ShowFileDialog() ...

Public Function fillopen() As String ...

Function HeaderValidation(FormUID As SAPbouiCOM.Form, ByRef sErrDesc As String) As Long ...

Public Function GetDataViewFromCSV(ByVal CurrFileToUpload As String, ByVal Filename As String) As DataView ...

Public Function GetSingleValue(ByVal sAccountCode As String, ByVal sGDC As String) As String ...

Public Function Del_schema(ByVal csvFileFolder As String) As Long ...

Public Function Create_schema(ByVal csvFileFolder As String, ByVal FileName As String) As Long ...

Public Function GetDate(ByVal sDate As String, ByRef oCompany As SAPbobsCOM.Company) As String ...

Public Sub Write_TextFile_Account(ByVal sAccount() As String) ...

Public Sub Write_TextFile_ActiveAccount(ByVal sAccount() As String) ...

Public Sub Write_TextFile_Amount(ByVal sAmount(,) As String) ...

Public Function ConvertStringToDate(ByRef sDate As String) As Date ...
```