

An Introduction to Point-and-Click App Building with Force.com

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- customize standard objects such as Contact, Account, and User
- create and manage custom objects (aka tables)
- manage user interface components that correspond to objects, such as page layouts
- build reports to list and summarize data
- declare simple but powerful business logic such as workflow rules and approval processes
- develop, execute, and test custom business logic, including Apex class methods (stored procedures) and database triggers
- develop custom user interfaces using Visualforce pages

This article introduces you to Force.com's browser-based user interface and provides an overview of the different menus, including how you can use it to create and control your Force.com applications and environment. After reading this article, you will have a good overview of what you can accomplish with the Force.com interface and how to use it.

Force.com Metadata

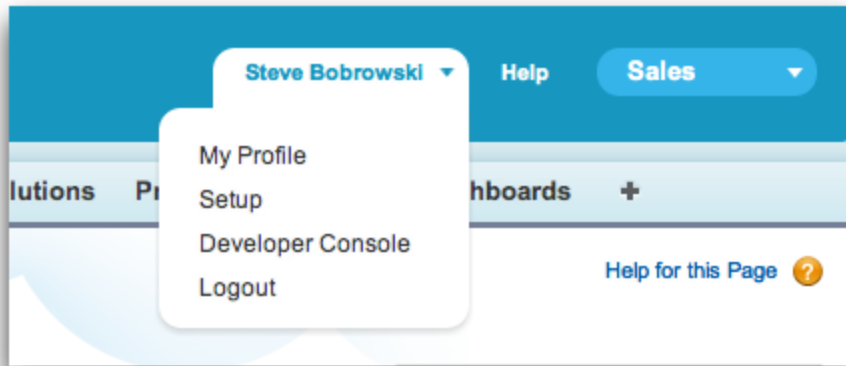
The Force.com platform provides an enormous amount of functionality and flexibility, all of which is driven by underlying metadata. Force.com metadata is a collection of attributes that describe most components of data and applications that operate on the platform. Metadata describes the data structures in your environment, the declarative functionality implemented on the platform—even the applications you build on the platform.

To understand the power and reach of metadata, simply access a data record held in Force.com. When you access the record in your Force.com environment, the platform uses metadata to understand the structure of the record, the user interfaces defined for the record, the applications that use the user interface, even the security on that data and application. To read more about metadata and its role, read [An Introduction to Force.com Metadata](#).

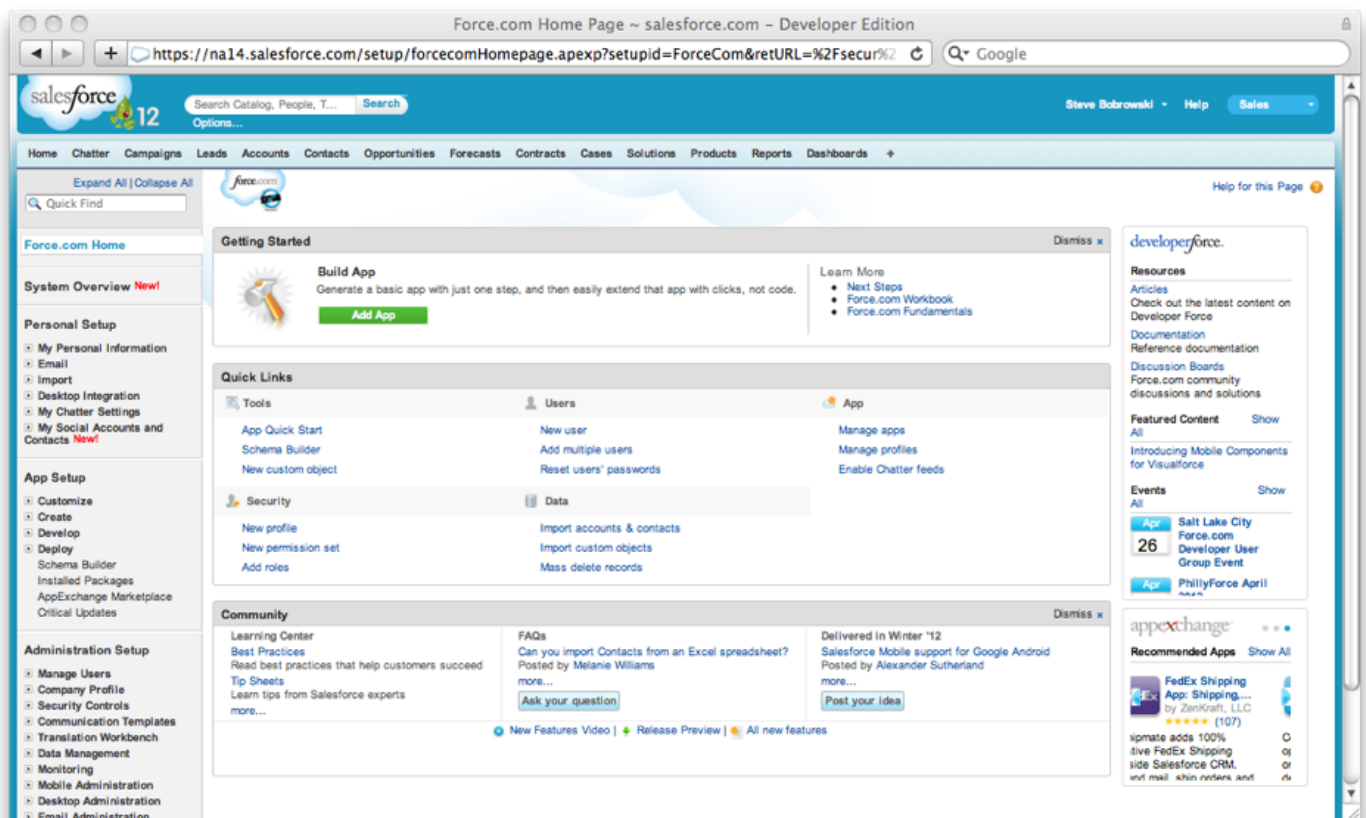
Why is there a discussion about metadata here in article about a user interface? Because Force.com's Web-based development environment presents you with pages and wizards to define the underlying metadata for your environment. When you enter or edit values through point-and-click tools, you are setting values for the underlying metadata. The [Force.com IDE](#), an integrated development environment based on Eclipse, also manages metadata when you develop application components. But instead of acting through a Web interface, the Force.com IDE downloads textual representations of the metadata for manipulation on a local client and then uploads modified metadata to Force.com when you apply changes.

The Structure of Force.com's Development Environment

All Force.com users have access to the Force.com's development environment from any application through the Setup link in the upper right side of the page.



Clicking on the Setup link opens the Force.com Home Page.



The Force.com Home page has several key areas to notice.

Getting Started

The Getting Started box in the top middle of the page provides access to the App Quick Start wizard for building a simple app with just a few mouse clicks, along with handy links to resources for learning more about Force.com app development.

Quick Links

The Quick Links box, underneath Getting Started, provides handy links to tools for managing tools, users, apps, security, and data.

Community

The Community box, underneath Quick Links, showcases available resources. This box doesn't appear if you've previously dismissed it. It reappears with each new release; click Dismiss to hide it again.

Left Sidebar

The menus and links in the left sidebar provide you access to various parts of Force.com's Web-based development environment. Subsequent sections in this article explain each menu in more detail.

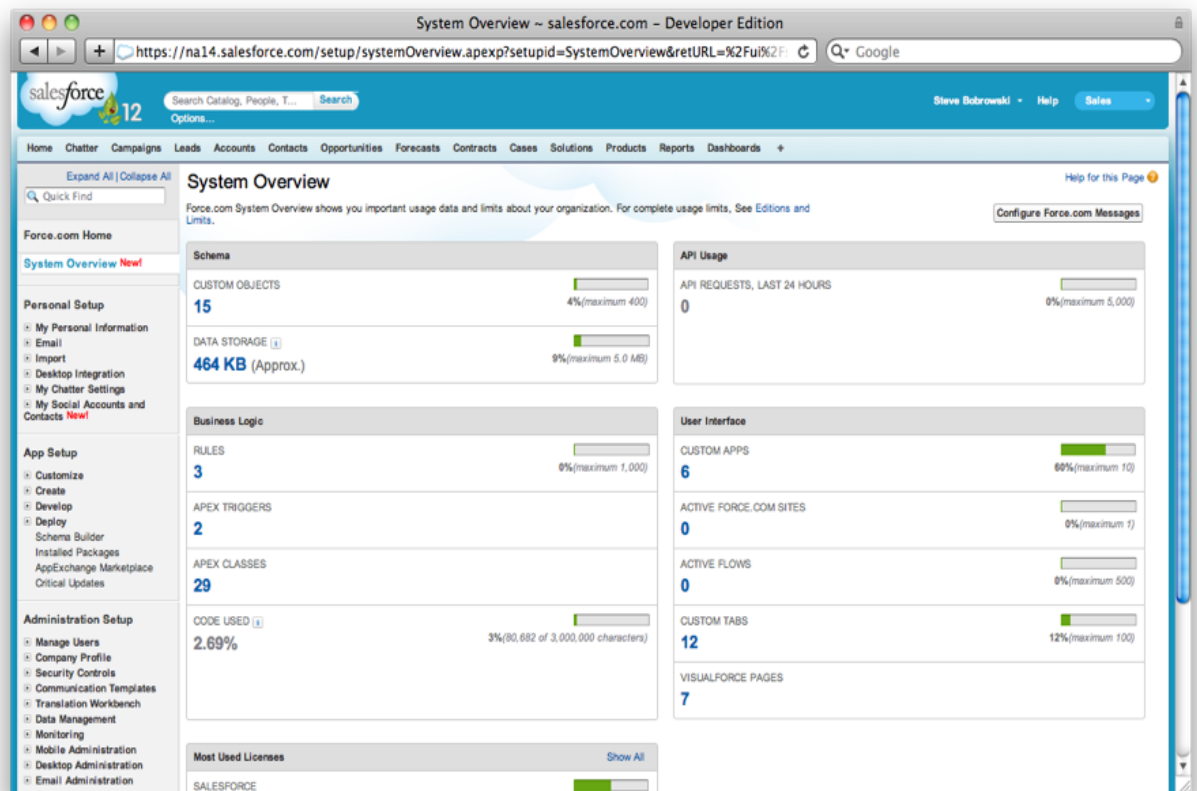
Right Sidebar

The right sidebar includes external links that are useful for developers and administrators.

Before exploring the various aspects of the Force.com development environment, first notice that the tabs for the currently selected application are still visible. You can immediately return to the application by selecting any of those tabs.

System Overview

When you click on the System Overview link in the left sidebar, the System Overview page loads.

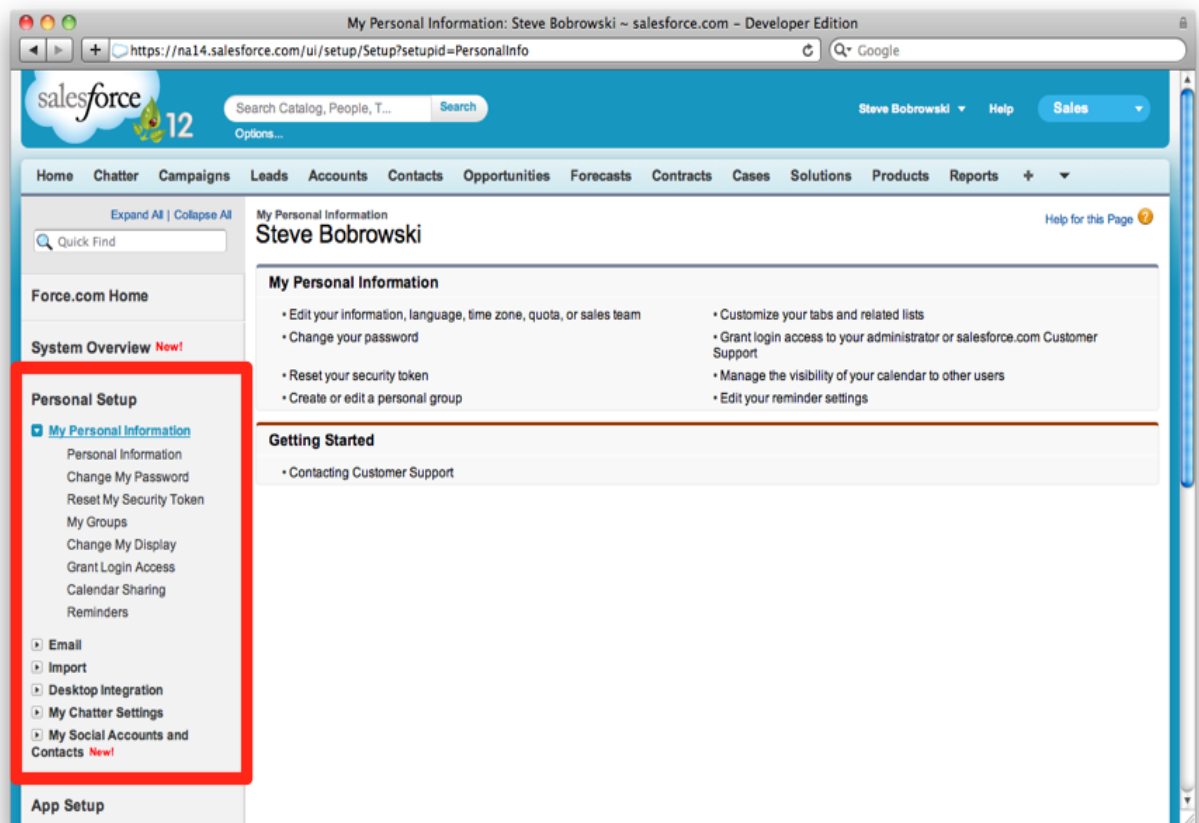


The system overview page shows usage data and limits for your organization, and displays messages when you near limits. Click the numbers under each metric to get more details

about your usage. If it's available, use Checkout to increase usage limits for your organization. For example, if your organization reaches the limit for custom objects, the system overview page notifies you with a message link. Click the link to clean up any unused objects, or visit Checkout to increase your limit for objects. You can also add system overview messages to the Force.com home page to remind you when your organization reaches its usage limits.

Personal Setup Menu

All users have access to *Personal Setup*, which you use to set preferences for your personal Force.com environment.

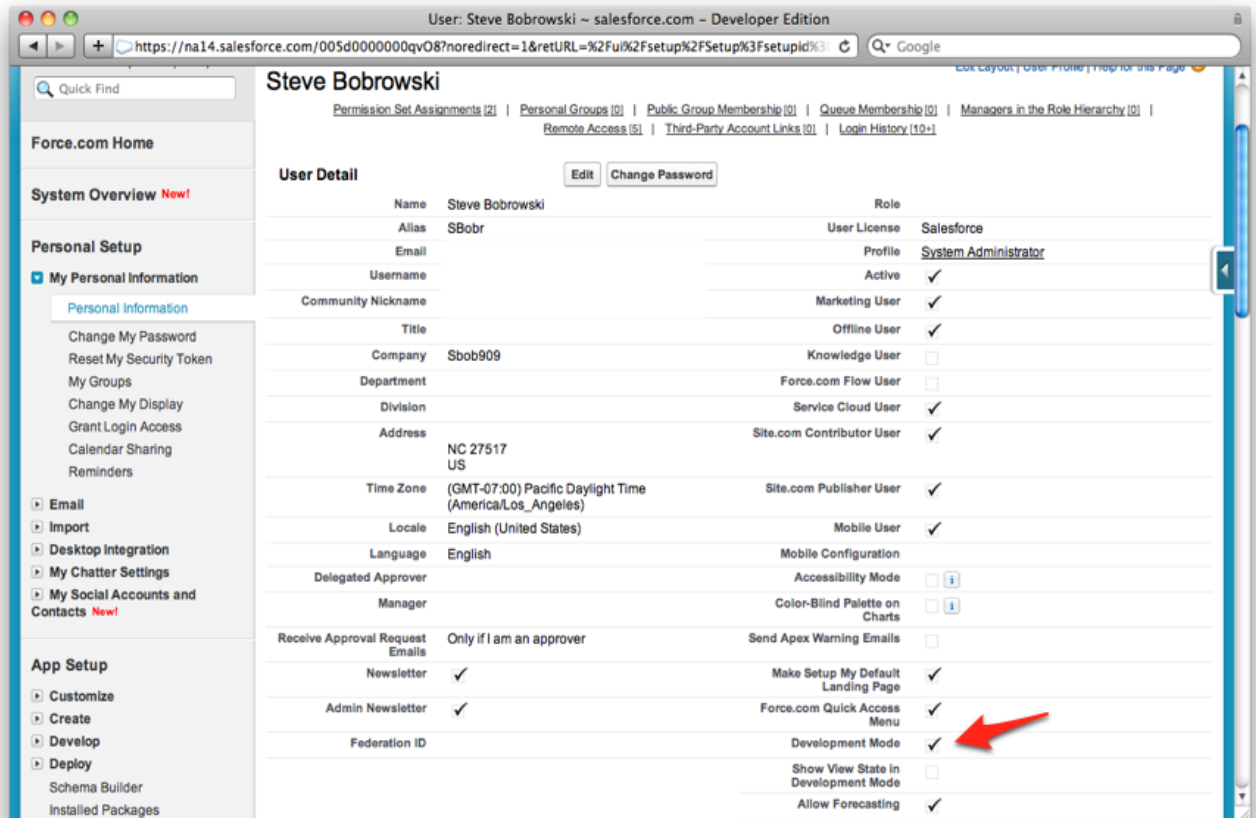


The main work in *Personal Setup* takes place in the *My Personal Information* section. You can shape your own Force.com environment, including specifying personal information, adjusting aspects of your authentication, and even changing the display of the applications available to you. You can go so far as to add or remove individual tabs from your own version of a Force.com application through the *Change My Display* option of *My Personal Information*. The *Personal Setup* menu also includes configuration settings for your email, as well as the ability to import accounts and contacts from various third-party contact managers and to enable and use Force.com Connect Offline.

Personal Setup for Developers

Although the *Personal Setup* menu is available for all users, there are some specific parts of this menu that developers should be aware of. The *Change My Display* option lets you customize tabs for any particular application, or to show and hide related lists for a page, within the boundaries of your security settings. When you add tabs to an existing application, you have the option to have these tabs automatically override existing tab settings.

When you click **Personal Information > My Personal Information**, notice that your personal information includes a setting called *Development Mode*. This setting, when enabled, lets you access the in-page Visualforce editor for building custom user interfaces for your applications.

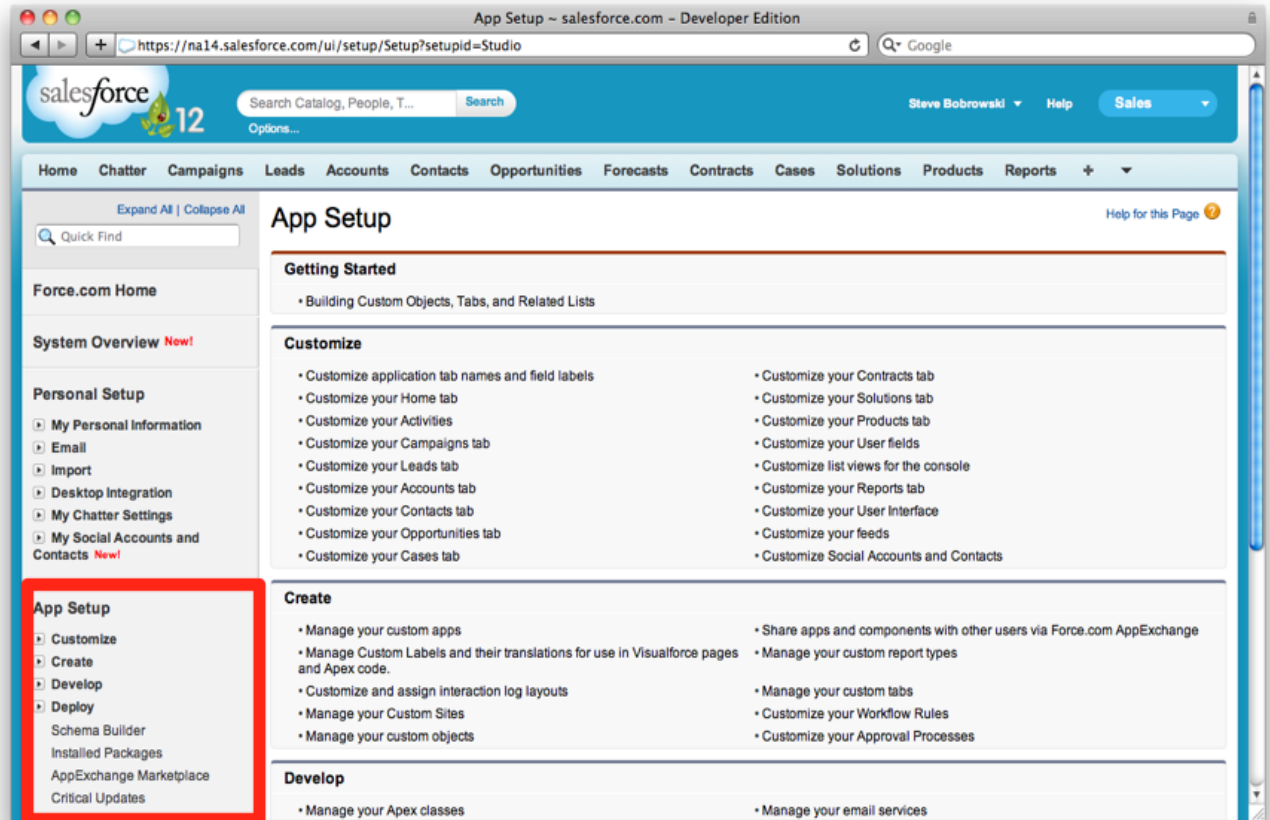


The screenshot shows the Salesforce user profile page for Steve Bobrowski. The left sidebar contains the navigation menu with sections: Force.com Home, System Overview, Personal Setup, and App Setup. Under Personal Setup, 'My Personal Information' is selected. The main content area shows 'User Detail' for Steve Bobrowski, with fields for Name, Alias, Email, Username, Community Nickname, Title, Company, Department, Division, Address, Time Zone, Locale, Language, Delegated Approver, Manager, Receive Approval Request Emails, Newsletter, Admin Newsletter, and Federation ID. The right side of the page lists various roles and settings, including User License (Salesforce), Profile (System Administrator), Active, Marketing User, Offline User, Knowledge User, Force.com Flow User, Service Cloud User, Site.com Contributor User, Site.com Publisher User, Mobile User, Mobile Configuration, Accessibility Mode, Color-Blind Palette on Charts, Send Apex Warning Emails, Make Setup My Default Landing Page, Force.com Quick Access Menu, Development Mode (checked), Show View State in Development Mode, and Allow Forecasting. A red arrow points to the 'Development Mode' checkbox, which is checked.

Field	Value	Field	Value
Name	Steve Bobrowski	Role	
Alias	SBobr	User License	Salesforce
Email		Profile	System Administrator
Username		Active	<input checked="" type="checkbox"/>
Community Nickname		Marketing User	<input checked="" type="checkbox"/>
Title		Offline User	<input checked="" type="checkbox"/>
Company	Sbob909	Knowledge User	<input type="checkbox"/>
Department		Force.com Flow User	<input type="checkbox"/>
Division		Service Cloud User	<input checked="" type="checkbox"/>
Address	NC 27517 US	Site.com Contributor User	<input checked="" type="checkbox"/>
Time Zone	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles)	Site.com Publisher User	<input checked="" type="checkbox"/>
Locale	English (United States)	Mobile User	<input checked="" type="checkbox"/>
Language	English	Mobile Configuration	
Delegated Approver		Accessibility Mode	<input type="checkbox"/>
Manager		Color-Blind Palette on Charts	<input type="checkbox"/>
Receive Approval Request Emails	Only if I am an approver	Send Apex Warning Emails	<input type="checkbox"/>
Newsletter	<input checked="" type="checkbox"/>	Make Setup My Default Landing Page	<input checked="" type="checkbox"/>
Admin Newsletter	<input checked="" type="checkbox"/>	Force.com Quick Access Menu	<input checked="" type="checkbox"/>
Federation ID		Development Mode	<input checked="" type="checkbox"/>
		Show View State in Development Mode	<input type="checkbox"/>
		Allow Forecasting	<input checked="" type="checkbox"/>

App Setup Menu

The *App Setup* menu is where you will spend the most time as a developer. These menus provide access to pages that let you create and configure Force.com components and services.



The App Setup menu has four primary menus:

Customize

Use these menu options to modify the standard objects that are in your Force.com environment, such as the Account, Contact, and Opportunity objects, as well as create console layouts, enable and configure tagging for objects, and enable different user interface and search options. You can also enable Salesforce-to-Salesforce exchange and Customer Portal, and fine-tune Chatter settings, including feed tracking preferences.

Create

Use these menu options to access most of the declarative application building power of the Force.com platform. These menus let you define applications and tabs, custom objects, report types, along with workflow rules and approvals. The next section of this article uses the Objects menu option to explore the point-and-click interface to underlying Force.com metadata.

Develop

Use these menu options when you need access to the programmatic power of the Force.com platform. Visualforce is Force.com's custom markup language that you can use to quickly and easily build custom user interfaces for your apps. Apex is Force.com's procedural programming language, similar to Java, that you can use to build custom app logic in the form of Apex classes and triggers, as well as custom Visualforce page controllers.

The *Develop* menu also includes options for executing Apex unit tests, managing custom Visualforce components, and much more. You can also load static resources that your apps need, and download Web Service Definition Language (WSDL) files for your environment. And finally, the *Develop* menu options include links to download key tools for use with the Force.com platform, including the Force.com IDE and the [Force.com Migration Tool](#).

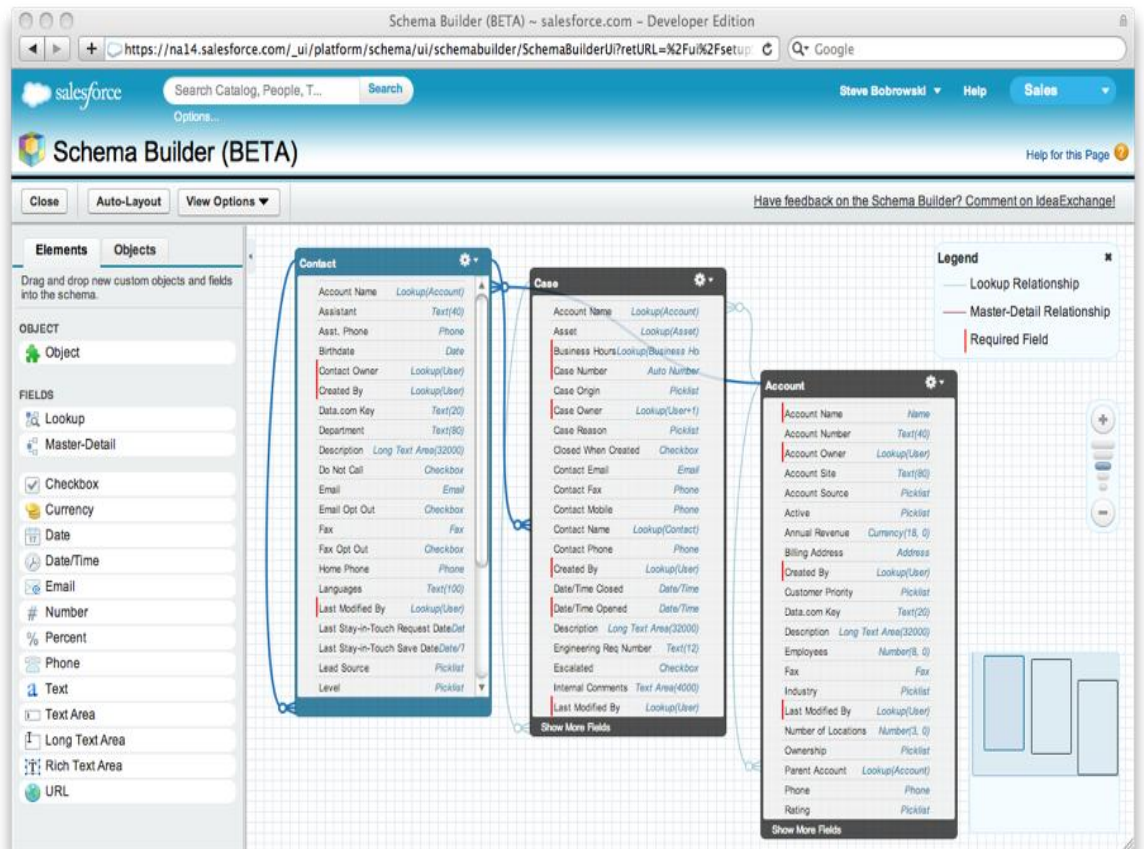
Deploy

Use these menu options to access Force.com's visual schema building tool, Schema Builder (see below), to manage aspects related to change sets (metadata sets) and to monitor deployments of XML configuration files from Force.com IDE, Force.com Migration Tool, and other Metadata API client applications.

Among other things, the *App Setup* menus also provide access to information about applications in your environment, which are called *packages*. You can unload these packages and their associated data from this page.

Schema Builder

Click **App Setup > Schema Builder** to display Schema Builder, a dynamic environment to add new custom objects, custom fields, and relationships to your schema. Schema Builder makes it easy to navigate easily among your related schema objects without having to load various page. And its drag-and-drop interface lets you easily add a custom object or new field, and saves the layout of your schema any time you move an object. Schema Builder provides details such as the field values, required fields, and how objects are related by displaying lookup and master-detail relationships. You can view the details for both standard and custom objects in schema builder.

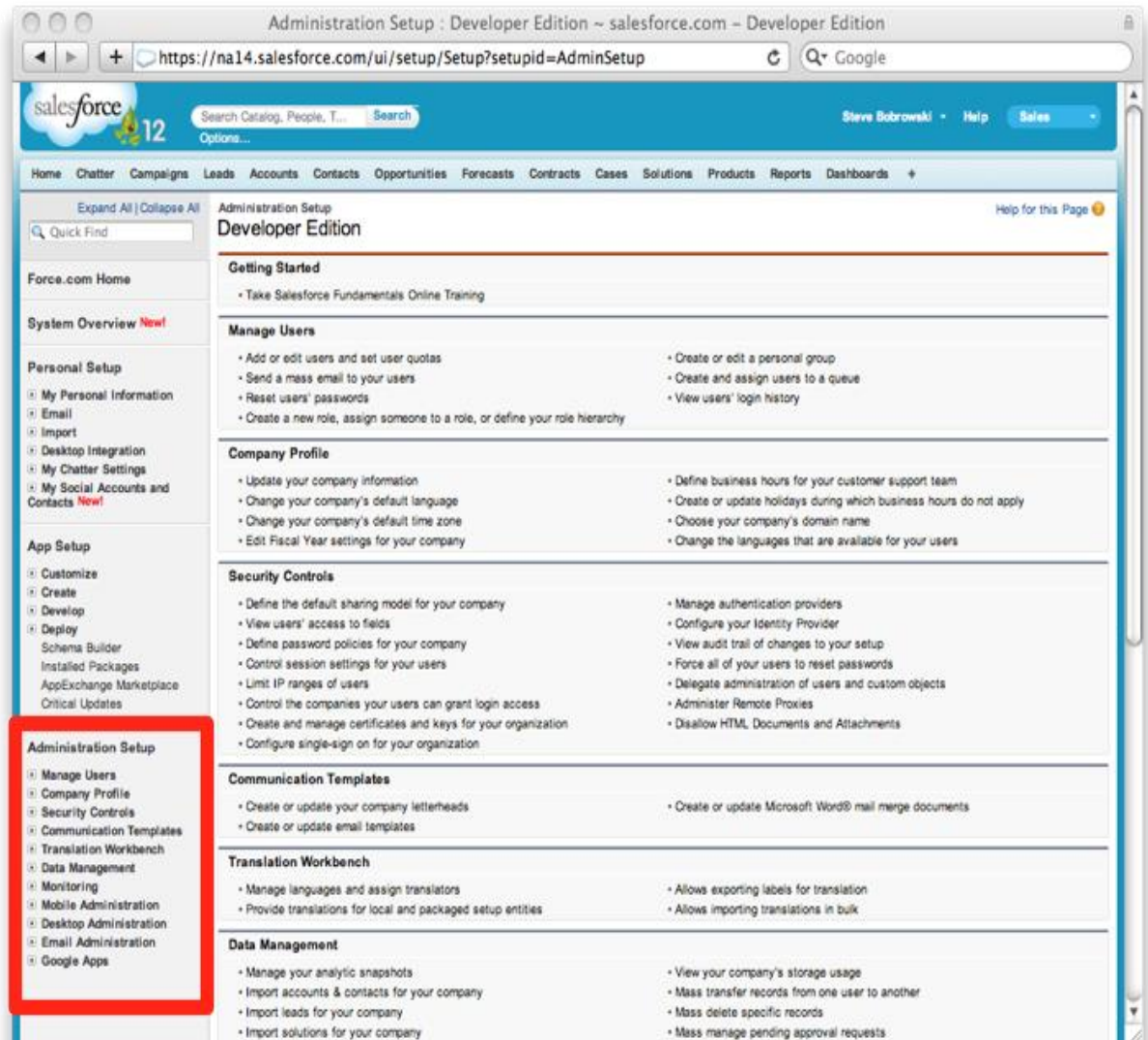


App Setup for Developers

The *App Setup* menu is where Force.com developers do most of their work in creating applications and their components. As such, you should familiarize yourself with the broad range of functionality available to you within this section of the Setup interface—virtually all of the menu entries here are relevant to your work as a developer.

Administration Setup

All users have access to the *Administration Setup* menu, which you can use for a wide variety of administration options for the Force.com environment.



In this section, you can create, edit, and manage organization-wide resources, such as users and security controls, templates used for email and mail merges, company information, and globalization settings. Main choices in this section let you manage the use of the email and offline capabilities of the platform, integration with Google Apps, and the use of your Force.com applications with mobile devices.

You can also monitor a variety of platform interactions, including database imports, API usage, and scheduled data snapshots, called analytic snapshots and listed as Scheduled Jobs.

The *Data Management* options under *Administration Setup* provide access to choices and tools for moving data in and out of your Force.com organization. Most importantly, you also have access to security controls for the environment, your users and the entities in your environment.

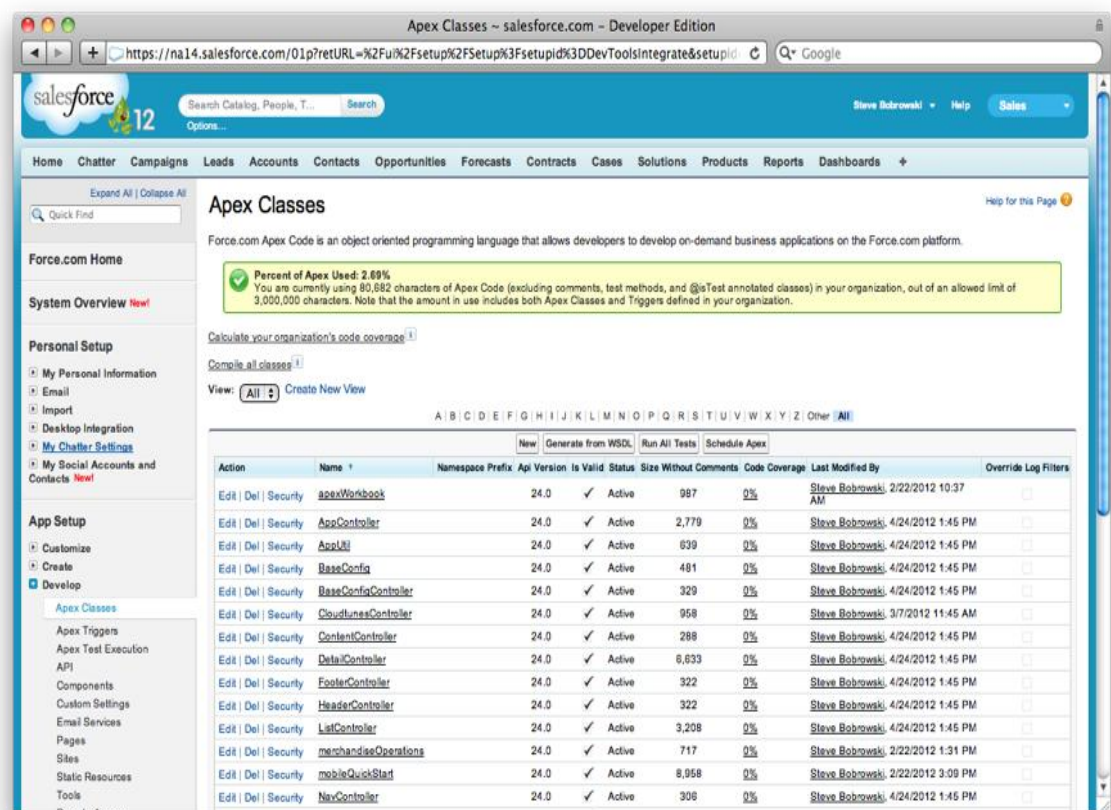
Administration Setup for Developers

Although you will typically define security settings for each entity in your Force.com environment individually, the security settings in *Administration Setup* give you a more global view of security across your environment, and you have to use the *Manage Users* choice to create and modify the basic units used to assign security, such as roles and profiles.

If you wish to setup and use analytic snapshots, you will access this capability through the *Analytic Snapshot* choice in the *Data Management* menu.

Using the Force.com Development Environment

Each discrete menu option Force.com's Web-based development environment brings up a page in the main portion of your screen. Typically, the initial page lists all the entries for a particular type of component, along with menu choices that let you view or edit the metadata for individual components. For example, the following screen shows a representative Apex Classes page that appears when you click **App Setup > Develop > Apex Classes**.

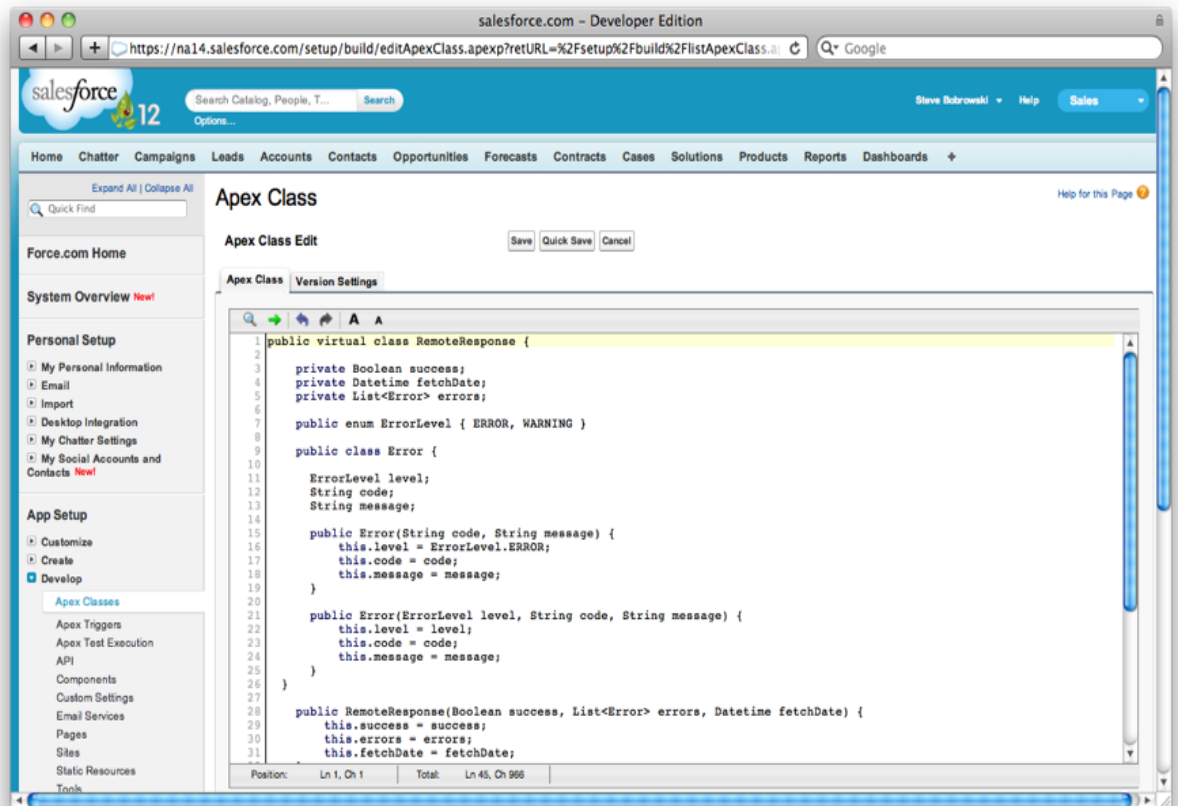


The screenshot displays the Salesforce Apex Classes page. The left sidebar shows the navigation menu with 'App Setup' expanded and 'Develop' selected. The main content area is titled 'Apex Classes' and includes a summary of Apex code usage. Below this, there are links to 'Calculate your organization's code coverage' and 'Compile all classes'. A table lists the Apex classes in the organization, with columns for Name, Namespace Prefix, API Version, Status, Size, and Last Modified By. The table is filtered by 'All' and shows a list of classes including ApexWorkbook, AppController, AppUI, BaseConfig, BaseConfigController, CloudTunesController, ContentController, DetailController, FooterController, HeaderController, ListController, merchandiseOperations, mobileQuickStart, and NavController.

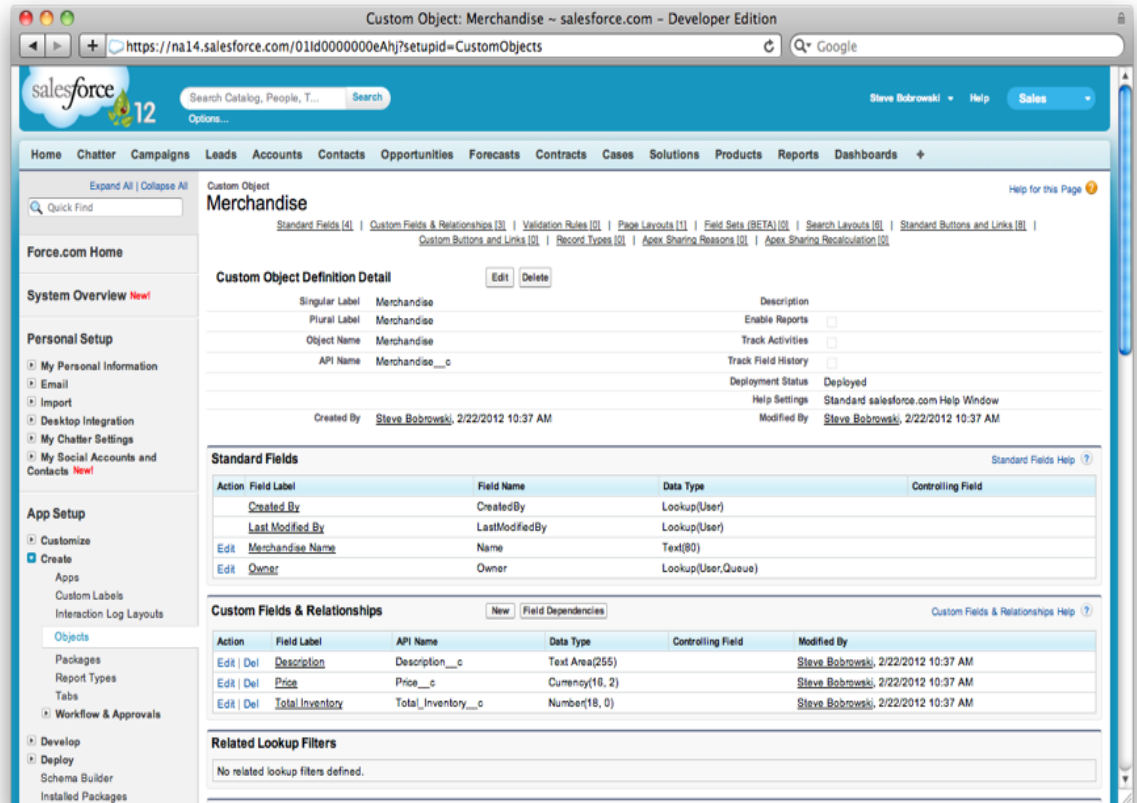
Action	Name	Namespace Prefix	API Version	Is Valid	Status	Size	Without Comments	Code Coverage	Last Modified By	Override Log Filters
Edt Del Security	ApexWorkbook		24.0	✓	Active	987	0%	0%	Steve Bobrowski, 2/22/2012 10:37 AM	
Edt Del Security	AppController		24.0	✓	Active	2,779	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	AppUI		24.0	✓	Active	639	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	BaseConfig		24.0	✓	Active	481	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	BaseConfigController		24.0	✓	Active	329	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	CloudTunesController		24.0	✓	Active	958	0%	0%	Steve Bobrowski, 3/7/2012 11:45 AM	
Edt Del Security	ContentController		24.0	✓	Active	288	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	DetailController		24.0	✓	Active	6,633	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	FooterController		24.0	✓	Active	322	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	HeaderController		24.0	✓	Active	322	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	ListController		24.0	✓	Active	3,208	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	
Edt Del Security	merchandiseOperations		24.0	✓	Active	717	0%	0%	Steve Bobrowski, 2/22/2012 1:31 PM	
Edt Del Security	mobileQuickStart		24.0	✓	Active	8,958	0%	0%	Steve Bobrowski, 2/22/2012 3:09 PM	
Edt Del Security	NavController		24.0	✓	Active	306	0%	0%	Steve Bobrowski, 4/24/2012 1:45 PM	

From such lists, you have the option of working with one of the existing components (in this example, an Apex class) or creating a new component. When you create a new component, Force.com presents you with either a single page or the first page of a wizard that guides you through specifying the core metadata attributes for the entity.

For example, the following screen shows the Create Apex Class page with some Apex code for a new class.



Similarly, you can create custom objects, what you might refer to as "tables" in a traditional database system. Once you create a custom object, you can edit the definition of the object via the *Custom Object* page.



The Custom Object page provides links for adding custom fields, validations to enforce data integrity rules, database triggers, and custom buttons or links to the object's page layouts. You can also modify the attributes of standard fields, buttons, links or layouts for both the page and search dialogs, as well as add new page layouts or assign record types.

As an example, when you add a new field to a custom object, a wizard walks you through a number of steps, including:

- Selecting a field type.
- Giving the field a label, name, help text, a default value, and potentially other attributes, such as the length of the field or whether a value is required.
- Assigning security settings to the field.
- Adding the field to existing page layouts.
- Depending on the type of field in focus, the wizard may include other pages for other relevant metadata attributes.

As with all pages in Force.com, you can use the on-line help for more details about the individual fields and choices you can make on the Custom Object page.

When to use Force.com's Web-Based Development Environment

You may have already read articles such as [An Introduction to Force.com Metadata](#) and know about the [Force.com IDE](#). So when should you use the Force.com IDE and when should you use Force.com's Web-based development environment?

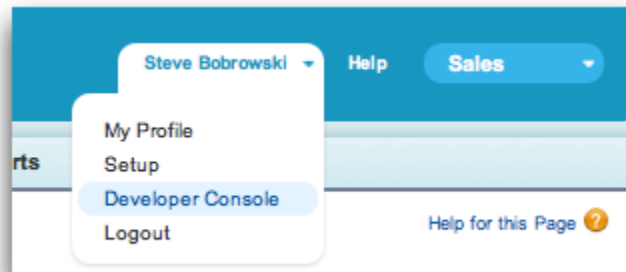
Because the Force.com IDE framework is designed as an IDE for many different languages, the Force.com IDE, built on Eclipse, is ideal for working with Apex Code, either in triggers or classes. It also boasts features such as integration with source code control systems, which you can't access through Force.com's Web-based interface.

Declarative features, from custom object creation through defining workflows, are probably handled best through Force.com's browser-based development environment because the built-in wizards help to guide you to successful definition of all appropriate metadata.

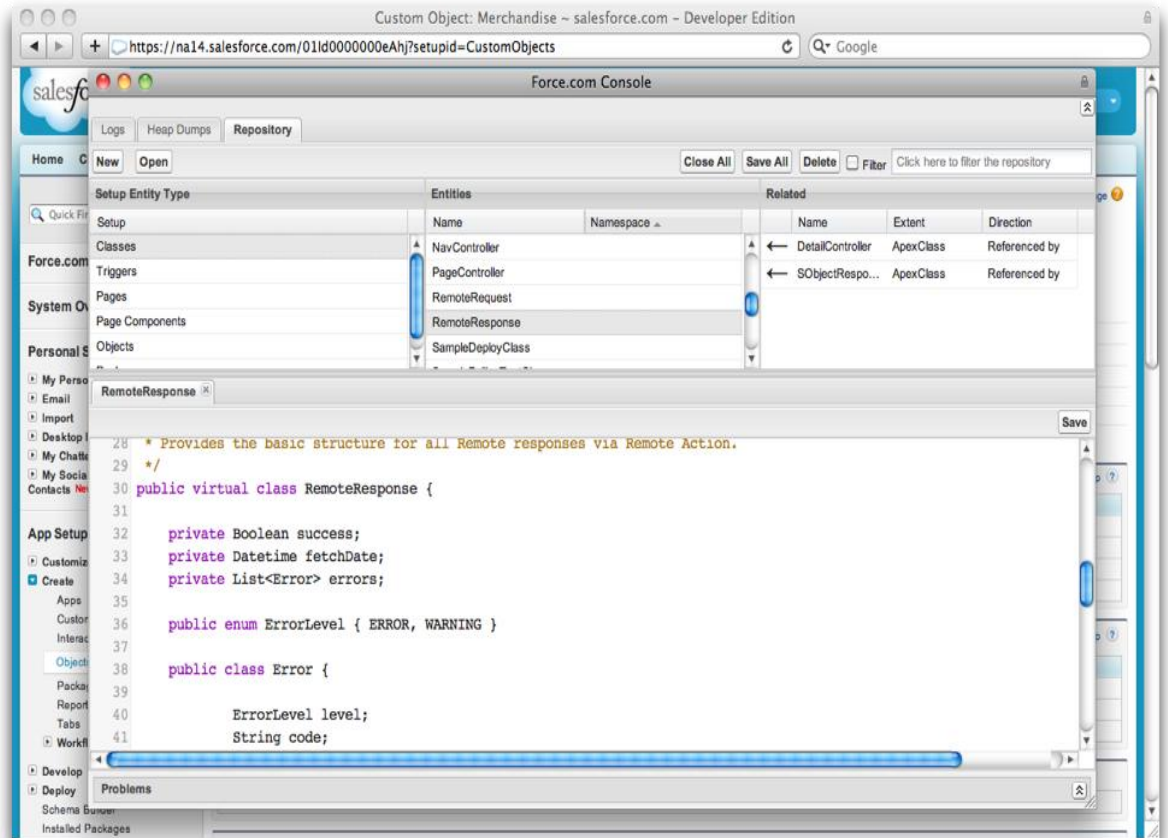
You can build Visualforce pages using both the Force.com's Web interface and the Force.com IDE. You might find it more convenient and intuitive to create Visualforce pages using the Force.com Web interface because development mode lets you instantly see how your Visualforce pages appear and operate.

The Developer Console

Another feature of the Force.com Web-based development environment is the Developer Console. You can access it from the same menu in the upper right corner that contains Setup.



Once the console loads in a new window, click the *Repository* tab to view, edit, and create new Apex classes, triggers, Visualforce pages, view all the standard and custom objects in your org, and more.



The *Heap Dumps* tab lets you browse snapshots of the state of objects in memory at the time of capture, including references between objects, and view variables in detail.

Summary

Force.com's Web-based development environment is a powerful tool that lets you create and modify all the declarative capabilities of the Force.com platform from within your Web browser, without having to install or configure any software. You can also use it to modify procedural components such as Apex classes and Visualforce pages, and even perform many administrative tasks. Familiarizing yourself with this environment is an essential part of becoming a developer on the Force.com platform.