Most business database-centric applications generally function in the same manner. An application is built around a table, say a Customer table. An end user needs to add new data to this table (in this case, a new customer record). He or she also needs to modify existing data and delete customer records from this table. Data records in this table usually take the appearance of a grid, accompanied by the New, Edit, and Delete buttons that allow the end user to modify the grid’s contents. The New and Edit buttons typically take the user to a separate detail page—a form—that displays the set of fields in a more streamlined manner for data entry.

As you move towards increasingly complex examples like sales order forms or expense claim request forms, you can dress up your application with increasingly sophisticated bells and whistles—data validation, calculated fields, complex form behavior, access rights, web service calls and so on. At its heart, though, a business application still consists of basic CRUD (Creating, Reading, Updating, and Deleting) operations.

This recurring pattern is the underlying foundation that makes the entire concept of Oracle APEX work. It takes care of the tedious work of setting up basic data entry screens and binding it to the database table. After that, you are given the freedom to add the bells and whistles you want to each page to make them behave the way you want them to.

This chapter provides you with several recipes to help you create the CRUD foundation for your application. It will guide you through creating two different application types—the standard database application and the Websheet application (a new feature in APEX 4.0). You will learn how to generate the data entry forms for both and then modify them slightly to use a richer set of UI controls. I will also explore how you can speed up data entry by using a special type of form called the tabular form.

2-1. Creating a Database Application

Problem

You need to create a database application that contains a data entry form to manage a master list of customers and their details.

Solution

It’s best to approach this problem in two parts. First, create the customer table. Then create the application, including a data entry form.
Creating the Customers Table

Here’s how to create the customers table:

1. Login to an existing APEX workspace as a developer.

**Note** You can refer to Recipe 1-5 for more information on how to create a workspace.

2. You will now need to create the Customers table. Click on the SQL Workshop ➤ Object Browser menu item. In the ensuing window, click the Create button in the top right corner, and choose the Table menu item.

3. You will be presented with a window that allows you to define your database table. Specify a name for the table and define a few fields for the table. You may create a mix of NVARCHAR2, NUMBER, and DATE fields. This is shown in Figure 2-1.

![Figure 2-1. Creating the Customers table](image_url)