

Exercise 2.3: Django Models

Learning Goals

- Discuss Django models, the “M” part of Django’s MVT architecture
- Create apps and models representing different parts of your web application
- Write and run automated tests

Reflection Questions

1. Do some research on Django models. In your own words, write down how Django models work and what their benefits are.

Django Models Overview

How Django Models Work:

- **Class Representation:** Models are defined as Python classes, where each attribute corresponds to a database field.
- **ORM:** Django uses Object-Relational Mapping (ORM) to translate Python objects into database queries, eliminating the need for raw SQL.
- **Migrations:** Changes in models automatically generate migrations to update the database schema.
- **CRUD Operations:** Django models automatically provide Create, Read, Update, and Delete operations for data management.

Benefits of Django Models:

- **Simplified Database Interaction:** Interact with databases using Python, avoiding complex SQL.
- **Database-Agnostic:** Easily switch between different database backends.
- **Built-in Validation:** Ensure data integrity with automatic validation.
- **Scalability:** Manage database structure changes smoothly through migrations.
- **Admin Integration:** Automatically generate an admin interface for data management.

2. In your own words, explain why it is crucial to write test cases from the beginning of a project. You can take an example project to explain your answer.
 - a. Test cases help write functional error-free code as they ensure from the very beginning that the code built will adhere to the requirements.
 - b. Another benefit is that it helps with creating documentation from the very beginning as test cases basically describe functionality and expected results.

- c. Tests will also ensure the code is reliable and doesn't break from the start which also makes development more consistent and efficient.