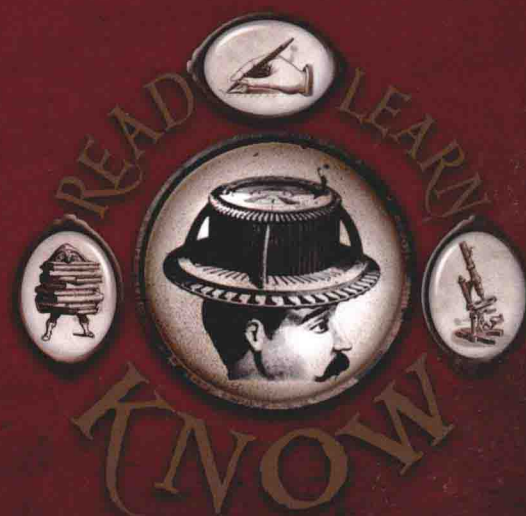


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WINDOWS® 8.1
APP DEVELOPMENT

REBECCA M. RIORDAN

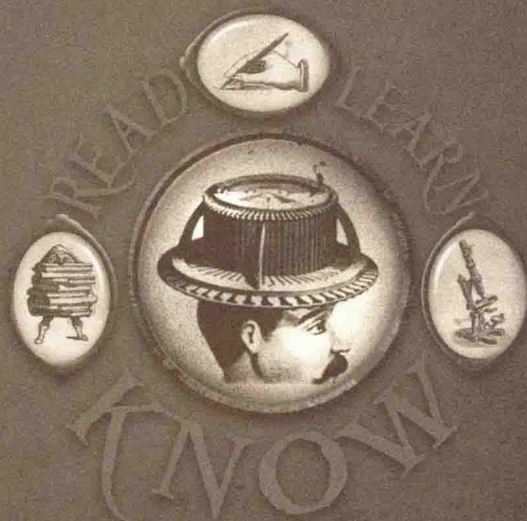


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ISBN-13: 978-0-672-33616-4

ISBN-10: 0-672-33616-2

Library of Congress Control Number: 2014933265

Printed in the United States of America

First Printing July 2014

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WE WANT TO HEAR FROM YOU!

As the reader of this book, you are our most important critic and commentator. We value your opinion and want to know what we're doing right, what we could do better, what areas you'd like to see us publish in, and any other words of wisdom you're willing to pass our way.

We welcome your comments. You can email or write to let us know what you did or didn't like about this book, as well as what we can do to make our books better.

Please note that we cannot help you with technical problems related to the topic of this book.

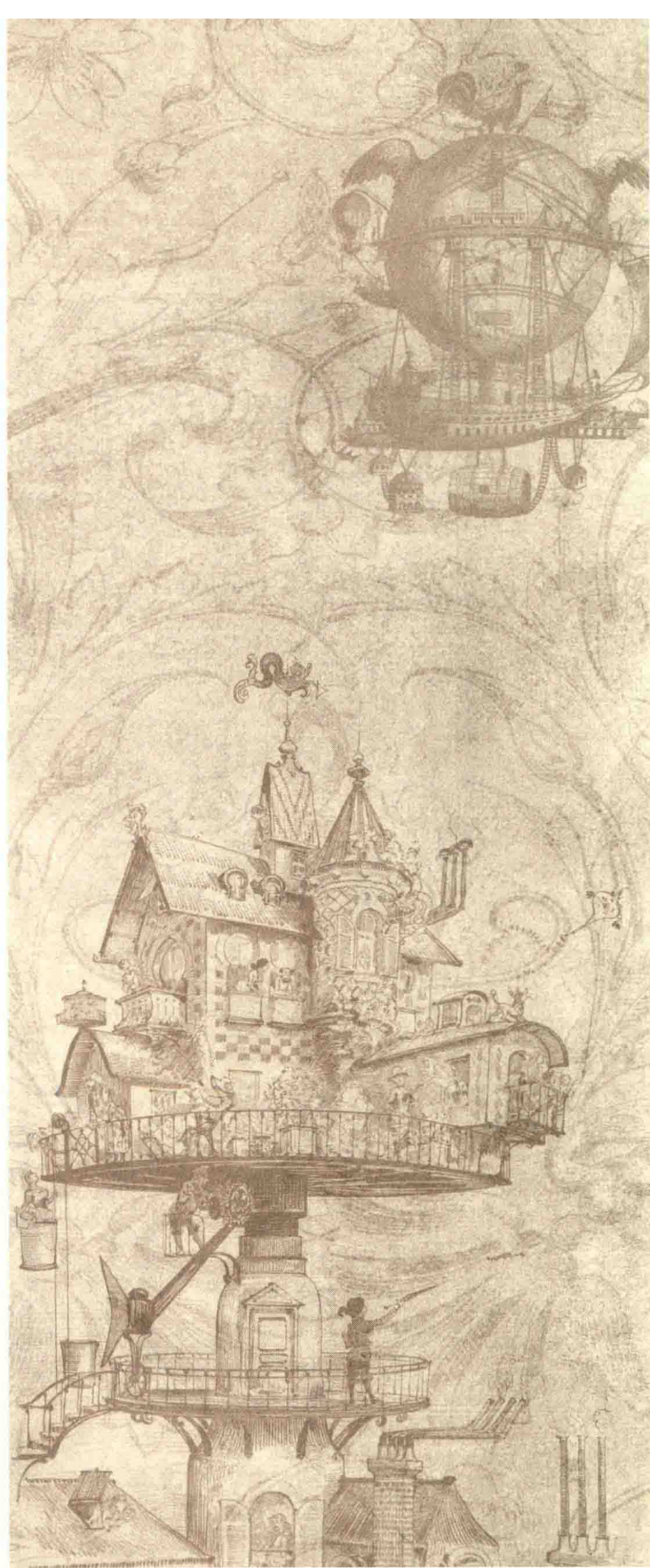
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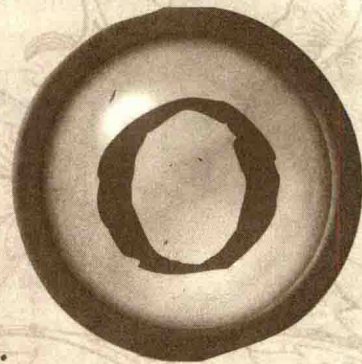
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 - Determine the requirements
 - Design the UX
 - Design the Data Structures
 - Create the Graphics Assets
 - Implement the System

Put all you've learned to good use by building a complete application.



Welcome!

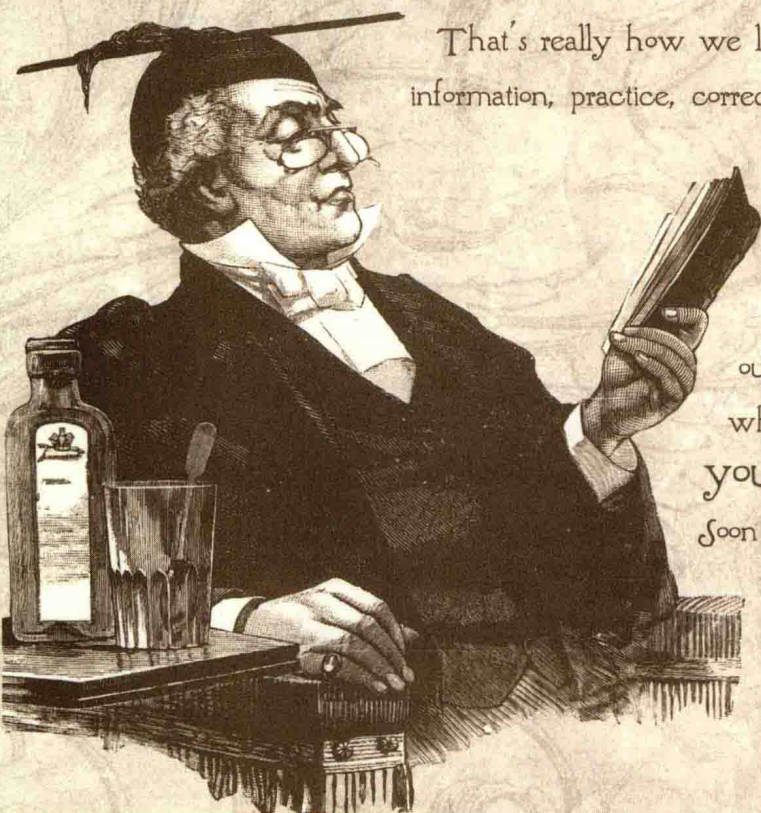
I'm so glad you stopped by.



This book doesn't look much like other technical tutorials, does it? Well, for once, looks aren't deceiving, because Fluent Learning books aren't much like other technical tutorials. **We don't want to teach you things. We want to help you learn things.** We've done a lot of research into how people learn, and it turns out that talk, talk, talking at you (like most books do) isn't wrong, exactly, but it makes learning harder than it needs to be.

Did you learn to speak your native language by reading a book? Of course not; that's not how people learn. You heard people speaking, tried it for yourself, and then corrected yourself when other people pointed out your mistakes. Sure, you studied grammar and learned new words in school, but the basics ("More milk, Mommy") you learned by yourself. Now, barring accident and illness (or one-too-many mojitos), you're not likely to forget it, are you? And you don't have to think about the mechanics of speech, just what you want to say.

That's really how we learn everything. We gather some initial information, practice, correct our mistakes, and then add to our basic knowledge. That's not what happens in most tutorials, but that's how Fluent Learning works. I'll give you enough information to get started, give you some exercises to figure out how to do something, and then elaborate on what you've learned. Simple, natural, and if you do the work, you will learn. Soon you'll be able to concentrate on what you want to do, not how to do it, just like when you learned to speak. (But it won't take as long as learning to speak well.)



FLUENT LEARNING BECAUSE...

WE WANT TO LEARN, NOT LISTEN

Our minds like to learn anything the way we learned our native language: by trial & error. Instead of reading a lot of words, you'll do a lot of exercises. Real exercises, that make you think, not walkthroughs that tell you what to type. (But we'll have a few of those, too.)



PUT ON YOUR THINKING HAT

Can you write the code to set a Color named MyColor to each of the following colors?

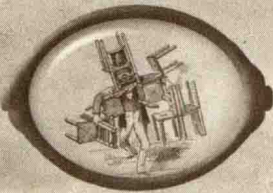
A pure blue at 50% transparency

A purple with R=127, G=68 and B=182, fully opaque

The color named CadetBlue in the Colors class, which has R=95, G=158, and B=160, with 75% transparency

WE WANT TO WORK, NOT PASS TESTS

You want to be able to apply what you learn in the real world, not just pass a test on the subject. To help you do that, the On Your Own exercises invite you to make those connections as part of the learning process.



ON YOUR OWN

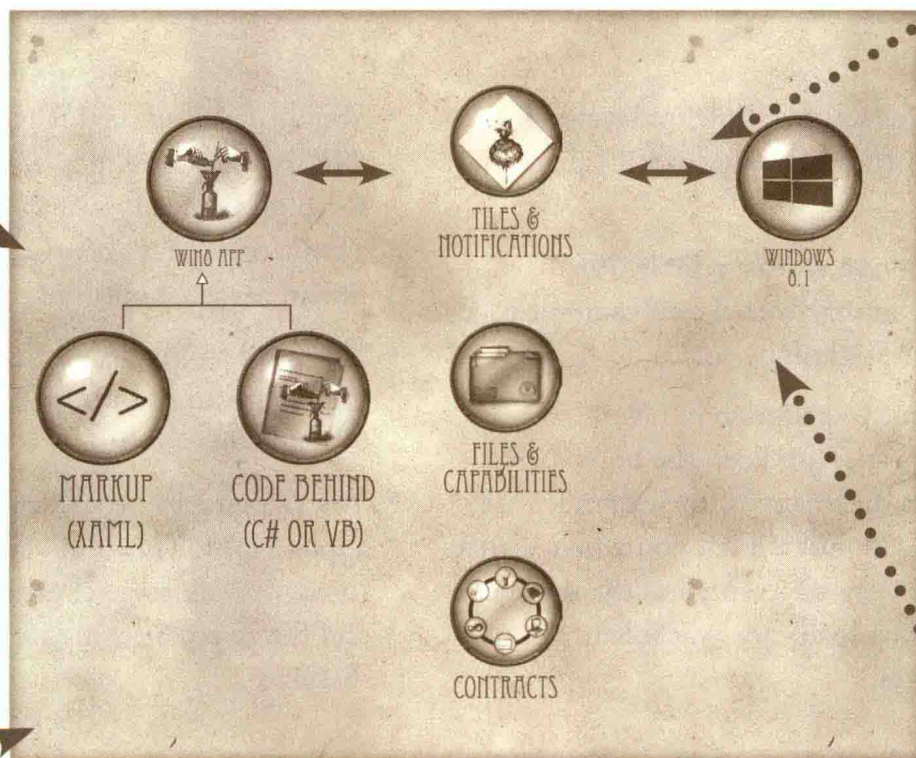
Can you think of situations in which each of the panels might be useful as a layout root?

WE'RE ARTISTS, NOT FREIGHT TRAINS

Our minds don't chug along from point A to point B on a single track. Like any artist, we start with a sketch and then fill in the details. Rather than presenting all the information about a topic at one time, we'll start simply and add the details as you have more context. That way they'll stick.

WE THINK IN PATTERNS, NOT STRAIGHT LINES

Our minds work best with patterns, not individual facts. We'll always present new ideas in context to help you understand how all the pieces fit together.



WE DON'T LIVE IN A WORLD OF WORDS

Our minds absorb information through all our senses, not just speech. We'll use graphics, context, and rhythmic language to appeal to sight, touch, and sound.

WE WANT A MAP, NOT A MYSTERY

Our minds are constantly evaluating progress, but that's not possible unless we know where we're going. We'll use lots of signposts so you always know where you are and where you're headed.

THIS BOOK ISN'T FOR EVERYONE

I really hate it when technical books announce that they're for "everyone", don't you? It can't possibly be true, and saying that it is doesn't sell any more books in the long run. It just irritates people who get confused (because the book's too advanced for them) or bored (because the book's too basic). I don't want to irritate or bore you, so I'll say it plainly: This book isn't for everyone.

THIS BOOK **IS** FOR YOU IF:

- You want to learn how to develop for Microsoft's new Windows 8.1 platform, and...
- You've done at least a little .NET programming, even if you've never used WPF or Silverlight, and...
- You want to program in C# or Visual Basic. (To keep the book size manageable, many of the examples are only in C#, but I'll tell you when Visual Basic is very different, and the sample code downloads are available in both languages.)

THIS BOOK PROBABLY **ISN'T** FOR YOU IF:

- You've never worked with .NET at all. .NET programming is big and complex, so you'll probably want to start with a basic tutorial. (There are two in the Fluent series...hint, hint, nudge, nudge...)
- You want to develop using JavaScript. I'll only be talking about development using C# and Visual Basic.
- You're going to be writing desktop applications. This book concentrates on the new Windows 8.1 Store applications, and the two platforms are still pretty distinct.

THIS BOOK **MIGHT** BE FOR YOU IF:

- You're a WPF or Silverlight wizard and just looking for the differences between those platforms and developing Windows Store applications. You'll find that information here, but you might find yourself a bit bored looking for it.
- You want to write the next Adobe Photoshop. This book will give you the basic information you'll need about the XAML part of an app like that, but to do something that low level effectively, you'll need to work in DirectX too, and we won't be talking about that toolkit.

WHAT YOU'LL LEARN

You and I both know that you won't be an expert Windows 8.1 developer after reading one book, no matter how good it might be. You won't be an expert after reading two books, or three, or a dozen. Of course, a good book can help, but the only way to build real expertise is to write a bunch of applications, make a bunch of mistakes, and fix them. It takes time and experience, and I can't give you that. But I can get you started.

AFTER YOU FINISH THIS BOOK YOU WILL:

- Be able to create a user interface for a Windows 8.1 store app declaratively using XAML
- Be familiar with the WinRT XAML UI widgets and how to control and customize them
- Understand the Windows 8 touch language
- Know how to provide live updates to your users via Tiles and Notifications
- Cooperate with other Metro applications via contracts and extensions

BUT YOU WON'T:

- Be an expert in XAML programming (unless you already are one)
- Be a graphic designer—although we'll be discussing some design issues, this book isn't a substitute for art school
- Know everything you need to know to sell your applications in the Windows Store. In fact, we won't be talking about selling your apps through the Store at all, because it's both pretty straightforward and a moving target.

WHAT YOU'LL NEED

You don't need much to get started. This book, of course. (You did buy this copy, didn't you?) And a copy of Visual Studio Express 2013 for Windows. You'll also need something to write with, because not all of the exercises are done at the computer, and you might want a notebook of some kind if you don't like writing in books.

You'll also need a machine running Windows 8.1. It doesn't have to have touch capability (although that's very cool, of course).

GETTING VISUAL STUDIO 2013

There are several different levels of Visual Studio. If you've already bought and installed a copy, you're good to go. If you haven't, you can use the free Visual Studio Express 2013 for Windows, which you can download from the Microsoft Web site. Here's what you need to do on the day I'm writing this, but Microsoft has been known to move things around, so be forewarned: You may have to hunt around a bit.

1. From the main Microsoft Web site (www.microsoft.com), choose Visual Studio from the Products menu.
2. Click the "download" link that will be somewhere on the page. (They change this landing page a lot, so you may have to hunt for it.)
3. Choose Visual Studio Express 2013 for Windows. Just follow the instructions on the page to download. When you install Visual Studio, you'll also get the Expression Blend design tool. We'll be talking about Blend a little bit in Chapter 10.
4. The first time you launch the product, you'll be asked to register it (once you register online you'll be given a product key) and to get a developer license. The developer license is free, but you'll need to renew it periodically. (If you want to publish an app in the Store, you'll need a developer account that does cost money. The exact amount varies depending on your type of account, so check the Microsoft site for details if that's what you want to do.)

GETTING THE SOURCE CODE

You won't need to download the source code in order to do the exercises in this book, but it's available on the Web at informit.com/title/9780672336164

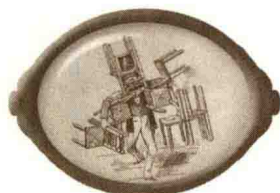
HOW IT WORKS

If you've read this far, you already know that you're not going to be able to just sit back and listen to me talk at you. The core of this book is the exercises, and if you're going to learn, you'll need to work through them. Really do them. You can't just think about the answers. You need to sit down at the computer or pick up your pencil and do the work. Here's a taste of some of the things you'll be doing:



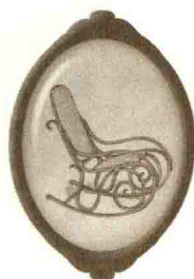
THE THINKING HAT

Most of the exercises in the book tell you to Put on Your Thinking Hat. I'll give you answers to these exercises, but it's really important to understand that you won't always get the answers completely right, and **that's okay**. It doesn't mean you're not "getting it". It means that I don't always play fair, because you learn as much (or more) from your mistakes.



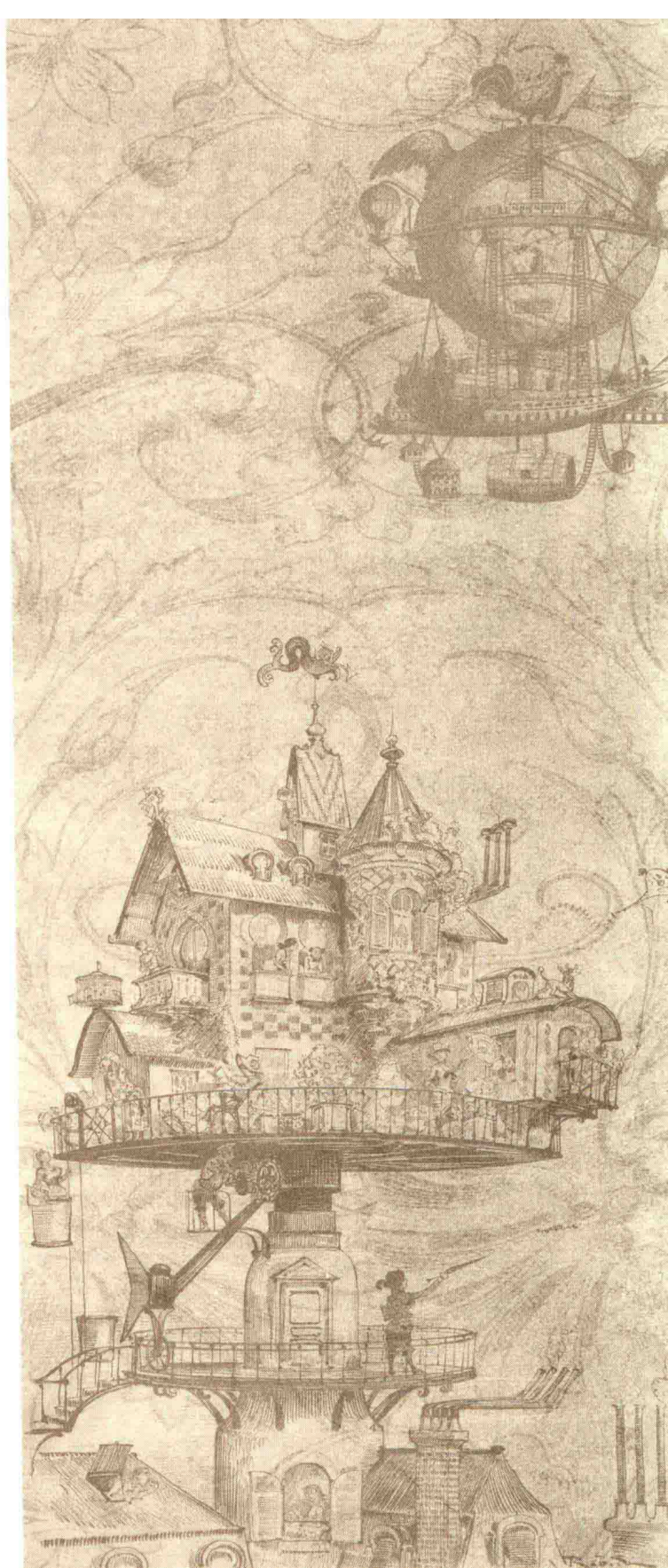
ON YOUR OWN

Some exercises ask you to do things on your own, and I won't give you the answers. Sometimes there really aren't answers; they're just things you need to think about. It might be tempting to put these aside for "later", but it's best if you don't. They're part of the learning process.

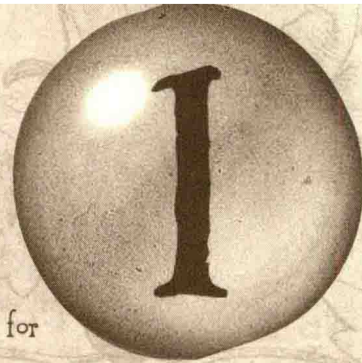


TAKE A BREAK

From time to time I'll suggest that you take a break before you move on to the next section. Of course you can take breaks whenever you like, but these suggestions aren't because I think you might be getting tired. I make these suggestions because learning research tells us that if you stop for 15 minutes or so before you review, you're much more likely to transfer information to long-term memory. (In other words, you'll actually learn it.)



WELCOME TO WINDOWS 8.1



On the first of June, 2011, Microsoft posted a "First Look" video on YouTube in which Jensen Harris, Director of Product Management for the Windows User Experience, implied that applications for the new Windows 8 platform (codenamed "Metro") could only be written in HTML and JavaScript. Microsoft, for reasons known only to itself, refused to comment.

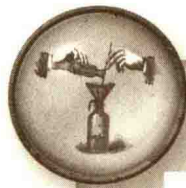
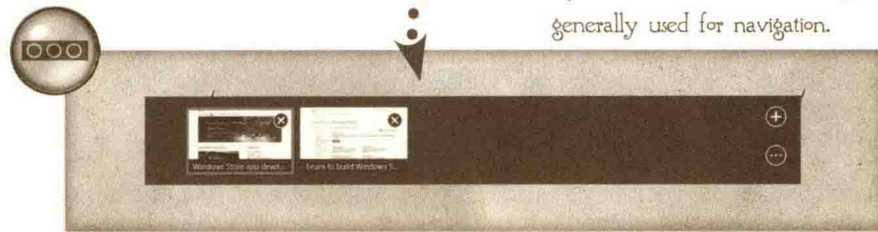
To say that the video set off a **firestorm** is something of an understatement. Developers all over the world canceled new XAML projects and started reconsidering their career choices. (Can you imagine how frustrating that must have been for the WinRT XAML team inside Microsoft?) Even when the Developer Preview reassured all of us that our existing XAML and .NET skills would translate to the new environment, well, let's just say that the response wasn't (and still isn't) uniformly enthusiastic. Some people have decided that the Windows 8 Start Screen is inappropriate for non-touch systems (it took about 2.3 milliseconds for someone to post a registry hack that allows you to boot Windows 8 directly to the desktop), and others believe that the platform is only suitable for toy applications on tablets.

Perhaps they're right. Or perhaps as developers and application designers, we just need to think differently about how we structure our applications. But one thing is certain—Microsoft is a major player, and that makes Windows 8 too big to ignore. But since you're reading this, you know that. I hope this book will help you make up your own mind.

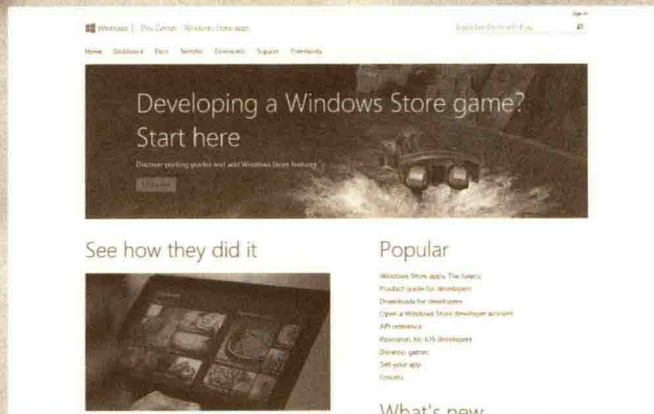
In this chapter, we'll start by taking a look at the Windows 8.1 platform. We'll try to assign some tangible meaning to those marketing terms Microsoft is using to describe its "re-imagined Windows", and we'll look at some of the functionality that Windows 8.1 gives you for free.



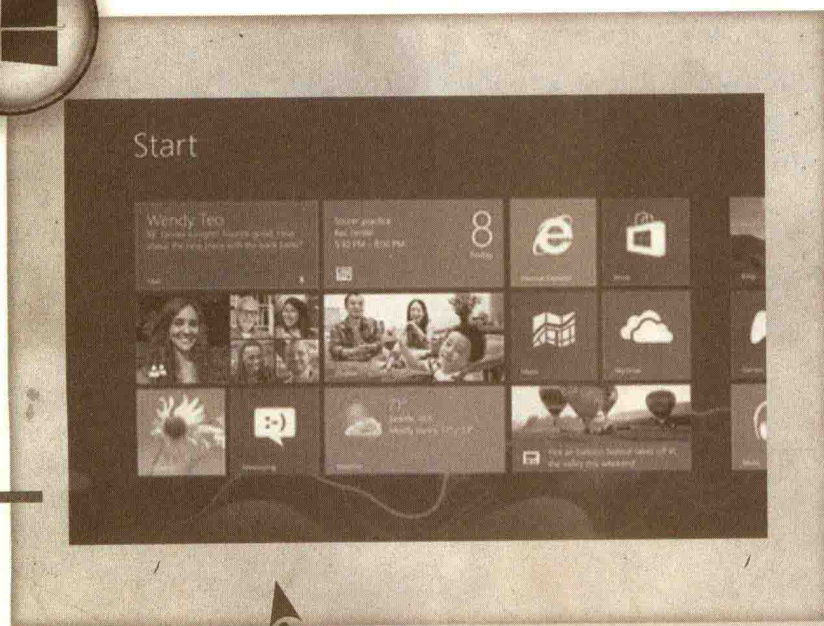
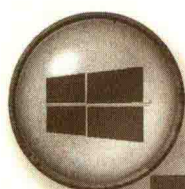
An app can have two menus that are displayed when the user swipes from the top or bottom of the screen. The top one is generally used for navigation.



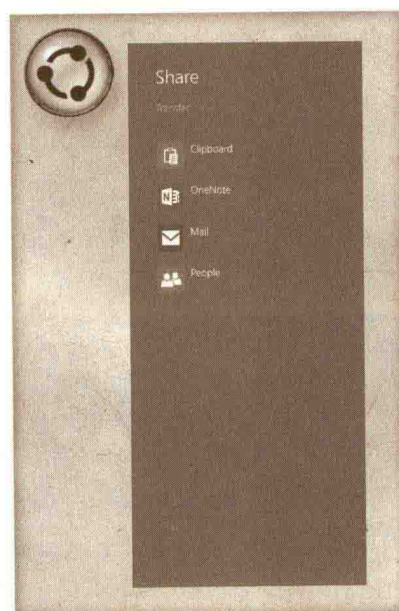
The app itself is CHROMELESS—it consumes the full screen.



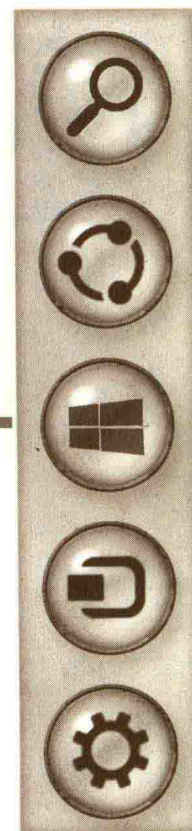
The bottom menu contains your system commands.



The Start Screen is the hub for all your applications.



CONTRACTS like Share allow apps to interoperate.



The CHARM BAR provides access to contracts.