

django python basics



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# Django Python Basics

## 1. Introduction

- Django is a high-level Python web framework that enables rapid development of secure, maintainable, and scalable web applications.
- It provides an architecture, templates, and APIs for building web applications quickly and efficiently.

## 2. Project Structure

- A Django project consists of:
  - `manage.py`: a command-line utility for managing the project.
  - `mysite` (or your project name): the top-level directory containing the project configuration and apps.
  - `apps`: individual applications within the project, each with its own directory structure.

## 3. Apps

- An app is a self-contained web application that can be reused across multiple projects.
- Each app has its own:
  - `models.py`: defines database models using Django's ORM (Object-Relational Mapping).
  - `views.py`: defines URL handlers and business logic.
  - `urls.py`: defines URL patterns for the app.
  - `templates`: directory for HTML templates.

## 4. Models

- Django's ORM provides a high-level interface for interacting with databases.
- Models are defined in `models.py` using Python classes, which are then used to create and manipulate database tables.

## 5. Views

- Views are functions that handle HTTP requests and return responses.
- They are defined in `views.py` and are typically associated with specific URLs.

## 6. URLs

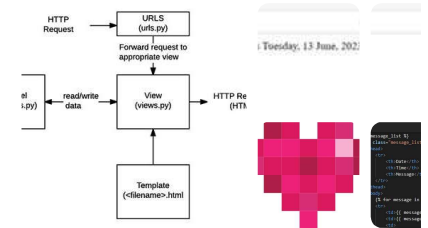
- URLs are defined in `urls.py` using the `path()` function from `django.urls`.
- They map URLs to views and can include parameters and regular expressions.

## 7. Templates

- Django provides a templating engine for rendering HTML templates with dynamic data.
- Templates are stored in the `templates` directory and can be extended and overridden.

## 8. Forms

- Django provides a form library for handling user input and validation.



## 9. Authentication and Authorization

- Django includes a built-in authentication and authorization system.
- Users can be created and managed, and permissions can be assigned to control access to views and data.

## 10. Debugging and Testing

- Django provides a built-in debugger and testing framework.
- The `runserver` command enables interactive debugging, and unit tests can be written using the `unittest` framework.

## Key Concepts

- MVT (Model-View-Template) architecture
- ORM (Object-Relational Mapping)
- URL routing and dispatching
- Template inheritance and extension
- Form validation and processing


## Best Practices


- Keep your code organized and modular
- Use meaningful variable and function names
- Follow PEP 8 coding conventions
- Use Django's built-in features and tools whenever possible


## Resources


- Official Django documentation: <https://docs.djangoproject.com/>
- Django Girls Tutorial: <https://tutorial.djangogirls.org/>
- Python documentation: <https://docs.python.org/>





Remember, this is just a brief overview of Django's basics. For a more comprehensive understanding, I recommend exploring the official documentation and tutorials.

 [dj django project.com](https://docs.djangoproject.com/)  
Getting started with Django

 [code.visualstudio.com](https://code.visualstudio.com/)  
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## Django Tutorial

March 25, 2022 - W3Schools offers free online tutorials, references and exercises in all the major languages of the web. Covering popular subjects like HTML, CSS, JavaScript, Python, SQL, Java, and many, many more.