Xojo Calendar and Time Chooser
User Documentation
v1.9

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I. Project Information

Development Model:	Open Source
Version Control Repository:	GitHub
Repository Type:	Public
Link to Repository:	https://github.com/mikecotrone/CalendarTimeChooser
Project File Format:	"Xojo Project (xojo_project)"
License:	BSD-3 Clause
Affiliation:	This project is authored and maintained by Intelligent Visibility, Inc.
Author:	Mike Cotrone
Code Contributors:	Jim McKay
Doc Contributors	Gavin Smith

II. Document Version History

Version 1.0.1	May 5, 2014	Initial documentation
Version 1.0.2	May 5, 2014	Added more content and images to most sections
Version 1.0.3	May 6, 2014	Added section "IV"
Version 1.0.4	May 6, 2014	Added section "XII" and updated a few images
Version 1.0.5	May 6, 2014	Added section "VIII" and image
Version 1.0.6	May 12, 2014	Added Gavin Smith's recommendations (Thanks Gavin!)
Version 1.0.9	August 25, 2014	Added gradient fill and color wheel chooser Fixed the lack of native feel on the clock time chooser

III. Project Purpose (Please Read)

The purpose of this project was to create a professional "Calendar and Time Chooser" control for my Xojo™ made applications. I was pleasantly surprised to see the volume of participation on this topic on the Xojo™ Forums to where I believe this topic set a record (unofficial) for the most views.

Special Thanks to Jim McKay who made significant contributions to the code base specifically around the clock face hands and OOP restructuring. This interest and contribution help has driven me to expand this project several times.

What this Project IS:

This project is a multi-featured Calendar and Time Chooser control tool. The following features are available to you:

General Options:
- Show "Calendar Chooser Only", "Show Time Chooser Only", "Show Both Choosers"
- Change background color of this tool

Clock Options:
- 12 hour or 24 hour time formats
- Multiple clock faces to choose from
- Change color of clock hands

Calendar Options:
- Change "Week Start Day"
- Include/Exclude next/previous months on calendar
- Localizations: English, Afrikaans, Dutch, French, German, Italian, Polish, Spanish, Swedish
- Allow multiple date selections

What this Project ISNT:

I feel that communicating what this project is and is not is key setting the expectations.

- This project is not a clock nor a countdown timer

- It is not calendar software i.e. Outlook or Thunderbird

- This project does not employ SQLite or any other databases for data storage

- This project isn't designed to be "parted" out as the options will dictate how the tool operates (more detail later in this document)

IV. Quick Start Setup

Download Project, Copy folders, and Enable GDI

1. Download the project at https://github.com/mikecotrone/CalendarTimeChooser by clicking the "Download ZIP" button on the bottom right hand side of the page

2. Open "CalendarTimeChooser.xojo_project" with the Xojo IDE

3. Copy all Folders that begin with "1 – 5" to your destination project (*Note: You probably do not want the "Demo Window" folder for your destination project*)
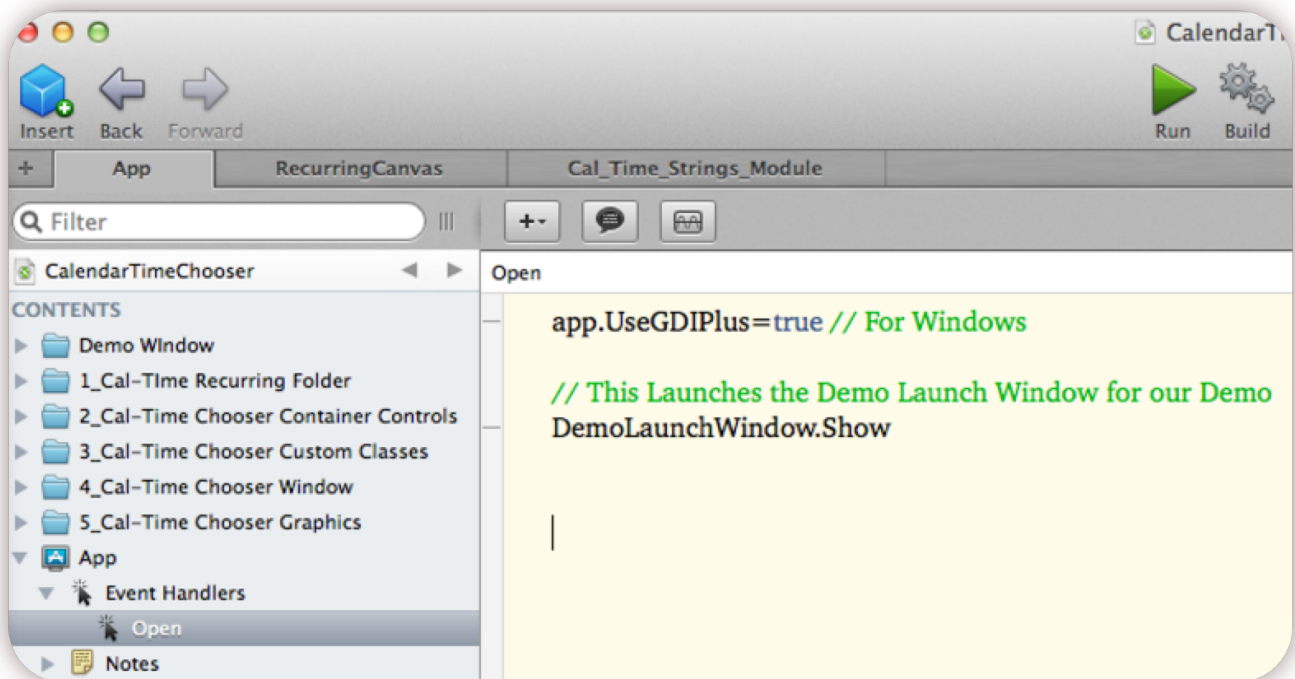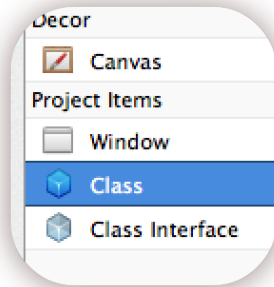

Figure 1. Depicts the six (6) folders that comprise the "Calendar and Time Chooser" project

4. Enable "GDI Plus" in your destination project (*for example: copy "app.UseGDIPlus=True" to your destination project app.open event*)

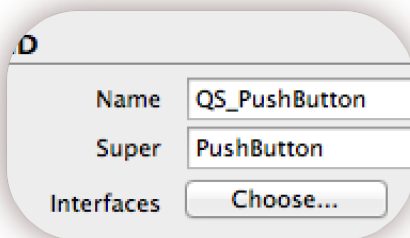## Create instantiation of Options and DateTimeWindow

There are many ways to accomplish this step, but for this quick start example I will use a "PushButton" control that will be responsible for instantiating the "DateTimeWindow" and its options.

5. From the Xojo IDE drag a new "Class" to your project
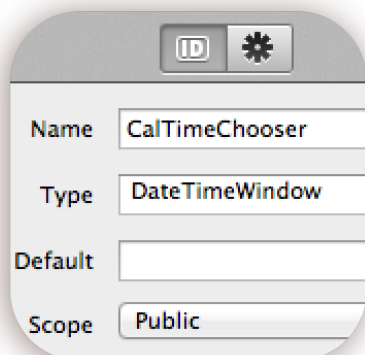
6. Name your new class "QS_PushButton"
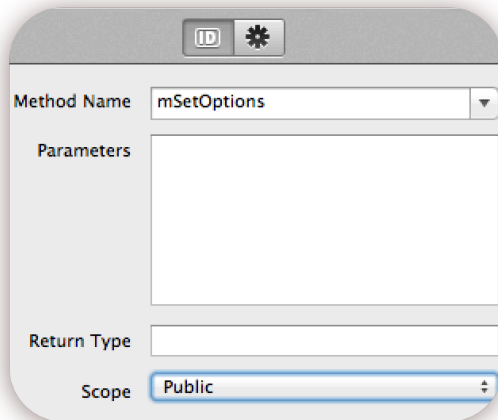
7. Change it's super class to "PushButton"

8. Add a new "Property" to the "QS_PushButton" and name it "CalTimeChooser"

9. Change the "CalTimeChooser" property type to: DateTimeWindow

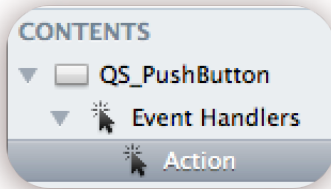10. Add a method named "mSetOptions" to the "QS_PushButton"

11. Add the following Code to the "mSetOptions" Method based on how you want this tool to behave in your project. (Detailed explanation of each option can be found on page 9)

```
// Chooser Type:
CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements.CalendarAndClock
// Chooser Window Back Color
CalTimeChooser.Date_Time_Container1.BackColor = RGB(239,239,239)
// Chooser Time Format
CalTimeChooser.Date_Time_Container1.Time_Container1.TimeMode = 12
// Chooser Clock Face Type
CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Chrome
// Chooser Clock Hands Type
CalTimeChooser.UseGraphicalClockHands=True
// Chooser Week Start
CalTimeChooser.WeekStartsOnMonday = False
// Chooser Calendar to include previous/next days on calendar
CalTimeChooser.IncludePrevNextMonthDays = True
// Calendar Localization
CalTimeChooser.LocalizationInt = 0 // 0-English
// Allow User to Select Multiple Calendar Days
CalTimeChooser.AllowMultipleCalendarSelections = False
// Calendar Start Year:: This date integer is your calendar's start date
CalTimeChooser.Date_Time_Container1.Calendar_Container1.Calendar1.StartYear = 1975
CalTimeChooser.Date_Time_Container1.Calendar_Container1.Calendar1.EndYear = 2052
```
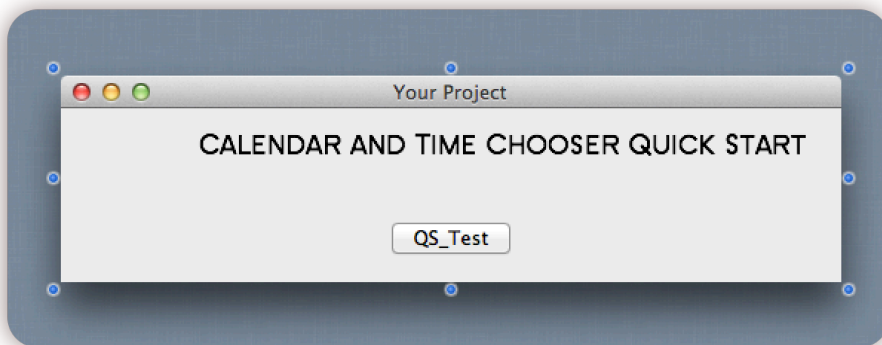
12. Add the "Action" event to the "QS_PushButton"

13. In the "Action" event add the following code:

```
CalTimeChooser = New DateTimeWindow
mSetOptions
```

14. Drag your newly-created custom "PushButton" control "QS_PushButton" onto a Window in your destination project

Quick start is now complete! Run your project in the IDE to see your project.

IV. Project Option Definitions

This section provides details for the "Calendar and Time" options that are available to change the behavior of this tool.

General Options

Calendar and Time Chooser Layout Option	
Description:	This option allows you to set which chooser is visible. *Choose <u>one</u> option*
Choice #1	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements.CalendarAndClock
Choice #2	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements.CalendarOnly
Choice #3	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements.ClockOnly

Change Back Color of Chooser Window	
Description	This option will change the back color of the chooser (all choosers). *Replace the RGB color with your desired color.*
Option	CalTimeChooser.Date_Time_Container1.BackColor = RGB(239,239,239)

Clock / Time Options

Time Format	
Description	This option allows you to set which time format you would like. *Choose <u>one</u> time format*
Option 1	CalTimeChooser.Date_Time_Container1.Time_Container1.TimeMode = 12
Option 2	CalTimeChooser.Date_Time_Container1.Time_Container1.TimeMode = 24

Clock Face Type	
Description	This option allows you to set which clock face is displayed graphically *Choose <u>one</u> option*
Option 1	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Chrome
Option 2	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Antique
Option 3	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.GoogleStyle
Option 4	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Dynamic_12hr
Option 5	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Modern
Option 6	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Roman
Option 7	CalTimeChooser.ClockFaceType = Date_Time_Container.ClockFaceType.Standard

Choose Clock Hand Type	
Description	This option allows you to choose between the graphical clock hands or plain lines. *Choose <u>True</u> or <u>False</u>*
Option	CalTimeChooser.UseGraphicalClockHands=True

Choose Clock Hand Color	
Description	This option allows you to the color of the minute and hour clock hands (second hand is always red)
Option	CalTimeChooser.Date_Time_Container1.ClockHandColor = RGB(120,20,200)

Calendar Options

Week Begins on Monday	
Description	If False the week begins on Sunday If True the week begins on Monday
Option 1	CalTimeChooser.WeekStartsOnMonday = False
Option 2	CalTimeChooser.WeekStartsOnMonday = True

Include / Exclude Previous/Next Months on Calendar View	
Description	This option enables or disables displaying the next and previous month days on the calendar.
Option 1	CalTimeChooser.IncludePrevNextMonthDays = True
Option 2	CalTimeChooser.IncludePrevNextMonthDays = False

Localization	
Description	Choose the localization Integer that you desire.
English	CalTimeChooser.LocalizationInt = 0
French	CalTimeChooser.LocalizationInt = 1
Swedish	CalTimeChooser.LocalizationInt = 2
Italian	CalTimeChooser.LocalizationInt = 3
Spanish	CalTimeChooser.LocalizationInt = 4
Dutch	CalTimeChooser.LocalizationInt = 5
German	CalTimeChooser.LocalizationInt = 6
Afrikaans	CalTimeChooser.LocalizationInt = 7
Polish	CalTimeChooser.LocalizationInt = 8

Allow Multiple Calendar Date Selections

Description	If True then "Single" selection allowed only If False then "Multiple" selection allowed
Option 1	CalTimeChooser.AllowMultipleCalendarSelections = True
Option 2	CalTimeChooser.AllowMultipleCalendarSelections = False

Calendar Start Year

Description	Enter the "Start" year integer that you would like the calendar to allow user selection.
Option	CalTimeChooser.Date_Time_Container1.Calendar_Container1.Calendar1.StartYear = 1975

Calendar End Year

Description	Enter the "End" year integer that you would like the calendar to allow user selection.
Option	CalTimeChooser.Date_Time_Container1.Calendar_Container1.Calendar1.EndYear = 2175

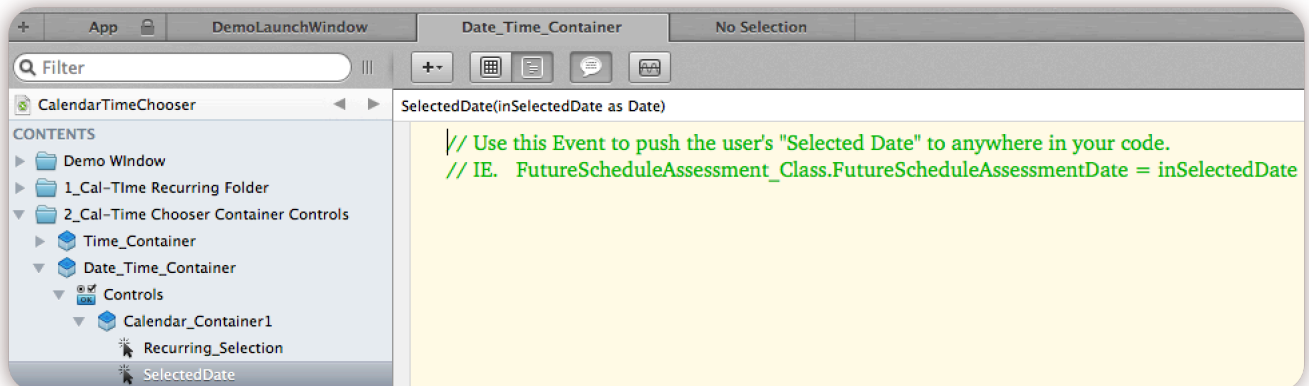## V. How Do I Get the User Selected Results?

There are three custom event definitions, which will provide you the user selection results.

1. Calendar: Selected Date(s)
2. Calendar: Selected Recurring Type
3. Clock/Time: Selected Time
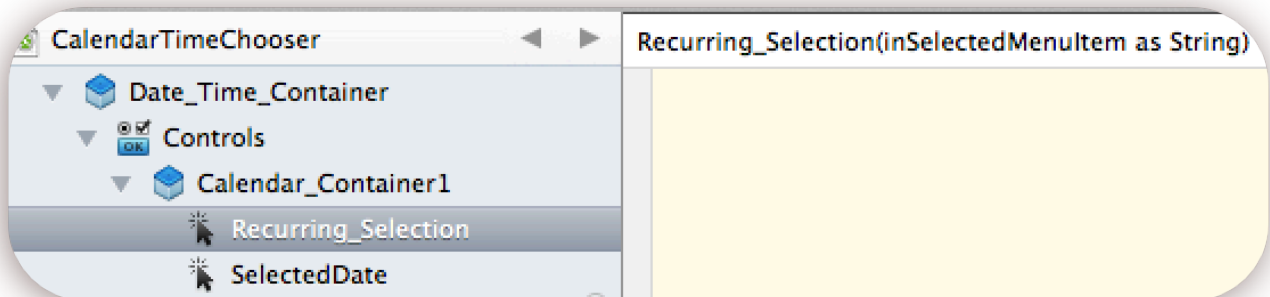
The following describes these events:

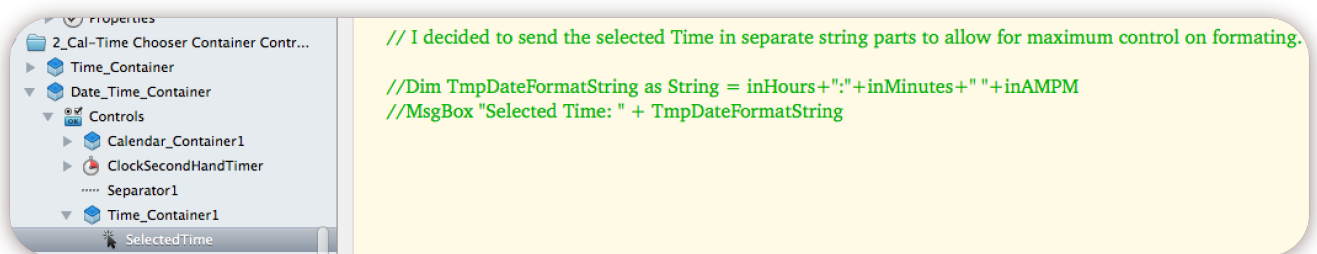| Calendar Date(s) Selection	
Description	This event will contain the user's selected date or dates which you may use in your application
Event Name	SelectedDate
Name Space	Date_Time_Container.Calendar_Container1
Parameter Type	Date

Calendar Recurring Selection Type

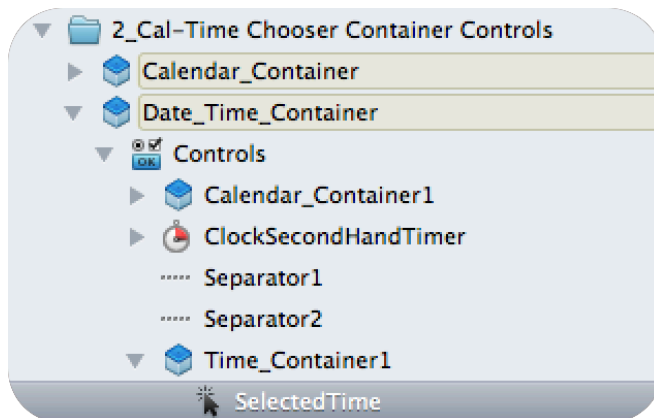|	
Description:	This event will contain the user's recurring choice
Event Name:	Recurring_Selection
NameSpace:	Date_Time_Container.Calendar_Container1
Parameter Type:	String

User Time Selection	
Description:	This event will contain the user's time selection
Event Name:	SelectedTime
NameSpace:	Date_Time_Container.Time_Container1
Parameter Type:	Strings


```
// I decided to send the selected Time in separate string parts to allow for maximum control on formating.

//Dim TmpDateFormatString as String = inHours+":"+inMinutes+" "+inAMPM
//MsgBox "Selected Time: " + TmpDateFormatString
```

VI. How Do I Use the "SelectedTime" Custom Event?

SelectedTime Parameters

The "SelectedTime" event expects two (2) mandatory parameters with one (1) optional parameter. The goal was to provide as much flexibility to the coder by separating each time field. This allows the coder to choose exactly how they want to reassemble the time, instead of being forced into an unwanted format representation.

The following parameters as follows:

- inHours   as String (mandatory)

- inMinutes   as String (mandatory)

- inAMPM   as String (optional and for 12 hour format only)

Example Code

Here is example code that could be implemented in the "SelectedTime" event:

```
// 12 Hour Time Format
Dim TmpDateFormatString as String = inHours+":"+inMinutes+" "+inAMPM
// Now I can do something with TmpDateFormatString
```

OR

```
// 24 Hour Time Format
Dim TmpDateFormatString as String = inHours+":"+inMinutes
// Now  I can do something with TmpDateFormatString
```

VII. How Do I Close This Chooser Now That It's Open?

I purposely left it to you, the coder, on how to handle dismissing or closing the chooser when finished. I knew that some coders would like to have a "Cancel" and "Close" button, while others may only want to enable the Keydown event for the "Escape key" or "Enter key". Either way, this is the reason that this is not built in by default.

The following is an example that accomplishes adding a "Close" button to this project along with resizing the proper window and containers

1. Resizing the DateTimeWindow

We will first need to resize the "DateTimeWindow" height to 286 in order to make room for our controls to fit.
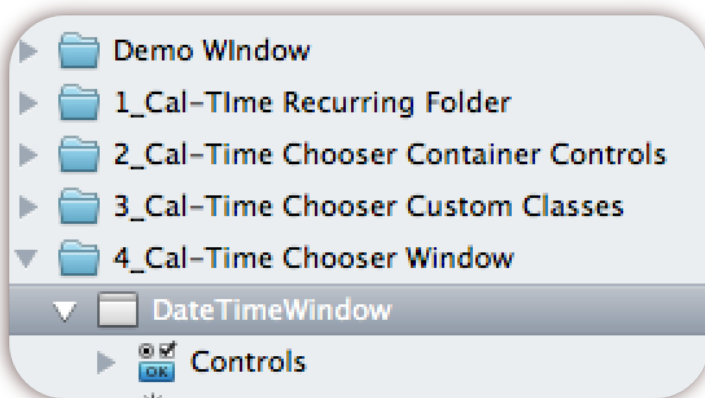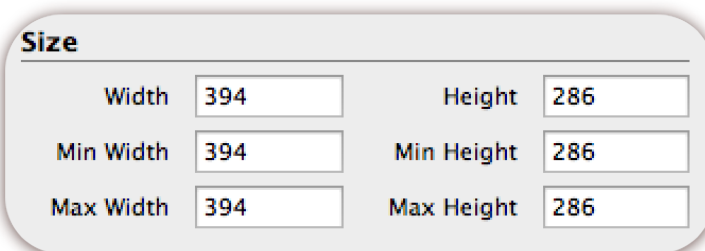

Figure 7.1

Figure 7.2

First change the height of the "DateTimeWindow" from 252 to 286 as shown above in *Figure 7.2*

2. Resizing the Date_Time_Container

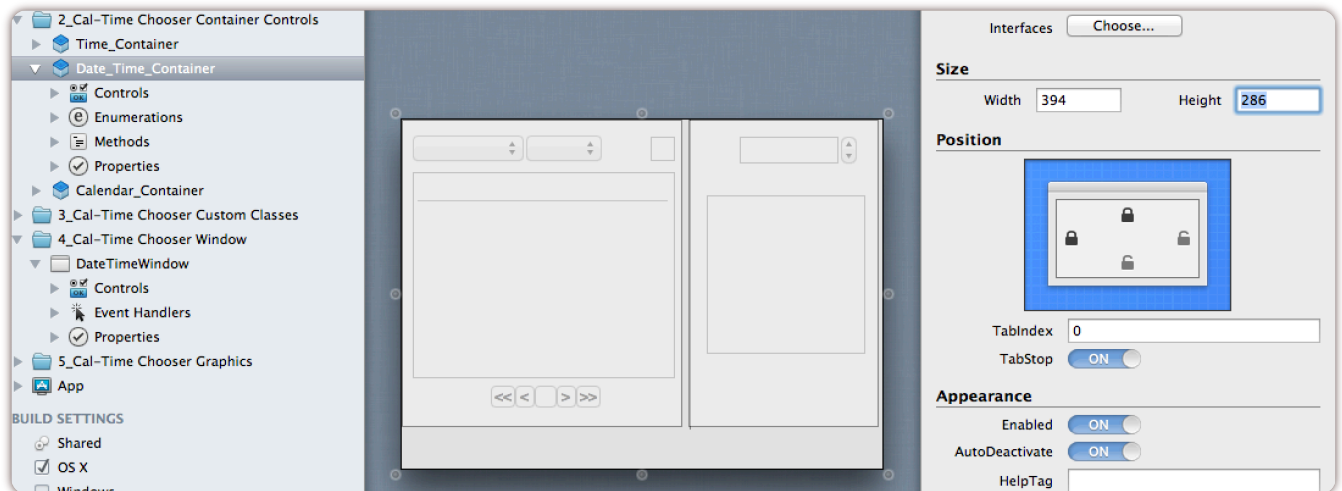Next we will need to resize the "Date_Time_Container" height from 252 to 286.

Figure 7.3

3. Change Setup Methods

When you select one of the following options "CalendarAndClock, ClockOnly, or CalendarOnly" during your implementation either one of the three below methods are launched. We must adjust their "Window.Height" line from 252 to 286
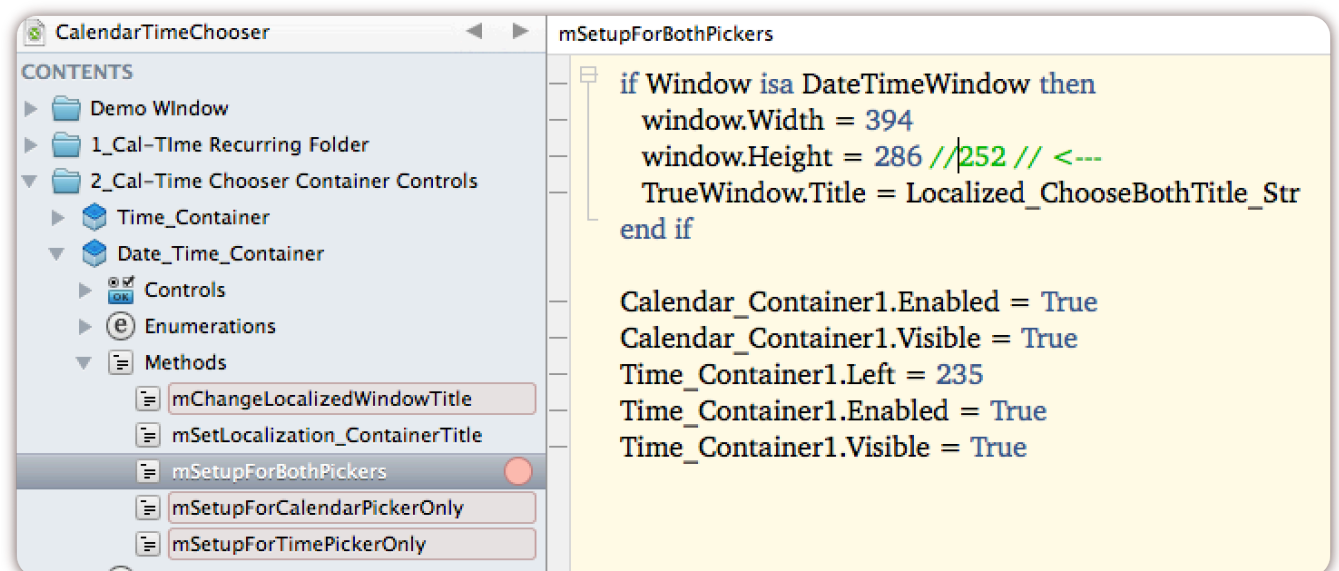
Change: mSetupForBothPickers

Figure 7.4

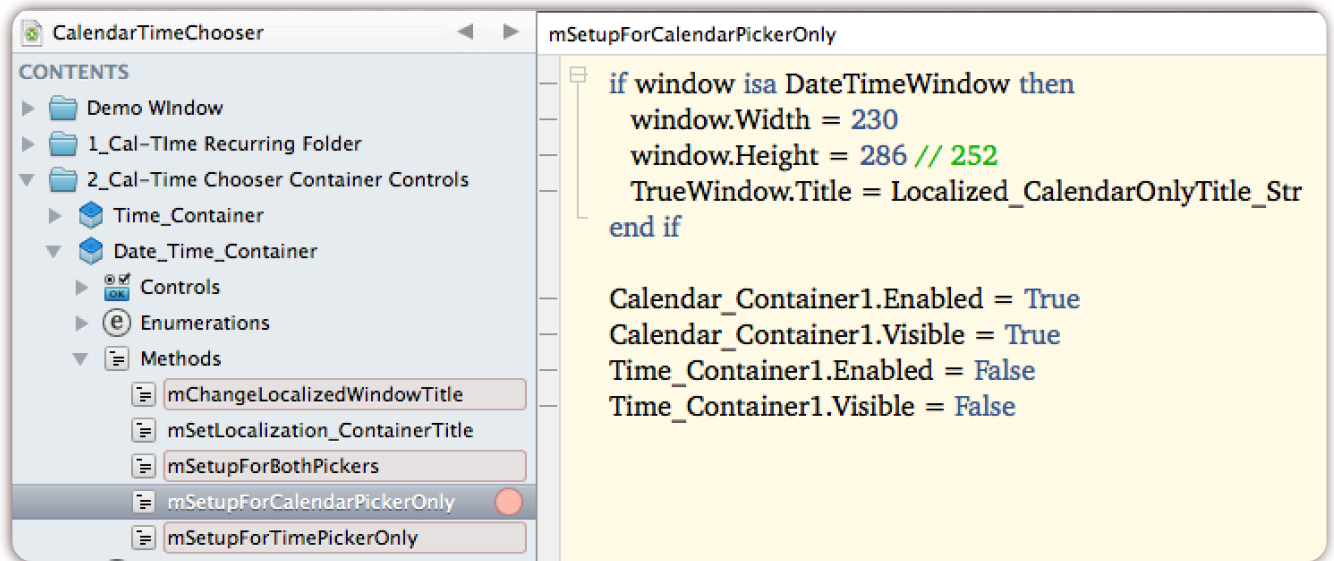Change: [mSetupForCalendarPickerOnly](#)

Figure 7.5
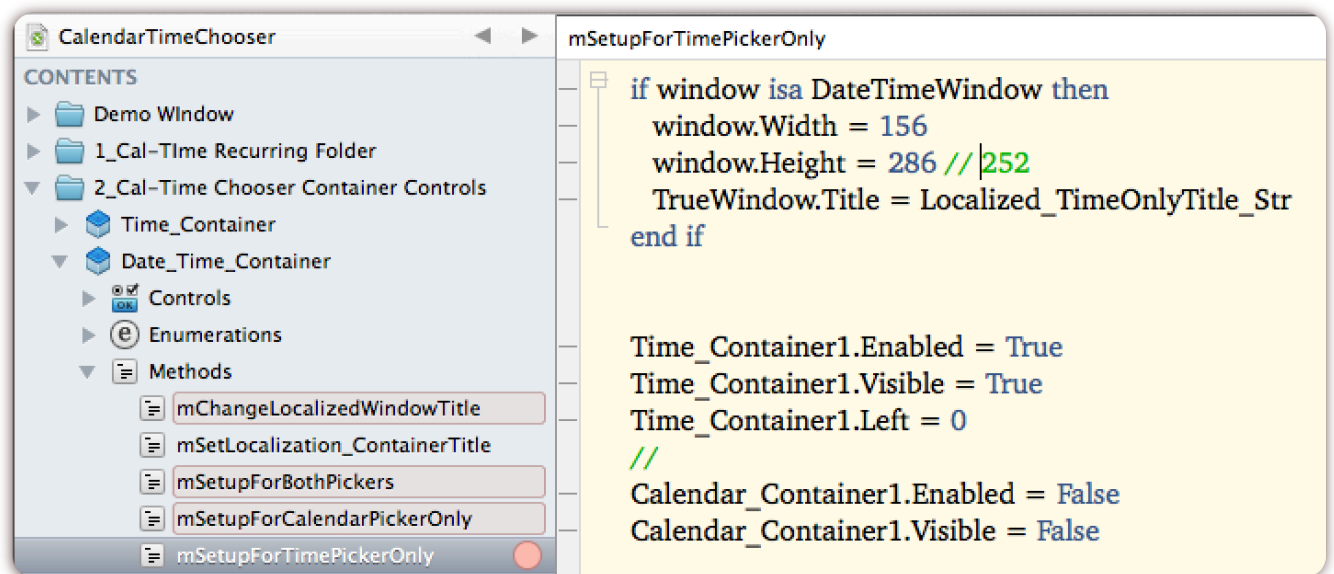
Change: [mSetupForTimePickerOnly](#)

Figure 7.6

4. Add a new PushButton

In the Xojo IDE we will need to drag a new PushButton onto the project so we can turn it into the "Close" button for the Calendar/Time chooser tool. After all we need to close this after the user is finished right? ☺

1. In the Xojo IDE prepare to drag the "PushButton" control onto your project

2. Place the "PushButton" control onto the "Date_Time_Container" control (Looking on page 18 you see that this container is the Parent and a great place for this control)

3. Change the name of your new "PushButton" to "FinishedButton" and change its text to "Finished"

4. Add the "Action" event to the "FinishedButton"

5. To "Close" the control add the "Self.Close" code to the action event (see figure 7.7 below)
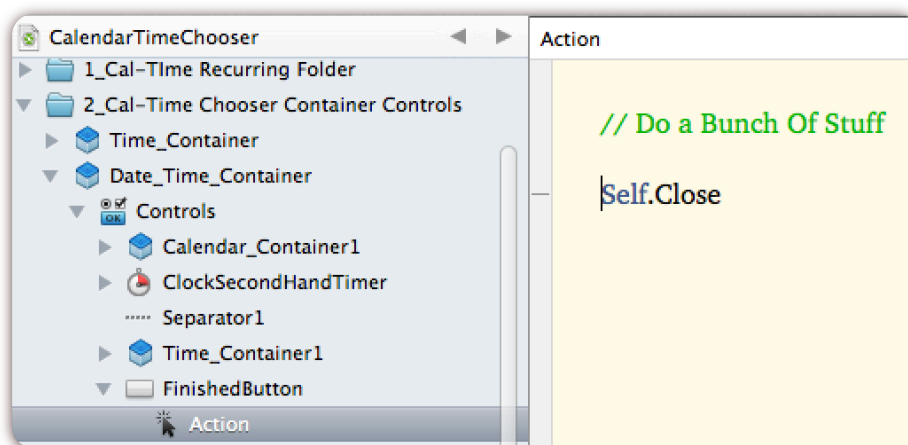

Figure 7.7

6. You are finished

VIII. Appendix: OOP Structure

The following illustration is a depiction of the object-oriented relationships between the windows, containers, and canvas classes.