



# Xojo Calendar and Time Chooser

## User Documentation

v1.05



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## I. Project Information

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

## II. 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)

### III. Quick Start Setup

#### Download Project, Copy folders, and Enable GDI

1. Download the project at <https://github.com/mikecotrone/CalendarTimeChooser>
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*)

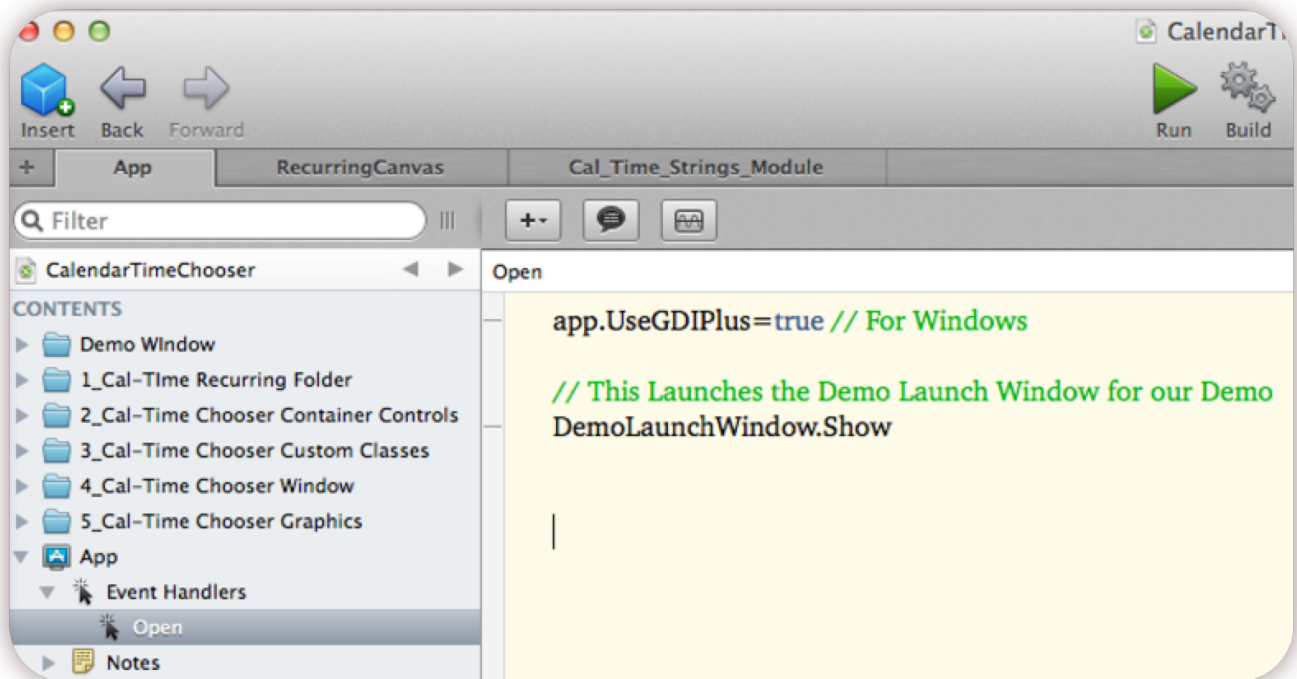


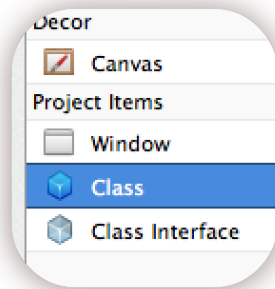
Figure 1. Depicts the six (6) folders that comprise the “Calendar and Time Chooser” project

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

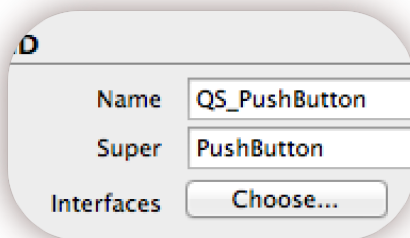
There are many ways to accomplish this step, but for this quick start example I will use a “Push Button” control that will be responsible for instantiating the “DateTimeWindow” and it’s options.

5. From the Xojo IDE drag a new “Class” to your project

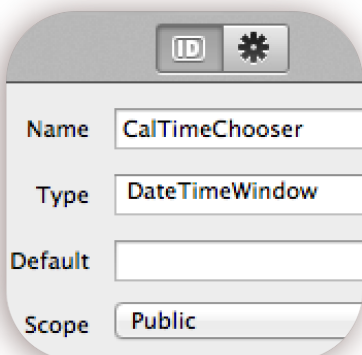


6. Name your new class “QS\_PushButton”

7. Change it’s super class to “PushButton”

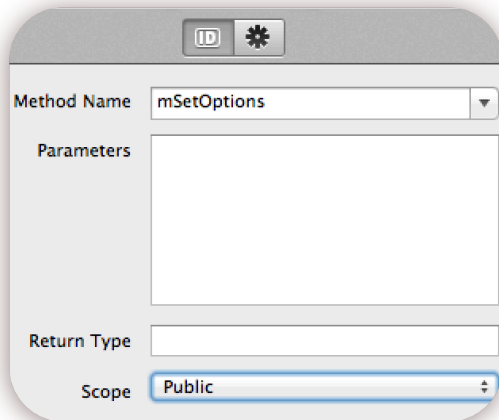


8. Add a new “Property” to the “QS\_PushButton” and name it “CalTimeChooser”



9. Change the “CalTimeChooser” property type to: DateTimeWindow

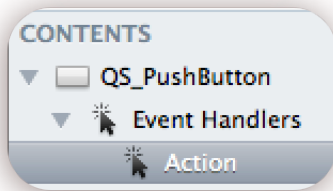
10. Add a method named “mSetOptions” to the “QS\_PushButton”



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 at [\[link\]](#))

```
// 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
```

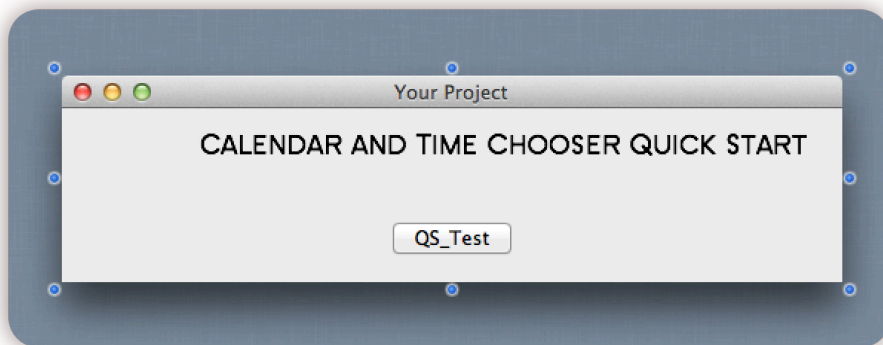
12. Add the “Action” event to the “QS\_PushButton”



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. <i>Choose <u>one</u> option</i>
Choice #1:	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements. <a href="#">CalendarAndClock</a>
Choice #2:	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements. <a href="#">CalendarOnly</a>
Choice #3:	CalTimeChooser.VisiblePickers=Date_Time_Container.PickerElements. <a href="#">ClockOnly</a>

Change Back Color of Chooser Window	
Description:	This option will change the back color of the chooser (all choosers). <i>Replace the RGB color with your desired color.</i>
Option:	CalTimeChooser.Date_Time_Container1.BackColor = <a href="#">RGB(239,239,239)</a>

### Clock / Time Options

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

### Clock Face Type

Description:	This option allows you to set which clock face is displayed graphically <i>Choose <u>one</u> option</i>
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. <i>Choose <u>True</u> or <u>False</u></i>
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 <b>False</b> the week begins on Sunday If <b>True</b> the week begins on Monday
Option 1:	CalTimeChooser.WeekStartsOnMonday = <b>False</b>
Option 2:	CalTimeChooser.WeekStartsOnMonday = <b>True</b>

### 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 = <b>True</b>
Option 2:	CalTimeChooser.IncludePrevNextMonthDays = <b>False</b>

### Localization

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

### Allow Multiple Calendar Date Selections

Description:	If <b>True</b> then “Single” selection allowed only If <b>False</b> then “Multiple” selection allowed
Option 1:	CalTimeChooser.AllowMultipleCalendarSelections = <b>True</b>
Option 2:	CalTimeChooser.AllowMultipleCalendarSelections = <b>False</b>

### 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 = <b>1975</b>

### 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 = <b>2175</b>

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

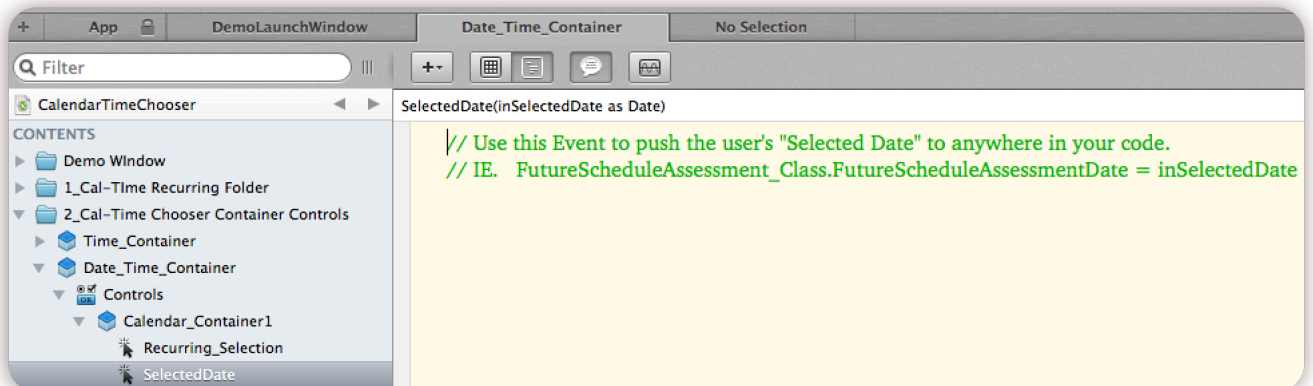
There are three custom event definitions, which will provide you the user selection results.

1. Calendar: Selected Date(s)
2. Calendar: Selected Recurring Type
3. Clock/Time: Selected Time

The following describes these events:

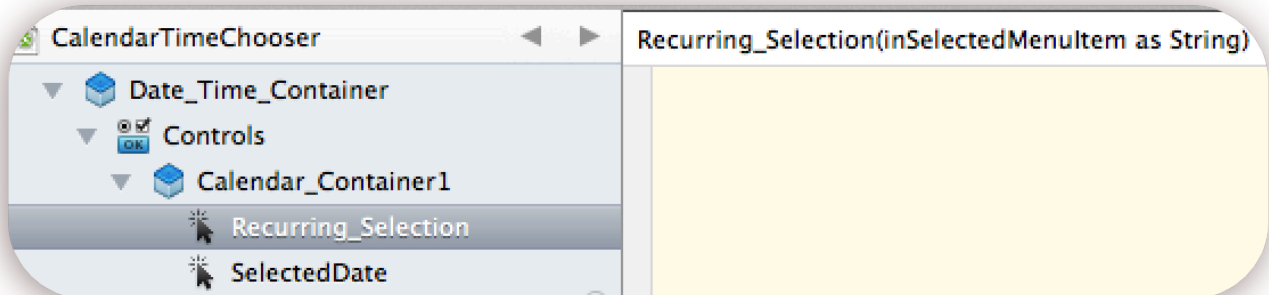
### Calendar Date(s) Selection

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



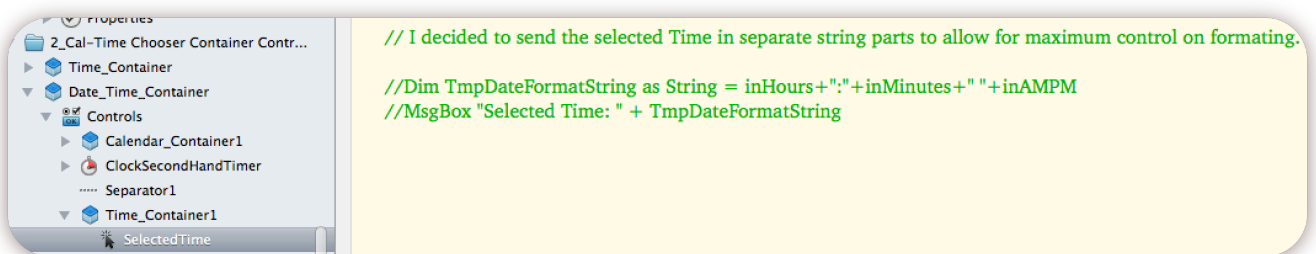
## Calendar Recurring Selection Type

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

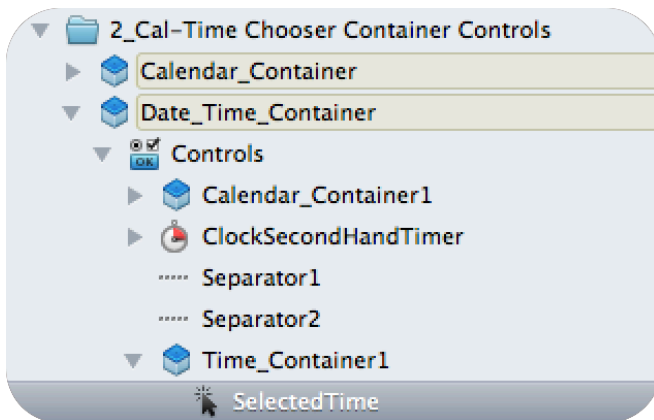


## User Time Selection

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



## 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 maximum flexibility for the coder to choose how they want to reassemble the time instead of being forced into an unwanted format representation.

The following parameters are as follow:

- 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 onto 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.

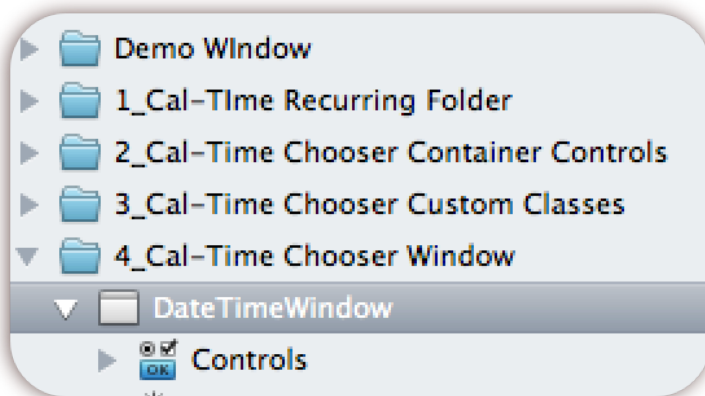


Figure 7.1

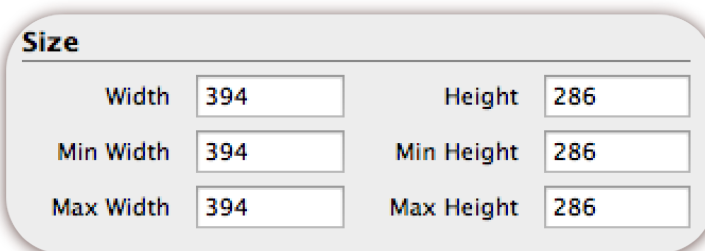


Figure 7.2

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.

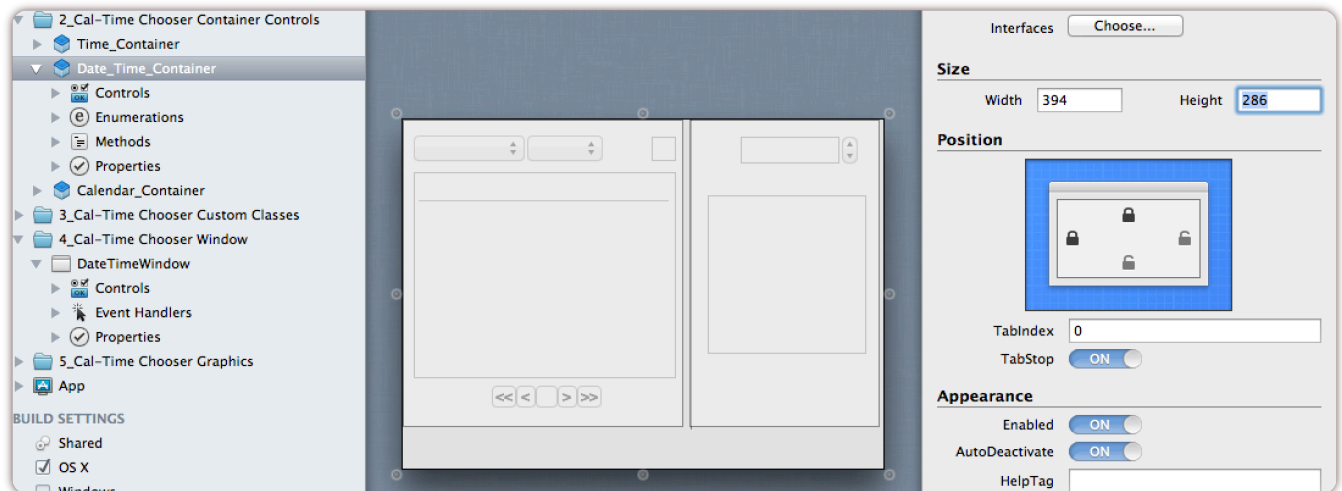


Figure 7.3

## 3. Change Setup Methods

When you select one of the following options “Both Choosers, Time Chooser Only, or Calendar Chooser Only” 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](#)

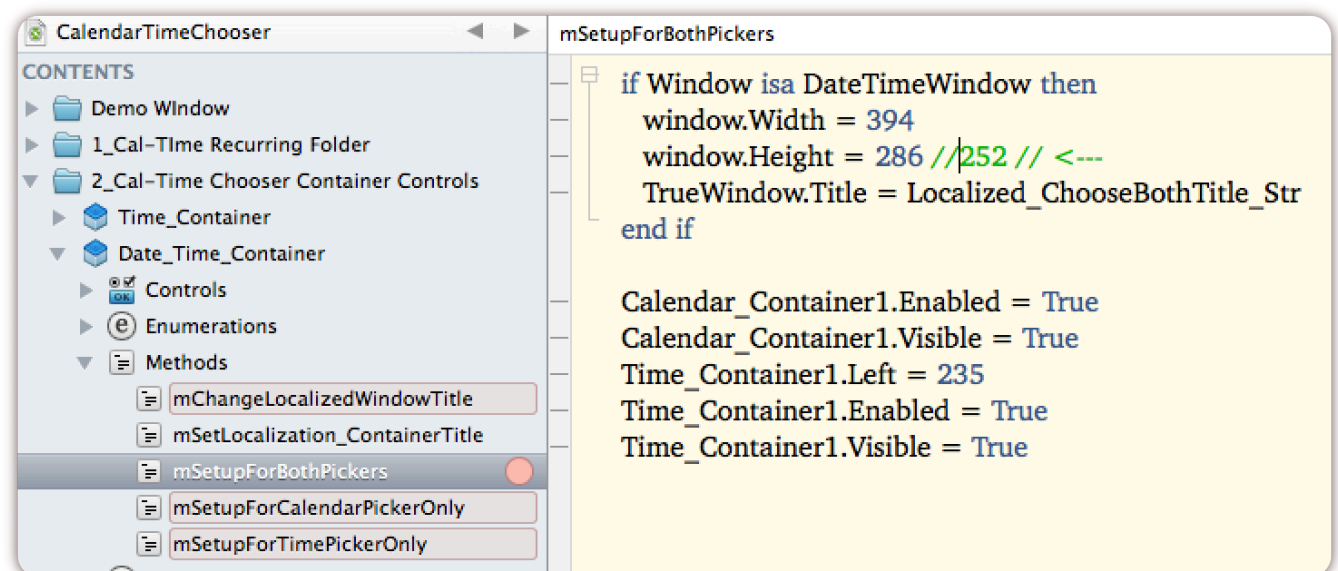


Figure 7.4

Change: [mSetupForCalendarPickerOnly](#)

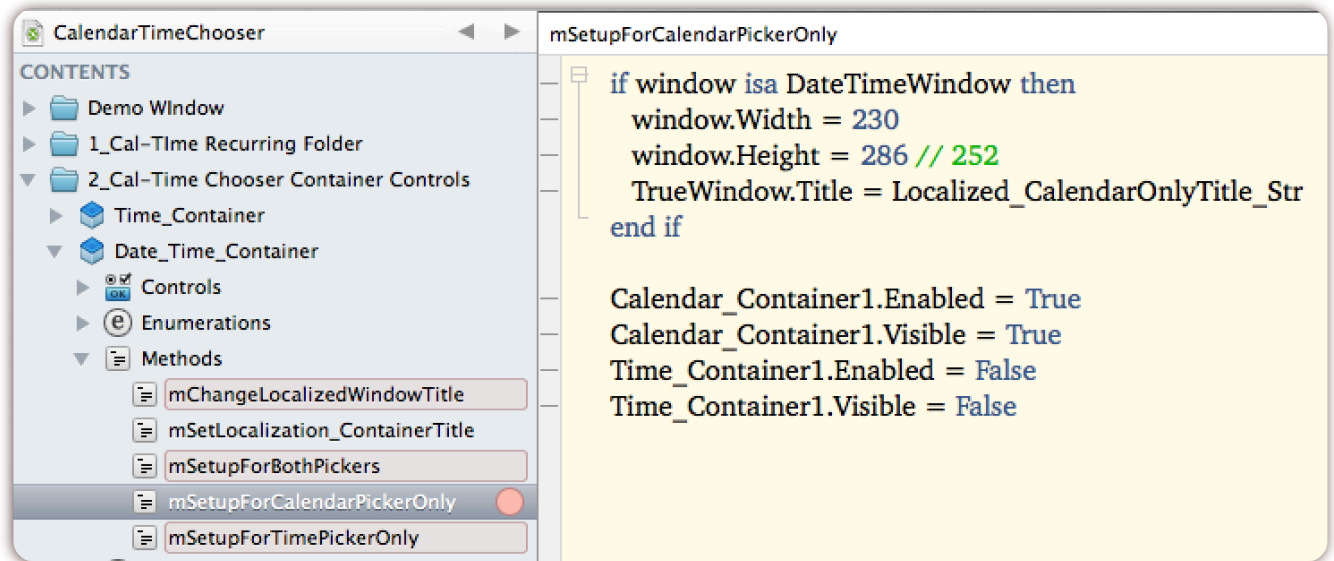


Figure 7.5

Change: [mSetupForTimePickerOnly](#)

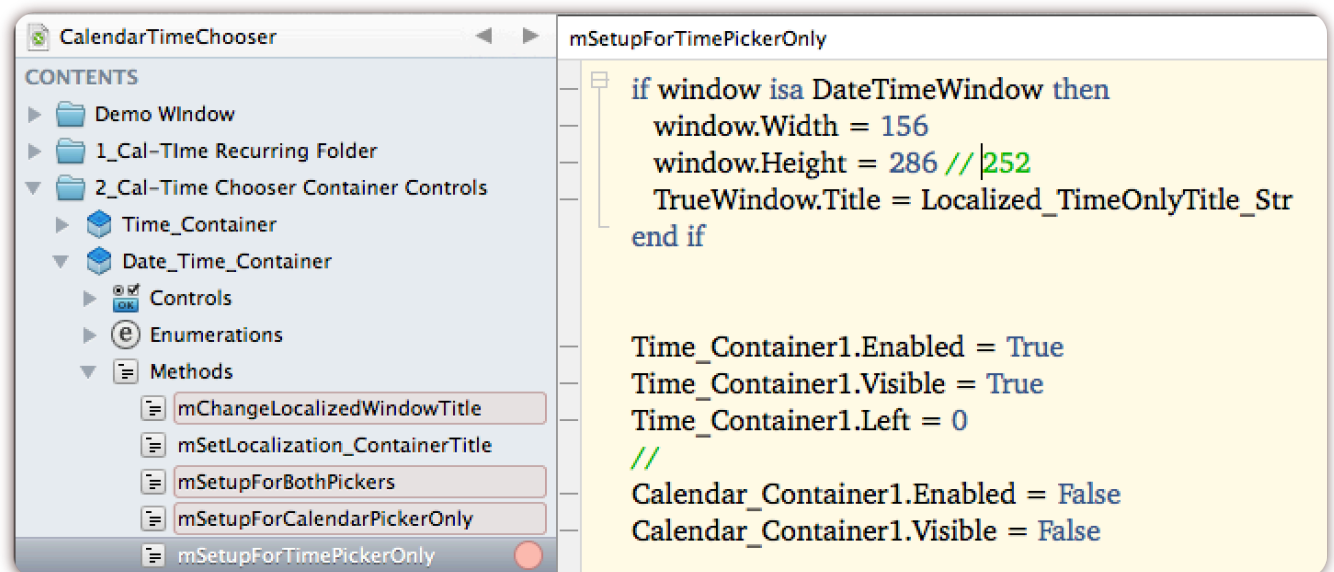


Figure 7.6

## 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)

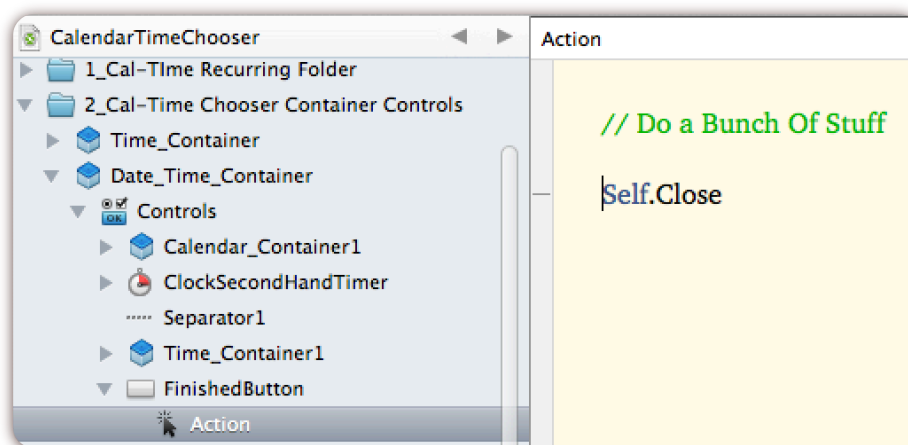


Figure 7.7

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.

