



Part 3: Advanced Web Development with Django

Real Python Part 3: Advanced Web Development with Django

Jeremy Johnson

Contents

| | | |
|----------|------------------------------------------------|-----------|
| 1 | Preface | 5 |
| | Thank you | 5 |
| | License | 6 |
| | Conventions | 7 |
| | Course Repository | 9 |
| | Errata | 10 |
| 2 | Introduction | 11 |
| | Welcome to Advanced Web Programming! | 11 |
| | Why this course? | 13 |
| | What is Software Craftsmanship? | 14 |
| | What will you learn? | 15 |
| | What will you build? | 16 |
| 3 | Software Craftsmanship | 19 |
| | Testing Routes and Views | 25 |
| | Refactoring our Tests | 39 |
| | Testing Models | 44 |
| | Testing Forms | 52 |
| | Testing Summary | 56 |

| | | |
|----------|-----------------------------------------------------------------------|------------|
| 4 | Test Driven Development | 59 |
| | The TDD Workflow | 60 |
| | Implementing TDD with Existing Code | 62 |
| | Django Ecommerce Project | 63 |
| | Offense is only as good as your worst defense | 73 |
| | Conclusion | 79 |
| | Exercises | 80 |
| 5 | Git Branching at a Glance | 81 |
| | Git Branching | 82 |
| | Branching Models | 83 |
| | Enough about git branching | 93 |
| | Exercises | 94 |
| 6 | Upgrade, Upgrade, and Upgrade some more | 95 |
| | Django 1.7 | 95 |
| | The Upgrade | 96 |
| | DiscoverRunner | 100 |
| | Update Project Structure | 102 |
| | Upgrading to Python 3 | 104 |
| | Python 3 Changes Things Slightly | 118 |
| | Upgrading to PostgreSQL | 119 |
| | Conclusion | 124 |
| | Exercises | 125 |
| 7 | Graceful Degradation and Database Transactions with Django 1.7 | 126 |
| | What is Graceful Degradation? | 127 |
| | User Registration | 128 |
| | Handling Unpaid Users | 133 |
| | Improved Transaction Management | 136 |

| | |
|------------------------------------------------------------------------------|------------|
| What is a transaction? | 137 |
| What's wrong with transaction management prior to Django 1.6? | 138 |
| What's right about transaction management in Django 1.6 and above? | 140 |
| SavePoints | 146 |
| Nested Transactions | 149 |
| Completing the Front-end | 151 |
| Conclusion | 153 |
| Exercises. | 155 |
| 8 Building a Membership Site | 157 |
| It's time to make something cool | 158 |
| A Membership Site | 159 |
| The User Stories | 160 |
| 9 Bootstrap 3 and Best Effort Design | 162 |
| Start with the User Story | 163 |
| Overview of what we have | 164 |
| Installing Bootstrap 3 | 165 |
| Making Bootstrap your own | 170 |
| HTML5 Sections and the Semantic Web | 177 |
| More Bootstrap Customizations | 183 |
| Custom template tags | 190 |
| A Note on Structure | 195 |
| Conclusion | 199 |
| Exercises | 200 |
| 10 Building the Members Page | 202 |
| User Story | 203 |
| Update Main Template | 204 |
| Template 1: Showing User Info for the Current User | 206 |

| | |
|-----------------------------------------------------|------------|
| Gravatar Support | 211 |
| Template 2: Status Updating and Reporting | 214 |
| Template 3: Displaying Status Updates | 220 |
| Exercises | 223 |
| 11 Appendix A - Solutions to Exercises | 224 |
| Software Craftsmanship | 224 |
| Test Driven Development | 230 |
| Bootstrap 3 and Best Effort Design | 237 |
| Building the Members Page | 252 |