Part I

Introducing Oracle Application Express

Chapter 1: Welcome to Oracle!

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Welcome to Oracle!

Welcome to the world of Oracle technology. The book you are holding will give you all you need to start creating powerful, flexible, highly productive applications for yourself and your users. And the software included with this book will give you the path to even greater capabilities through a broad range of Oracle software. You are going to like it here.

This chapter will introduce you to the core technology you will be using to create applications, Oracle Application Express. The rest of the book will walk you through the process of creating an application with a hosted version of this product, finishing up with information on expanding your environment with packaged applications and migrating existing applications to your new platform.

But first, a few basic questions and their answers.

What Do You Need?

You need to be able to respond to the needs of users. And you need to respond rapidly, which means your development platform of choice has to be highly productive. You also need to retain that productivity over the life of these applications, as demand for new applications and functionality never seems to slow down.

These requirements are the minimum — your development platform must deliver in these areas. You cannot even consider any options that would impede the velocity of your work.

Why Don't You Have It?

But these table stakes are not, by themselves, enough. These requirements have led, over the years, to an approach that frequently used tools and platforms that were designed for personal use, such as Microsoft Access or spreadsheets. Initially, these user- and developer-friendly tools seemed like a great idea — a good developer could create applications very rapidly.

The problems arose after that initial deployment. Because of inherent limitations with the scalability and functionality of these tools, organizations ended up with a mess — hundreds of

different applications, and dozens of sources of data and versions of the truth. This jumble of systems led to enormous maintenance requirements, which created a lot of extra overhead. Sometimes these overhead requirements were so high that standard practices were just abandoned, leaving critical data unprotected and insecure — or led to the development of even more systems, compounding the problem even more. Couple this with increasing regulatory demands, and you have a recipe for an unmanageable mess that could potentially put mission-critical data at risk.

This brief description only summarizes the acute pain that you and your client base feel. What this list of problems doesn't cover is the lost opportunity that comes from such a fragmented set of systems. The value of data grows as that data grows, through continued use and, more significantly, through integration with additional data to create a broader view of the overall organization. This value is trapped inside the welter of discrete systems. You could spend a significant quantity of resources trying to bring this data together with the same tools, but the proliferation of moving parts makes this a patchwork solution at best — if it's even possible.

So the need is clear — you don't want to sacrifice the advantages of rapid development in a productive environment, but your situation is growing more untenable by the day, as every new system only increases the problems springing out of a vast, unintegrated pool of systems.

Why Oracle?

You have two problems, and both of them require solutions. But why would you look to Oracle for both of those solutions?

Of course, Oracle is widely known for their enterprise strength database. You would expect systems built on the robust foundation of this database to be highly scalable, and for each database system to be able to support many different applications. But isn't this sophisticated technology both complex and expensive?

As you will see throughout the remainder of this book, the answer to both of these questions is a resounding "No!" The folks at Oracle have indeed included a host of advanced features in their database and supporting technology for decades. This leadership has given their technology a significant advantage in the market, and in the ever-increasing ease of use of their products. Typically, Oracle introduced features into their technology years ahead of other products, and has refined and simplified the interface to that technology, in cooperation with their user community, while others strove to catch up. At this point in time, Oracle has simplified the use of their standard features to the point where you get their advantages with virtually no effort on your part. The exercises in this book are an illustration of this approach — although the application you will create is robust and flexible, with the ability to transparently scale to thousands of users, you will not have to perform any special configuration or management tasks to gain these benefits.

Even better, there is still a vast domain of advanced functionality in Oracle technology that you can choose to add to your application stack if you wish. From analytical capabilities to clustering solutions and everywhere in between, Oracle technology has all the features you need, regardless of how demanding your requirements are.

Oracle technology provides a great on-ramp to the highest levels of technical capabilities. You can easily use Oracle technology to create your systems, with all the power and functionality of Oracle products right there when you need it. But, you say, surely all this capability must be expensive, right?

Once again, the answer is no. In this book, you will be creating an order entry system, and all you will need is a browser. You will use a hosted Oracle environment that is available to you without any charges. If you want to create the same application using your own installed software, everything you need is either available in the hosted version of primary tool you will be using, Oracle Application Express, or ready for you to download from the Oracle site.

In fact, the primary tool you will be using, Oracle Application Express, is included with every Oracle database as a no-cost option. Once you become acquainted with the productive potential of Oracle Application Express, you can create almost any application using this tool and deploy that application onto any production Oracle database.

In other words, the best reason to use Oracle technology is that there are no reasons not to — the question should be "Why *not* Oracle?" And, with this book, you have the perfect introduction to using that technology to implement your own IT solutions — at least, that is what this author hopes!

What Is Oracle Application Express?

The focus of this book, like its title, points to Oracle Application Express. What exactly is Oracle Application Express, also known as Oracle APEX?

Oracle Application Express is a rapid application development (RAD) tool built on Oracle technology. Oracle APEX runs in an Oracle database instance and comes as a no-cost option with all Oracle databases.

APEX runs entirely in a browser and does not require any software to be loaded onto your client machines. You develop your applications from a browser-based environment, as shown in Figure 1-1, and deploy your applications to a browser-based environment.
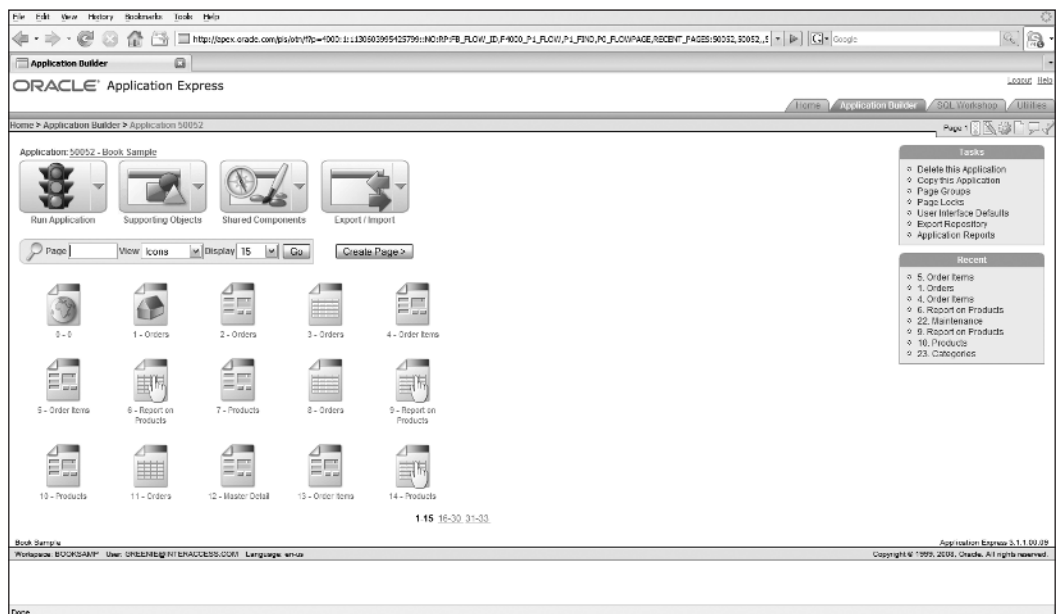

Figure 1-1

Oracle Application Express is a declarative development tool. As you will see throughout this book, APEX development consists of assigning values for properties which describe the various components of your applications. The Oracle APEX environment does the rest for you.

For most components, you will use wizards to guide you through the process of creating those components. After this initial creation, you have access to these properties to modify or shape the operation of your applications, combining ease-of-use and productive maintenance in the same development tool.

All APEX development is data-driven. Tight integration with the Oracle database which hosts APEX means that your applications will naturally flow from your data designs. For instance, APEX applications automatically understand and implement relationships between tables, generating fully-featured applications without additional programming overhead.

Oracle Application Express is an all-in-one development tool. You use the same techniques to create forms, reports, and charts, as well as integrating these components together with navigation methods.

Your Oracle APEX environment gives you all you need to create virtually any application through an easy declarative development process. However, APEX is also extensible, so you can use HTML to modify the presentation of your APEX-generated client interfaces and Oracle's standard PL/SQL procedural language to supply additional logical operations on the back end.

When you start to use Oracle APEX, you will quickly discover that you are not alone. The Oracle Technology Network (OTN) has a vibrant community of APEX users and experts, who regularly contribute leading to continual improvement in best practices and technical solutions. In addition, you will find a large collection of application packages that have already been created with APEX, readily available for you to integrate in with your own applications.

Last, but certainly not least, Oracle Application Express gives you a way to protect the investment you have in all those personal applications spread throughout your organization. You can upload data from an Excel spreadsheet with a few simple mouse clicks, moving crucial information into an Oracle database. You can even generate a complete application to interact with that data with a few more clicks, completing the task in less than 10 minutes.

Oracle also provides a migration tool to help you move your Access applications to Oracle APEX, migrating from a personal database with limited scalability to the world's most powerful database.

Ready to start yet? This book contains all you will need to jump into the world of APEX-created applications. But first, a little bit about the application you will be creating in the remainder of this book.

What Are You Going to Do?

So far, so good. You've got a handle on Oracle Application Express, the tool you will be using to accomplish the task laid out in this book.

That primary task is to build an order entry system from scratch. You will be creating the data structures to hold the order information, loading data into those structures, creating maintenance tools for administrators to use to access and modify this data, and creating a browser-based user interface for your application.

The application itself will have all the features you would expect in a robust application:

❑   Ability to enter data, while ensuring that the data contains appropriate values

❑   Ability to search for data, according to user-specified conditions

❑   Ability to report on that data, both at the detail level and through higher-level approaches, such as graphs and charts

❑   An easy-to-use, attractive interface that will enhance user productivity

You can see a couple of views of this application in the following figures. Figure 1-2 displays one of the key pages in your completed application, where users will see their orders and the items in those orders, along with the ability to add new items and modify or delete existing items.
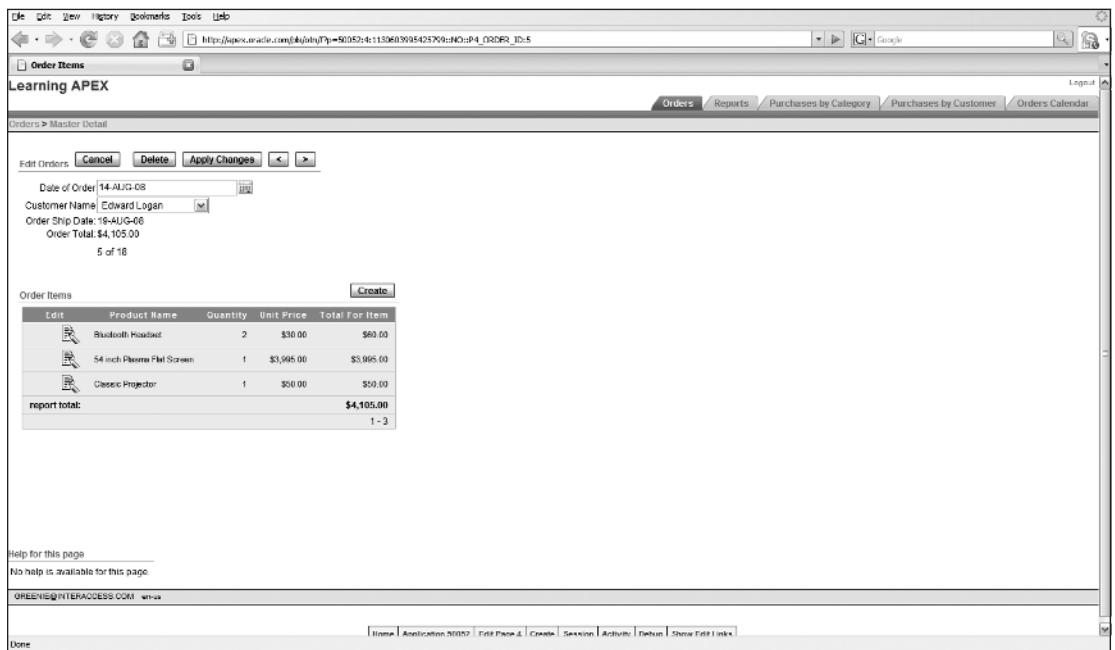

Figure 1-2

Figure 1-3 shows you an example of using the charting capability of Oracle Application Express. Although you cannot tell from this one image, the chart shown has built-in drill-down functionality, so that a user can get more detailed information on any of the sections of the pie chart with a simple mouse click.

Although this application is fully functional and scalable, you hopefully are interested in this book for more than just the order entry application you will build. The order entry application you will create was chosen as an example because you can learn most of the techniques you will need for your own future work. The primary purpose of this book is to teach you how to use Oracle Application Express to realize your own development goals, rather than arriving at the end product of a complete order entry application. But by the time you reach the end of the examples in this book, you will be able to extend the application you have built in almost any direction your requirements dictate.

Figure 1-3

You will build this application over the remainder of this book. You can also get script files, and instructions on how to use them at the web site for this book, www.wrox.com.

How Will You Do It?

The format of this book is to teach you about Oracle APEX while iteratively developing the sample order entry application. Each chapter explores a basic area of functionality and the development techniques you will need to achieve that functionality.

Oracle Application Express runs within the Oracle database environment. You have a few choices on how you want to use APEX.

❑ You can download a free copy of a developer edition of Oracle Database 11*g* and Oracle Application Express. If you wish, you can load that software following the installation instructions that accompany the software. These installation instructions also include information on how to access your Oracle APEX software.

❑ If you already have an Oracle database within your organization, you could use Oracle Application Express from that environment. If APEX is not already installed on your server, the APEX home page at http://otn.oracle.com/apex has a link to download the software for your database. The only requirement is that your Oracle database be version 9.2.0.3 or higher.

This book is based on Oracle Application Express version 3.1.2. All the examples in the book have been tested against that version, so you should be fine if you are running that version or a later version.

❏ You can also use a hosted version of Oracle Application Express. This book is designed for this remote access to APEX, although the examples should work with either of the other two options.

The next section will describe exactly how to sign up for your hosted Oracle APEX account.

How to Sign Up for a Hosted APEX Account

Oracle Corporation provides free hosted APEX accounts for your trial use. Signing up is an easy process that will take you less than 2 minutes.

Open your browser and go to `http://apex.oracle.com`, which is shown in Figure 1-4.

Figure 1-4

❏ Click on the `Sign up for an account` link underneath the big red Login button, which will bring up the first page of the Signup Wizard, shown in Figure 1-5. This page is also your first view of an APEX application.

❏ Click on Next to move from the Welcome page to begin the process.

❏ Your first step, shown in Figure 1-6, is to identify the person who will be the administrator of the hosted Oracle APEX account. Enter your name and email address, and click Next.
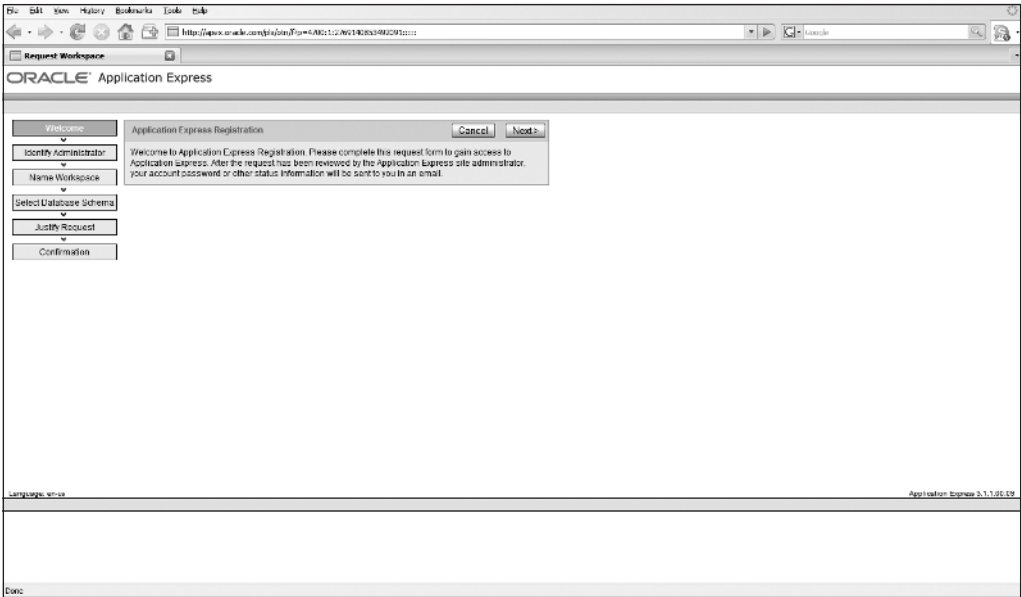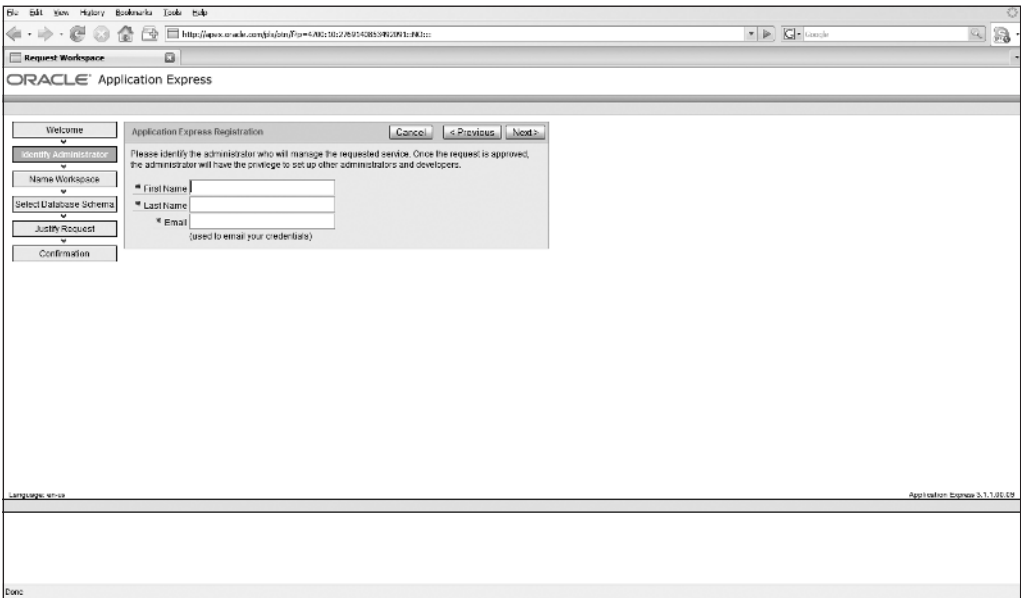
Figure 1-5

Figure 1-6

❑   Oracle Application Express can support multiple workspaces to give you and your organization the ability to segregate work on different applications. The next page of the Signup Wizard prompts you for a workspace. Enter a name you can remember, and click Next. If the workspace name you enter is not unique, you will receive an error message and be prompted to enter the name again.

❑ In the next step, you are prompted for the name of a *schema*. Oracle Application Express exists within an Oracle database. An Oracle schema is a collection of tables and objects — similar to the concept of a database in Access. Give your schema an appropriate name, the easiest being the same name as your workspace.

The schema name must not exceed 30 characters, cannot contain spaces or quotation marks, and must be unique for the hosted version. If you select a schema name that violates any of these restrictions, you will get an error and be prompted to select another name.

❑ Leave the default initial space allocation of 10MBs. Although an Oracle database can scale to handle many terabytes of data easily, you will not need that much space for your initial explorations of APEX. Click Next.

❑ The final step in your signup process is to let the folks at Oracle know why you want to obtain a hosted APEX account. Enter your reason, which is to work on the exercises in this book, and click Next.

❑ The final step should be familiar to web users. You are asked to enter a verification code, which ensures that a human is making the request, rather than an automated program. Match the text and click Submit Request, which will bring up the page shown in Figure 1-7.
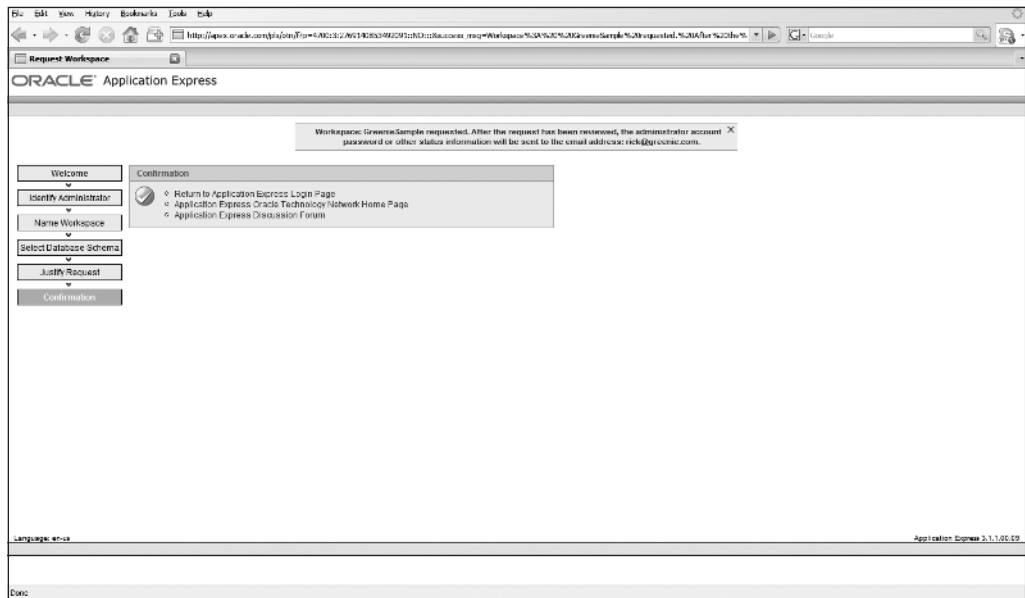

Figure 1-7

This page informs you that you will receive an email once your request has been reviewed. This review process typically only take a few minutes. The email message you will receive contains a summary of your request and an activation link.

❑ Click on the activation link in your email. This action will create a workspace for you in the hosted APEX environment. Once the workspace has been created, the hosted environment will send credentials for that workspace to your email address.

❑ Click on the link to go to the login page for your hosted account, shown in Figure 1-8. Enter your workspace name and your user name, which is the email address. Check your email for your credentials, and enter the password sent to you. Click Login, which will bring you to Oracle Application Express, your development destination, shown in Figure 1-9.

And that's it! You are ready to start creating APEX applications — which you will begin in the next chapter.
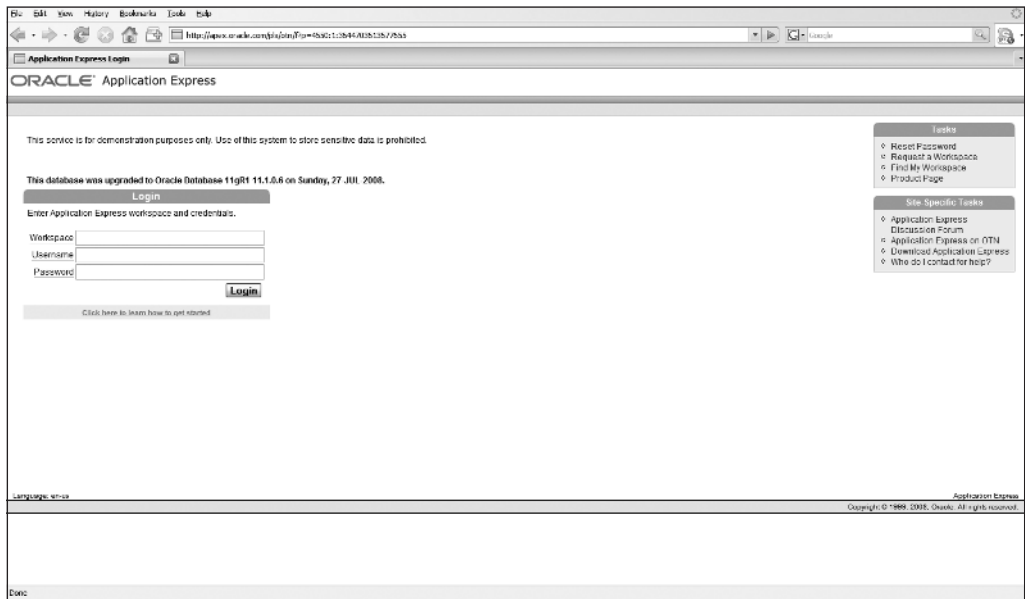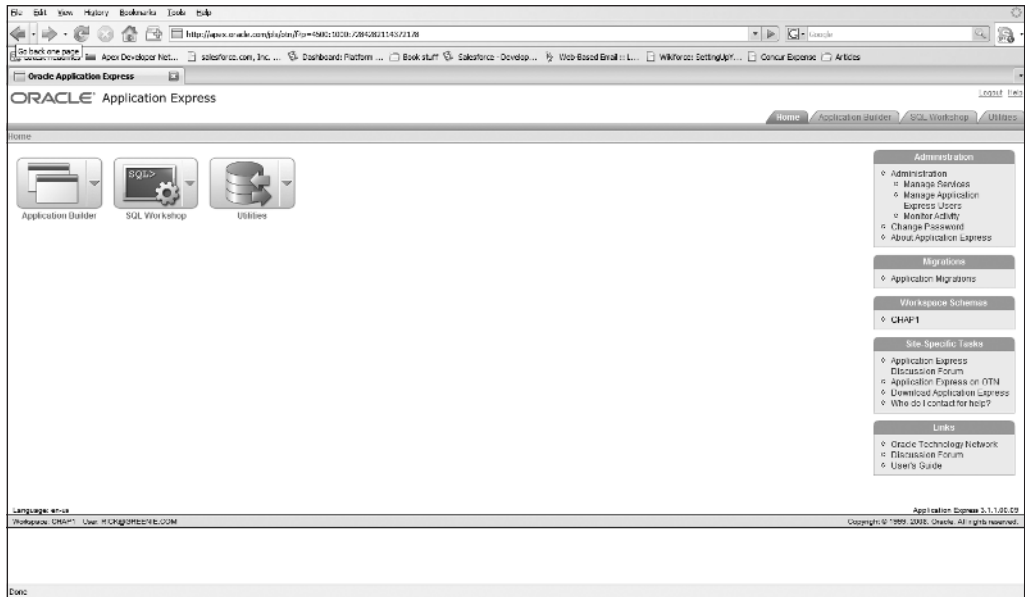

Figure 1-8

Figure 1-9

Script Files for This Book

You can get those at the web site for this book, `www.wrox.com`, which also includes a script to create the entire application from scratch. At this web site, you will find links to a wide variety of other materials that you may find helpful, including additional tutorials on APEX. You will also learn how to get loads more interesting stuff, like Oracle software, tutorials, white papers and other collateral.

Summary

Oracle Application Express will give you the power to create robust and scalable applications in an easy, highly productive environment. This chapter introduced you to the basics of APEX, including:

- ❑ What is APEX?
- ❑ What application will you be building in this book
- ❑ How will you build that application

This book will walk you through the process of creating a sample order entry application, which will teach you the techniques you need to create your own applications. Without further ado, on to the world of APEX!