

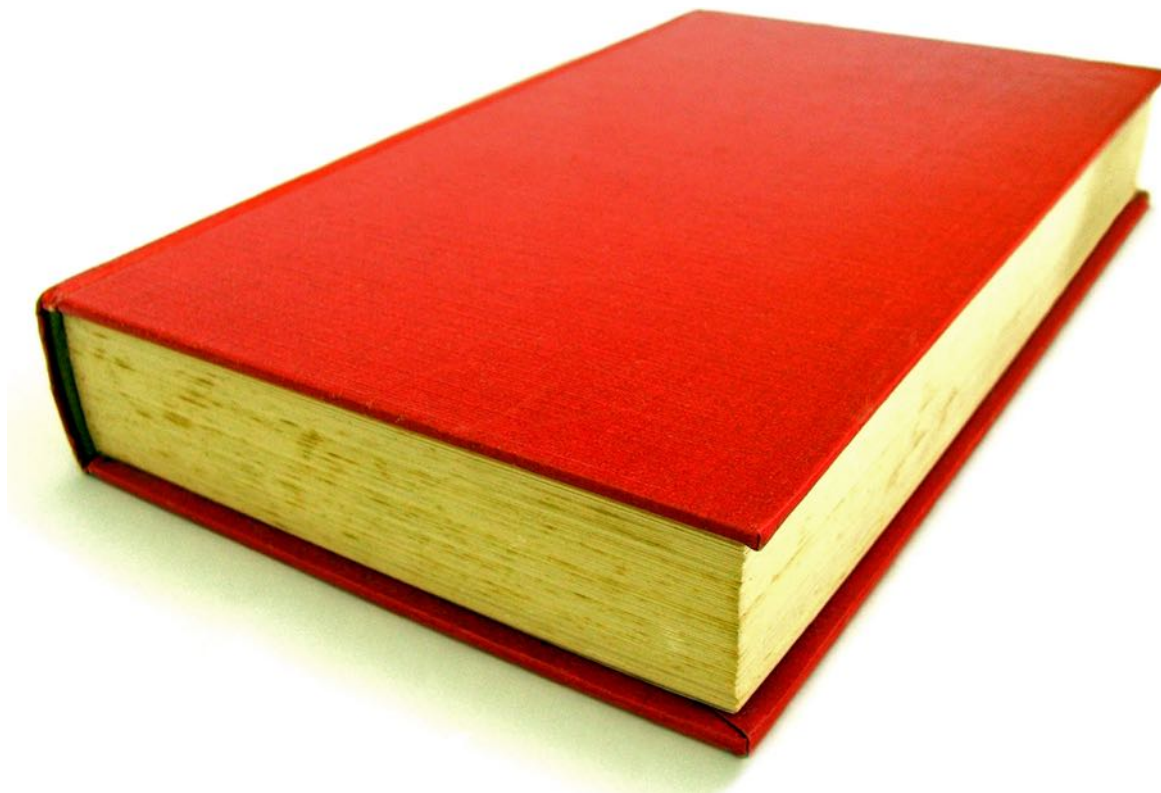


Introduction

CONTENTS

1. Foreword
2. Acknowledgments
3. Conventions
4. Copyright & License

Foreword



When you finish this book, you won't be an expert developer, but you should have a solid grasp on the basic building blocks of writing your own apps. Our hope is that reading *Introduction to Programming with Xojo*, will motivate you to learn more about Xojo or any other programming language.

The hardest programming language to learn is the first one. This book focuses on Xojo - because it's easier to learn than many other languages. Once you've learned one language, the others become easier, because you've already learned the basic concepts involved. For example, once you know to write code in Xojo, learning Java becomes much easier, not only because the languages are similar and you already know about arrays, loops, variables, classes, debugging, and more. After all, a loop is a loop in any language.

So while this book does focus on Xojo, the concepts that are introduced are applicable to many different programming languages. Where possible, some commonalities and differences are pointed out in notes.

Before you get started, you'll need to download and install Xojo to your computer. To do so, visit <http://www.xojo.com> and click on the download link. Xojo works on Windows, macOS and Linux. It is free to download, develop and test - you only need to buy a license if you want to build standalone apps.

Acknowledgements

Special thanks go out to Brad Rhine who wrote the original versions of this book with help from Geoff Perlman (CEO of Xojo, Inc).

We'd also like to acknowledge the Xojo community. We often hear your stories about how Xojo made it easy for you to learn programming or build an app or start your own business. You have made Xojo possible for over 20 years.

Conventions

Because Xojo can run on different operating systems and build apps for different operating systems, some of the screenshots in this book were taken on Windows and some were taken on macOS . One of the sample apps is web-based, so you'll see that its screenshots were taken in a web browser.

As you read this book, you also will notice different formats of text.

One format is code examples. Anything in a code example is meant to be typed into Xojo exactly as it appears on the page. A code example looks like this:

```
Var x As Integer
Var y As Integer
Var z As Integer
x = 23
y = 45
z = y * x
MessageDialog.Show(z.ToString)
```

Another format you will see is steps. A step looks like this:

- 1) **This is something you're supposed to do. You might be asked to set "Some Text" as something's caption. If that happens, type what's inside the quotation marks, but not the quotation marks themselves.**

This is a more detailed explanation of the step above. It will probably provide more details about the task you're working on.

Most of the code examples in this book are accompanied by a series of steps explaining how things work.

Finally, you may see a note. A note looks like this:

This is a note. The text in the note isn't absolutely essential, but it might provide some background information on the current topic.

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<https://www.xojo.com/learn/>

Hello, World!

CONTENTS

1. Chapter Overview
2. Getting Around
3. Running and Building
4. Hello, World!
5. Swatting Bugs

1.1 Chapter Overview

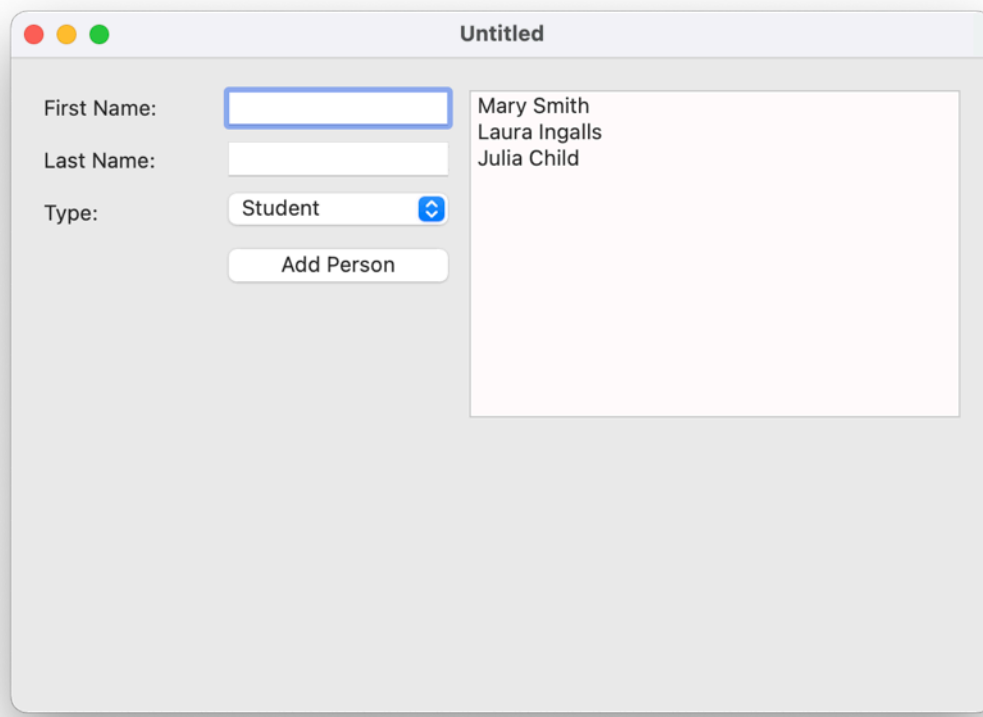
Welcome to Introduction to Programming with Xojo.

Xojo is an integrated development environment, or IDE, used to design and build other software applications. It uses a programming language which is also called Xojo. In very general terms, you as the programmer or developer enter your Xojo code into the Xojo IDE, which then compiles your code into a native app that can be run, independent of Xojo, on your computer or on someone else's.

This chapter introduces the IDE. You will learn how to navigate the IDE, how to customize it, how to organize your projects, and how to run and build your own applications. Some of the concepts introduced in this chapter may not make much sense at the moment, but they will be explained in more detail in later chapters.

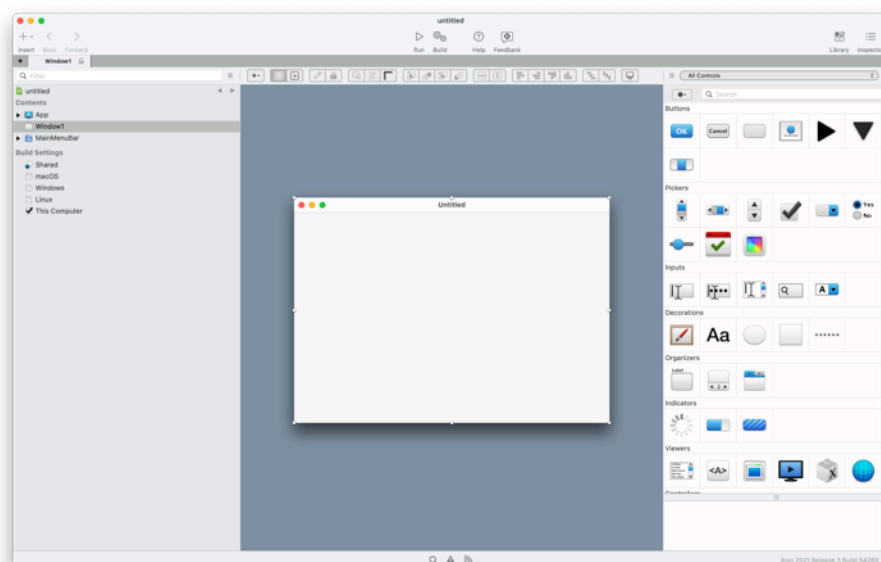
1.2 Getting Around

Begin by opening the Xojo application. Xojo launches with a Getting Started window showing some of the resources available to you as you learn Xojo. When you close this window, you will come to the Project Chooser window. This will prompt you to choose the type of new project. Select “Desktop” and press the OK button.



Xojo can build many different types of apps, including web apps, console (or command line) apps, iOS apps and apps for Raspberry Pi.

After you choose a project type, Xojo will create an empty project based on that template. The project is the file that stores all of the source code, user interface designs, and information about the app you are developing. The default empty desktop project looks like this:



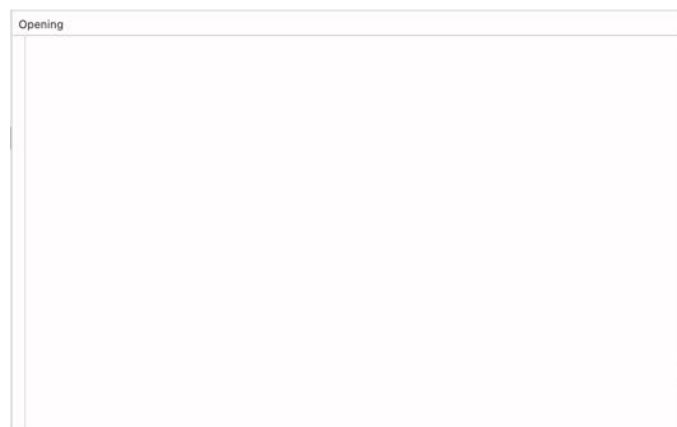
This main window is referred to as the workspace window. By default, it has three distinct areas. The larger empty area, also known as the pasteboard because you can paste things into it, holds an empty window. The window is where you can begin to design the user interface (UI) for your application. The left pane, known as the Navigator, holds a list of items in your project. The right pane is the Library, which is a list of controls that you can add to your interface (by dragging and dropping). By default, you won't see anything other than App, Window1, and MainMenuBar. Beneath the Contents you should see some options for Build Settings. Build Settings allow you to change the settings of the application you will be creating, such as its name, version number, and icon.

Immediately above the window and pasteboard is the command bar. Here is where you'll find buttons for common commands related to what is being shown. In the case of a window, you'll see an add button, alignment buttons and others.

Above the command bar at the top of the workspace window is the toolbar. The two rightmost buttons toggle the visibility of the Library and the Inspector. Remember the Library is a list of controls and the Inspector allows you to modify the properties of whatever you have selected in the pasteboard. For example, if you drag and drop a button from the Library to your interface, you can select that button and use the Inspector to change its caption or physical size.

All together, this view is called Layout View. In Layout View, you visually design the look and feel of your application. Another important view is Code View. This is where you will enter the Xojo source code that controls the behavior and functionality of your app. The easiest way to get started in Code View is to use the Insert Menu to insert an Event Handler. Events will be discussed in much greater detail in a later chapter, but for now, you need to know that events allow your application to react to actions taken by your application's end users as well as actions that the computer or operating system may cause while your application is running. Select Event Handler from the Insert Menu and choose Opening in the list of events that appears and click the OK button.

Notice how the interface changes. The pasteboard disappears and is replaced by the code editor, while the Navigator and Inspector or Library remain visible. The name of the event that you're editing will be visible at the top of the code editor.



As you add components to your projects, you will see them in the Navigator, whether you are in Layout View or Code View. You may double click on an item in this list to open it for editing. You may also drag and drop these items to arrange them in the order you desire. The order in which you arrange these items will have no bearing on the performance or functionality of your built application; it is up to you to organize your project in a way that makes sense to you. You may even add folders and subfolders if you wish to organize your project in such a way. To add a folder, go to the Insert Menu and choose Folder. You can then drag and drop other project items into the folder.

The Insert Menu is one that you will be using often as you build more and more complex applications. In addition to folders, you will use it to add classes, windows, and other components to your projects. Once again, these concepts will be explained in later chapters.

1.3 Running and Building

On the toolbar, one of the buttons that appears is the Run button. Clicking this button will tell Xojo to build a temporary copy of your project and execute it. You may also run your project by choosing Run from the Project menu. Although you have yet to add any code to your project, go ahead and run it now.

You will be presented with a blank window. While this may not seem impressive, quite a lot has already been accomplished. First, your project has been converted from a Xojo project file into an app that can be run on your computer. In addition, your app can respond to menu commands and keyboard shortcuts and react accordingly. For example, if you press Command-Q on Macintosh or Alt-F4 on Windows, your blank app will quit and you will be returned to Xojo.

Running your app in this way allows you to access the Xojo debugger, which will be covered later in this chapter. What it does not give you, however, is an app that you can share with other people. The app produced by running is temporary and is only intended to be used for testing and debugging.

To create an app that can be shared, you need to build your application. The Build button is found directly to the right of the Run button on the toolbar, or you may choose Build Application from the Project menu.

Remember, you can run your projects with the free version of Xojo, but you must purchase a Xojo license in order to build your apps.

If you build your project now, you will have an app that can be run, but it will have a rather generic name and icon and will not do much of interest at this point.