

# Beginning Django E-Commerce



**JIM MCGAW**

Apress®

## **Beginning Django E-Commerce**

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The source code for this book is available to readers at <http://www.apress.com>. You will need to answer questions pertaining to this book in order to successfully download the code.

*This book is dedicated to my parents.*

*—Jim McGaw*

# Contents at a Glance

■ About the Author .....	xi
■ About the Technical Reviewer .....	xii
■ Acknowledgments .....	xiii
■ Introduction .....	xiv
■ Chapter 1: Best Laid Plans.....	1
■ Chapter 2: Creating a Django Site.....	17
■ Chapter 3: Models for Sale .....	39
■ Chapter 4: The Shopping Cart.....	79
■ Chapter 5: Site Checkout & Orders .....	109
■ Chapter 6: Creating User Accounts.....	153
■ Chapter 7: Product Images.....	173
■ Chapter 8: Implementing Product Search .....	179
■ Chapter 9: Intelligent Cross-Selling.....	193
■ Chapter 10: Adding in Ajax.....	205
■ Chapter 11: Search Engine Optimization .....	231
■ Chapter 12: Web Security Overview .....	255
■ Chapter 13: Improving Performance .....	279
■ Chapter 14: Django Testing .....	299
■ Chapter 15: Deployment .....	323
■ Chapter 16: Django on Google App Engine .....	341
■ Index.....	365

# Contents

■ <b>About the Author .....</b>	<b>xvi</b>
■ <b>About the Technical Reviewer .....</b>	<b>xvii</b>
■ <b>Acknowledgments .....</b>	<b>xviii</b>
■ <b>Introduction .....</b>	<b>xix</b>
■ <b>Chapter 1: Best Laid Plans.....</b>	<b>1</b>
Selling Stuff Online .....	2
Why Django? .....	4
Straying From the Django Philosophy .....	5
A Quick Word on the Software .....	5
A Note on Version Control.....	6
Firefox .....	6
Installing the Software .....	7
Installing Python .....	7
Installing Django.....	8
Installing MySQL.....	9
Installing Eclipse and the PyDev Extensions .....	9
Things to Consider Before You Start .....	9
Security .....	10
Accessibility .....	10
PCI Compliance.....	11
Search Engine Optimization .....	11
Deployment .....	12
Business Requirements .....	12
Accounting & Auditing .....	12
Supply Chain Management.....	13
Marketing Decisions.....	14
Summary .....	16

<b>Chapter 2: Creating a Django Site.....</b>	<b>17</b>
A Django-istic Welcome .....	17
Creating the Project.....	17
What Django Creates .....	18
Creating the MySQL Database .....	19
Dealing with Django Exceptions.....	22
Template & View Basics.....	23
Advanced Templates with Inheritance .....	25
Greater Ease with render_to_response() .....	28
Adding in the CSS .....	29
Location, Location, Location .....	34
A Site Navigation Include .....	35
A Word (or Two) About URLs .....	37
Summary.....	38
 <b>Chapter 3: Models for Sale .....</b>	 <b>39</b>
Databases 101 .....	40
An Introduction To SQL.....	40
What Makes a Relational Database .....	42
What Django Gives You – The ORM.....	44
Creating the Catalog App .....	45
Creating the Django Models.....	46
Model Field Data Types .....	48
Creating the Category Model.....	50
Creating the Product Model.....	54
The Django Admin Interface.....	56
Product and Category Admins .....	57
A Note on Model Validation .....	59
Syncing Up the Models.....	60
Playing with Model Structure and Data.....	64
Templates, URLs, and Views .....	65
Configuring Page Titles and Meta Tags.....	66
Coding Up the Catalog Views.....	68
Creating the Template Files.....	69
A Category Link List.....	73

Our Code in Review .....	73
So How Does It All Work? .....	75
File Not Found and Custom 404s.....	77
Summary.....	78
<b>Chapter 4: The Shopping Cart.....</b>	<b>79</b>
Shopping Cart Requirements .....	79
An Introduction to Sessions .....	80
The Shopping Cart Model .....	82
Django Sessions Overview .....	84
Enabling and Using Sessions .....	85
Using Django Forms.....	86
The Add To Cart Form.....	86
Processing the Form .....	88
Putting It All Together.....	89
Cart Form Code in Review .....	94
Creating the Shopping Cart Page .....	95
Django Template ‘if’ and ‘for’ Tags .....	96
Custom Template Filters .....	96
Creating the Cart Page .....	97
Adding Custom Template Tags .....	101
Re-creating the Category List Tag.....	103
Static Content with Flatpages .....	105
Navigation Tags.....	107
Summary.....	108
<b>Chapter 5: Site Checkout &amp; Orders .....</b>	<b>109</b>
Google Checkout API.....	109
Signing up with Google Checkout.....	110
Submitting Orders to Google .....	111
Building XML Documents in Python.....	112
Making HTTP Requests in Python.....	114
Your Google Merchant ID and Key .....	115
The Python Property Decorator .....	115
Creating the Checkout App.....	116

Order Checkout Requirements .....	124
SSL Middleware .....	124
DRY Models and Forms .....	126
Secure HTTP Requests .....	128
Credit Card Transactions .....	129
Order Checkout by Django .....	130
Signing up for an Authorize.Net Test Account.....	130
Order Information Models.....	131
The Checkout Form .....	133
Authorization and Capture .....	137
Order Processing.....	139
Checkout Views and URLs .....	141
Checkout Template and Order Form .....	143
Order Administration .....	149
Summary.....	151
<b>■ Chapter 6: Creating User Accounts.....</b>	<b>153</b>
Making Friends with the Source .....	153
Hooking Into Django's Authentication.....	154
Creating the Login & Registration Pages.....	156
The My Account Page.....	160
The Change Password Page.....	162
The Order Details Page.....	163
Django User Profiles.....	165
Abstract Base Classes.....	165
The Order Info Page.....	167
Updating the Checkout Page .....	169
Summary.....	171
<b>■ Chapter 7: Product Images.....</b>	<b>173</b>
Dealing with Images .....	173
Django Image Fields.....	174
Installing the Python Imaging Library .....	174
Database Changes.....	174
Editing the Model.....	175



Adding a New Image .....	176
Image Template Changes.....	177
Summary.....	178
<b>■ Chapter 8: Implementing Product Search .....</b>	<b>179</b>
Instant Search .....	179
Search Requirements.....	180
Model Managers.....	180
Complex Lookups with Q .....	182
Search Results Pagination.....	183
Implementing Search .....	184
The Search Module.....	185
Search Template Tags.....	187
Search View and Template.....	189
Third-Party Search Solutions .....	192
Summary.....	192
<b>■ Chapter 9: Intelligent Cross-Selling.....</b>	<b>193</b>
Product Page Recommendations .....	193
Order-Based Filtering .....	194
Customer-Based Order Filtering.....	195
A Hybrid Approach.....	195
Home Page Recommendations .....	196
Tracking Each User.....	197
Dealing with Searches.....	198
View-Based Recommendations.....	200
Building the Homepage.....	202
Summary.....	204
<b>■ Chapter 10: Adding in Ajax .....</b>	<b>205</b>
The Ajax Pros and Cons .....	205
How Ajax Works .....	207
jQuery for Ajax.....	208
Getting jQuery.....	208
jQuery Basics.....	209

JavaScript Object Notation .....	211
Making Ajax Requests .....	212
Product Reviews .....	213
Review Model and Form.....	213
Template and View Changes .....	214
The Ajax Part of this Equation .....	216
Adding a Product Review .....	219
Product Catalog Tagging.....	220
Getting Django-Tagging.....	220
Django Content Types.....	221
Enabling Product Tagging .....	222
Creating the Tag Cloud.....	224
JavaScript Finishing Touches .....	226
Summary.....	229
<b>■ Chapter 11: Search Engine Optimization .....</b>	<b>231</b>
The Importance of Inbound Links.....	232
Content is King .....	233
Title and Meta Tags .....	233
Keywords in URLs.....	234
Generating a Keyword List .....	235
The Duplicate Content Problem .....	236
Semantic Web - Microformats & RDFa.....	238
Launching the Site .....	240
Submit Your URL.....	240
robots.txt File.....	241
Sitemaps for Search Engines .....	242
Content Relocation .....	244
Google Webmasters .....	245
Google Analytics.....	246
The Data Warehouse Principle .....	247
Signing Up for Google Analytics .....	248
E-Commerce and Search Tracking.....	248
Google Base Product Feed .....	251
500 Server Errors .....	253

Summary .....	253
<b>Chapter 12: Web Security Overview .....</b>	<b>255</b>
Securing the Site From Within .....	255
Django Permissions .....	256
Applying Permissions to Users .....	257
Applying Permissions to Groups .....	257
Protecting Against External Attacks .....	258
The Evils of Debug Mode .....	258
Configuring Local Settings .....	259
Customer Registration Revisited .....	259
Cross-Site Scripting Attacks .....	262
What's in a QueryString? .....	263
Cross-Site Request Forgery .....	263
SQL Injection .....	265
Moving the Admin Interface .....	266
Storing Secrets .....	266
Storing Customer Passwords .....	267
Storing Credit Card Data .....	269
Symmetric Cryptography .....	270
Google Keyczar .....	271
A Credit Card Model and Form .....	273
Summary .....	278
<b>Chapter 13: Improving Performance .....</b>	<b>279</b>
The Database .....	280
Searching your Models .....	280
Avoiding Expensive Joins .....	281
Creating Database Indexes .....	283
Deleting Old Data .....	284
Caching with Memcached .....	287
The Virtue of Stale Data .....	287
Template Caching .....	288
The Low-Level Cache API .....	289
Django Signals for Cache Invalidation .....	291

A Quick Word about Django Signals .....	293
Front-End Engineering .....	293
Move CSS and JavaScript Into Separate Files.....	295
Reduce the Number of External Components.....	295
Optimize External Components .....	296
Summary.....	297
<b>■ Chapter 14: Django Testing .....</b>	<b>299</b>
Why We Test .....	299
How to Test Code .....	300
Creation of the Test Database .....	301
Python & Django Test Methods .....	301
Anatomy of a Test Class.....	303
Testing the Product Catalog.....	304
Writing Functional Tests.....	304
Managing Test State with Fixtures.....	307
Category Testing.....	309
Testing the ActiveProductManager .....	312
Product Catalog Model Tests .....	313
Testing Forms & Shopping Cart .....	315
Testing the Checkout Form .....	318
Security Testing .....	319
Summary.....	321
<b>■ Chapter 15: Deployment .....</b>	<b>323</b>
The Django Philosophy.....	324
Finding a Hosting Plan .....	325
Phase One: Apache and mod_wsgi.....	326
Installing the Apache Web Server .....	326
Creating the mod_wsgi File and Apache Virtual Host .....	328
Phase Two: Nginx for Static Media.....	331
Installing and Configuring NginX .....	331
Updating the Apache Virtual Host.....	333
Phase Three: Configuring SSL.....	334
Transferring Data with Django .....	338

The Admin Interface Styles .....	338
Summary.....	339
<b>■ Chapter 16: Django on Google App Engine .....</b>	<b>341</b>
The Inconvenient Truth .....	342
Signing Up For An Account .....	342
The Django App Engine Patch .....	343
Getting the Test Page Running.....	346
Our Google App Engine Store .....	346
The Brubeck Shopping Cart App .....	353
Views and Templates .....	356
Managing Database Indexes .....	361
Error Logs, Remote Data API, and Network Programming.....	362
Summary.....	364
<b>■ Index.....</b>	<b>365</b>

# About the Author



■ **Jim McGaw** is a web developer with several years experience developing data-driven web applications, particularly search-engine-friendly online catalog and shopping cart sites. He's very thankful that he gets to be a web developer for a living, and is a security, accessibility, and usability advocate. Despite his technical background, he remains in awe of people who are able to design web sites that are visually stunning.

Currently, he lives and works as a software engineer in Santa Barbara, California, where he enjoys hiking, ocean kayaking, and playing the guitar in his spare time. To send him feedback, comments, or questions, drop him a line at: [jim@django-ecommerce.com](mailto:jim@django-ecommerce.com).

# About the Technical Reviewer



■ **George Vilches** is a software engineer and systems administrator with an unabashed fondness for Python and the web in both disciplines. In the last three years, he has made several contributions to Django, with a focus on the ORM and administrative side of things. He was a principal engineer with Propeller (<http://propeller.com>), and continues to build Django applications with Fortune Cookie Studios, (<http://fcstudios.com>).

George's personal time is split evenly over tinkering with open source projects and enjoying the company of his wife Kate, corgi and two cats, all of whom would prefer he stop tinkering and attend to them more.

# Acknowledgments

A good deal of effort other than my own went into the writing of this book, and I'm grateful to all who helped. Most notably, I'd like to thank the technical reviewer, George Vilches, for his valuable contributions to this book. George strikes me as an extremely knowledgeable person in several different areas as well as a tireless worker, and he really contributed a lot of valuable suggestions. His efforts in reviewing this book are probably near-deserving of co-author credit, and I thank him.

I'd like to thank those on the Apress staff with whom I worked directly, namely James Markham, Duncan Parkes, and Douglas Pundick, whose efforts brought this book together, and to Ralph Moore, who transformed the grammatical sludge of the original writing into a much more readable text. I'd also like to extend my thanks to those people whose names I won't know until I see them on the copyright page of this book in print. That being said, while I had a lot of help, the occasional error might still be lurking in the text. These errors are my fault and not theirs.

I owe a debt of gratitude to my friend Mark Pellerito, who initially got me started doing computer programming, and was always there to answer all the technical questions spewing forth from my knowledge-hungry brain. I'm in this whole mess because of you. Thanks.

Lastly, I'd like to thank Tara, who supported and endured me the whole time I was writing this book. Thanks for making me the luckiest guy on the planet.



# Introduction

I read a lot of technical books about software and computer programming. This isn't because I have a great fondness for reading, nor do I actually like owning a massive collection of computer books that's slowly beginning to overtake every room in my home. I do it because at any given time, I'm usually working on a programming project and am faced with a dozen problems that I need to solve. These unsolved problems fester in my head. They scrape away at the surface of my brain like jagged rusty metal hooks. These books provide me sweet relief from these pains.

In my experience, there are two types of computer books: those that act as reference guides and those that act as tutorials. This book falls squarely in the latter category. While you need both tutorial and reference books in order to learn something, I tend to like tutorial books better, simply because they aid you in making better use of the reference books. For this reason, over the course of this book, we will be building one single Django project, to which we will add new features with each chapter and learn new parts of the Django web framework as we go.

There are lots and lots of Django apps floating around on the web. Many of these will contain perfectly good—and in some cases, absolutely spectacular—working code that you can use on your site. In other cases, the code is less than great, but still works. While I've taken a snippet of code from the open source community here and there throughout this book, I've mostly gone the do-it-myself route and implemented things from scratch. The reason for this is simple: when you're learning, rolling your own solutions at a lower level instead of just plugging in an app you found ready-made on Google Code or Django Snippets is much better for making the basic concepts stick to your brain. The drawback of this approach, of course, is that there are parts of the site we're going to develop in this book that are greatly simplified.

However, when you use snippets of code samples that are posted in various corners of the Internet by people all over world, you will still encounter problems. You'll get weird errors when you hook the new code into your site, and you'll end up having to read the Django docs and Django blogs and Django books to determine what's going wrong. My hope is that, after working through the examples in this book, you'll not only be much more adept at developing complex and powerful code with Django from scratch, you'll also have a much better grasp of dealing with these kinds of integration problems with existing third-party solutions when they arise. On top of this, you might also find yourself working to extend the functionality of an existing solution to suit your own needs, which is a good ability to have as well.

## Who This Book Is For

This book is aimed at developers who are interested in learning more about the process of how to create a Django web site. Over the course of the book, we're going to create a single working e-commerce web site that we'll deploy into production at the very end. In each chapter, we'll tackle a particular feature or group of features that we want to add to the site, outline the requirements and discuss the related concepts, and then write code to implement each feature using Django. This will allow you to see how the different parts of a single Django project all fit together. In the end, you'll have a thorough grasp of

how a Django web application is created, secured, optimized for search engines, tested, and finally deployed.

We're going to create a shopping cart site in this book, and while some of the sections cover problems that are specific to e-commerce web sites, most of the content has applications to other types of sites as well. For example, Chapter 8 covers implementation of internal site search so that customers can find things in our product catalog. Search functionality is a requirement of almost any data-driven web site. In Chapter 4, we create a shopping cart for our product catalog, allowing customers to aggregate products before they check out, and here you'll learn more about how you can use Django sessions in order to track information about your customers, whether or not they are logged in. The checkout functionality created in Chapter 5 covers the basics of Python network programming in order to integrate with third-party payment gateways, and the material covered is useful to anyone interested in integrating Django with web services.

This book does assume familiarity with the Python programming language. If you're a complete beginner and have never worked with Python, don't worry... it's a very simple language and you'll be able to catch on very quickly. If you're new to programming and would like an introduction, I'd suggest you take a look at *Beginning Python: Second Edition*, by Magnus Lie Hetland (Apress, 2008). If you're already familiar with at least one other programming language and just need to get caught up on the syntax of Python, I can heartily recommend you read *Dive Into Python*, by Mark Pilgram (Apress, 2004).

## The Web Sites In This Book

In this book, I'm going to build a fictional e-commerce site that sells musical instruments and sheet music. The name of the site is "Modern Musician." Developers in the Django community have a penchant for naming their apps and projects after old-time musicians, like John Coltrane, Louis "Satchmo" Armstrong, and Duke Ellington. This tradition was started by the creators of the Django web framework, who chose to name it after guitarist Django Reinhardt, who is regarded by many as one of the greatest jazz guitarists of all time.

It didn't dawn on me until around the time I started writing Chapter 13 that the name "Modern Musician" might be construed as a tongue-in-cheek reference to this tradition in the Django community. In my defense, I originally created the Modern Musician e-commerce site in PHP, as a demo e-commerce site. Later, I implemented roughly the same Modern Musician site using Ruby on Rails, for the sole purpose of learning Rails. So when I got around to spawning this little project in Django, the last thing on my mind when naming the project was any attempt at ridicule. I did so out of tradition.

In the first 15 chapters of this book, we're going to build a single e-commerce web site. For those interested, the site we're going to create is available for public viewing at <http://www.django-e-commerce.com/>. While an administrative interface is part of the site that we're going to create in this book, the public site does not permit altering of data in the product catalog.

In Chapter 16, when we look at putting Django projects up on the Google App Engine, we're going to create a minimal shopping cart site, which is also available for public viewing at <http://django-e-commerce.appspot.com/>.

## Source Code and Errata

We're going to write a lot of code in this book. It's not an overbearing amount, as Python is a very concise language and Django syntax tends to reduce the amount of repetitive code that you need to write. In spite of this, you still might find yourself wanting to have a copy of the code on hand so that you

don't have to type in every last line. The source code for the site we're going to create in this book is available for download from the Apress web site.<sup>1</sup> (There's also a bunch of awesome books on there.)

If you happen to be reading a digital version of this book on your computer and have the option of selecting text, I'd be careful about copying code from your screen into your editor. Some characters might not transfer from electronic versions of this book into IDEs very well, as they might confuse the Python interpreter. You're much safer just typing it in yourself. You've been warned.

Lastly, while everyone has worked really hard to ensure that this book is grammatically and technically correct, some grammatical and technical "bugs" may have slipped in under our reviewing eyes. ("Bug" is a nice euphemism for "mistake," isn't it?) If you find an error and would like to politely rub it in my face, please feel free to submit it to this book's errata page on the Apress web site.<sup>2</sup>

If you'd like to contact me with any questions or concerns you have about the content of this book, shoot me an e-mail at: [jim@django-e-commerce.com](mailto:jim@django-e-commerce.com).

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<sup>1</sup> <http://www.apress.com/book/sourcecode>

<sup>2</sup> <http://www.apress.com/book/view/1430225351>