Frameworks

Frameworks

Scaffolding for creating applications.

A Framework contains an "almost" complete app code, including logic for the flow of control.

You must supply

- configuration data (text file, XML, Json, ...)
- missing methods, "slots"

And optionally

- override some frameworks methods with custom code
- add callbacks, "hooks", for extra functionality

Handling a web request

(1) A web client submits a web request:

```
https://superstore.com/products/list
```

an https packet is sent to the superstore.com server...

GET /products/list

(2) A host (server) connects tcp socket to web server listening on port 443.

http server for web apps & static content

listen *:443

Http Server hands off to web app

(3) The web server gives the web request (or stream) to the web application.
The web server may do some pre-processing first.

Decide which code should handle it

(4) django framework parses the http request and creates a **HttpRequest** object containing request path, headers, session info, query params, and request body.

(5) django framework compares the **request path** `/products/list/` to a "**routing**" or "**url mapping**" specified by the app.

HttpRequest object
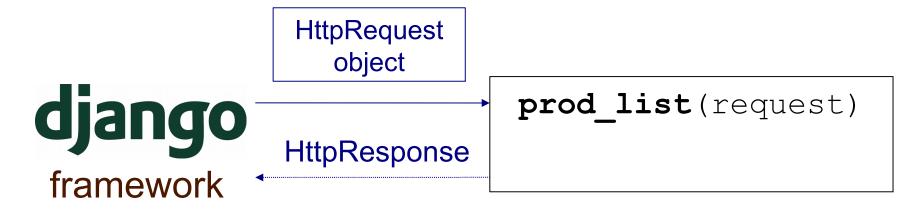
django
framework

```
          urls.py
      path --> code
      pattern --> code2
urlpatterns = [
  path('products/list/', prod_list),
  ...]
```

Your "controller" handles the request

Django framework invokes your code (`prod_list`) with the `HttpRequest` object as parameter...

(6) your code must handle the request and return an HttpResponse object.

HttpRequest object

django
framework

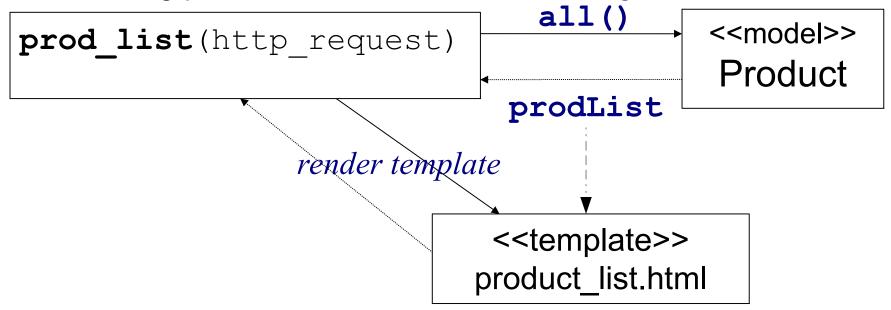prod_list(request)

HttpResponse

What your "controller" does

(7) Your controller (Django: "view") applies application logic and uses the Django framework code to handle the request.

For a product list, it uses the Product *model* class to get the products from a database (the Django framework does this).
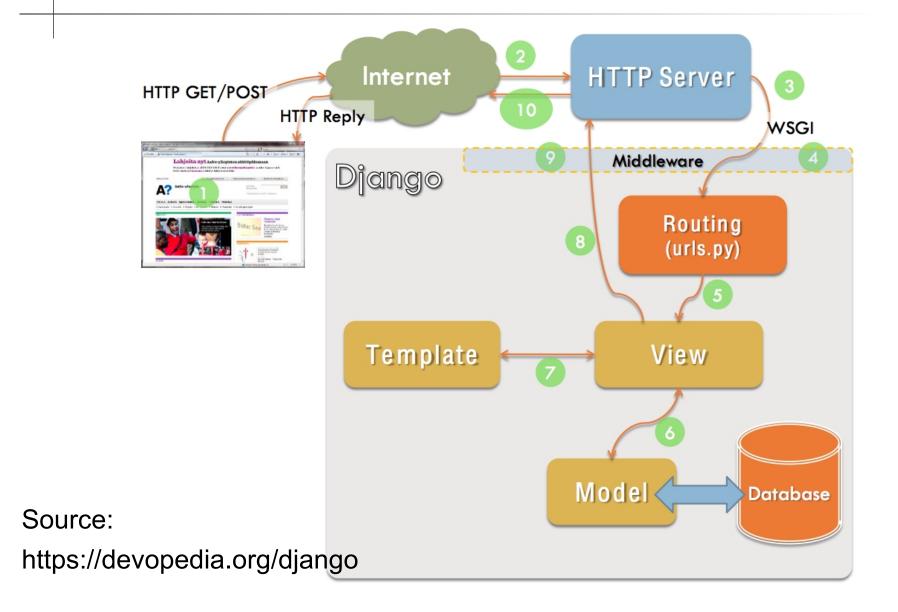
Then, use a template (your code) to create a web page containing products. This is called *rendering*.

all()

prod_list(http_request)

<<model>>
Product

prodList

render template

<<template>>
product_list.html

Web App Vocabulary

What	Typical Web Framework	Django
Mapping of request path to code	routing, url mapping	routing, uses urls.py
Code that handles requests	controller	view
Class that represents something in the app domain	model	model
Code or template to generate a web page	view	template
Process a template with data to create a web page	rendering	rendering

Summary

Source:

https://devopedia.org/django

Resources