



# Django & GeoDjango

*Fullstack python framework for geospatial web*

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7 - 15 Oktober 2023



# Biodata Diri



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GIS related projects

- WebGIS – Indonesia Tourism Development Project
- Geoportal Cagar Budaya - Ertim Conservation Institute



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# Full-stack WebGIS Course

1. GIS fundamental
2. Introduction to HTML & CSS
3. Front-end Development with JavaScript
4. JavaScript Mapping Library
5. Build a Geo API
6. Working with Spatial Database
7. Python Fundamental
8. Backend Development for Geospatial Applications
9. WebGIS Project: Tourism WebMap in Bikini Bottom

*From A to Z*

# Fullstack WebGIS Course

*Geocourse.id Special Course for All!*



*Are You Interested?*



# Full-stack WebGIS course roadmap

## GIS Fundamental

2 sessions ~ QGIS

## HTML & CSS

2 sessions ~ HTML & CSS

## JavaScript

4 sessions ~ JavaScript

## Spatial Database

3 sessions ~ PostgreSQL & PostGIS

## Geospatial API

3 sessions ~ GeoServer

## JavaScript for Map

3 sessions ~ Openlayers & Leaflet

## Python

3 sessions ~ Python

## Backend Framework

4 sessions ~ Django

## Final Project

6 sessions



# Apa itu Django?

Django is a **high-level** Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

[www.djangoproject.com](http://www.djangoproject.com)

The Django logo, featuring the word "django" in a white, lowercase, sans-serif font, centered within a dark green rounded rectangle.



# Kenapa menggunakan Django?

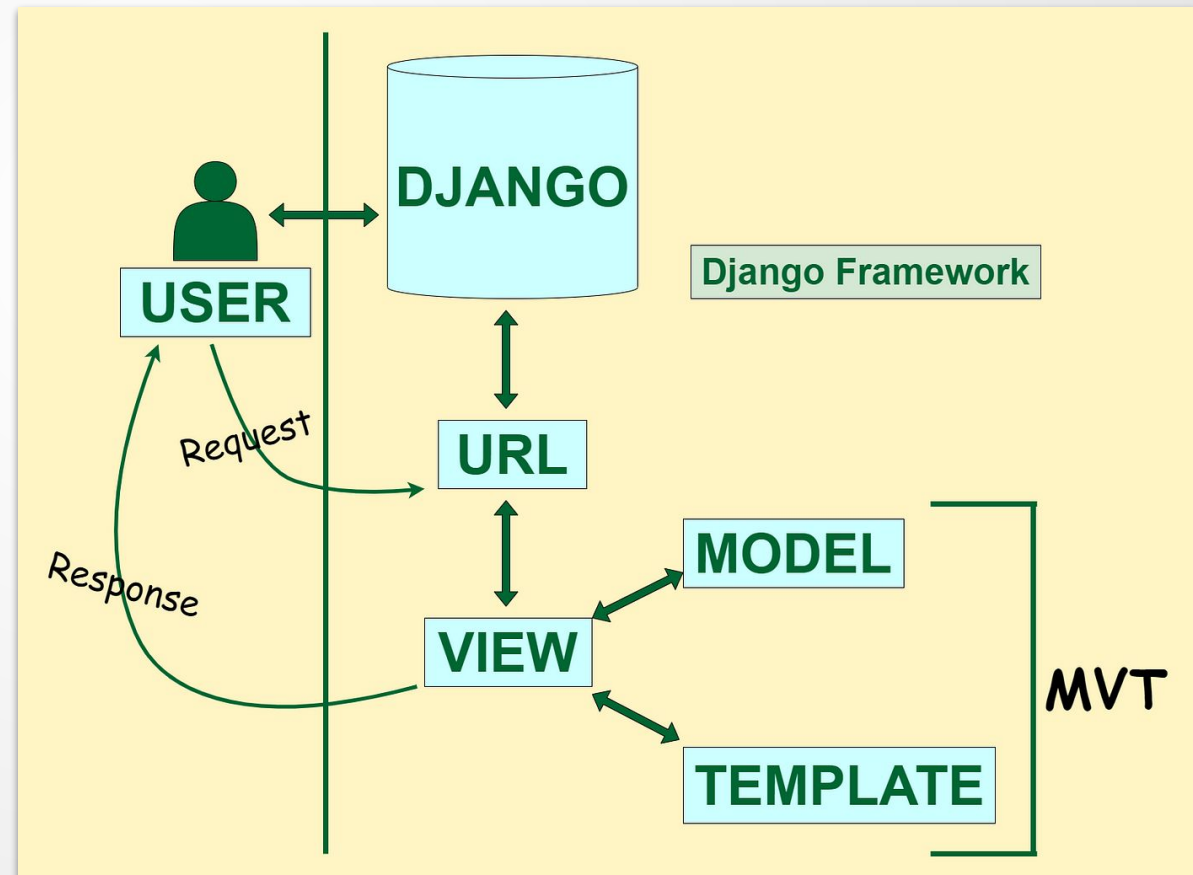
- **Security**, django memiliki default sistem security yang baik
- **High-level**, django mudah dipelajari jika memiliki basic python yang baik
- **Scalable**, django cocok untuk membuat project skala besar
- **Built-in geospatial**, fitur geospasial sudah tersedia di django sehingga tidak perlu membuat dari nol





# Arsitektur MVT Django

Web framework merupakan software yang dibangun untuk menjalankan aplikasi berbasis web. Django sebagai sebuah web framework menjalankan konsep Model-View-Template (MVT).





URL Request

Home | Bikini Bottom

bikinibottom.azfaiz.com


Bikini Bottom City

Welcome to **Bikini Bottom** Tourism Website

Login Sign-up

Find your **best experiences** in **Bikini Bottom**

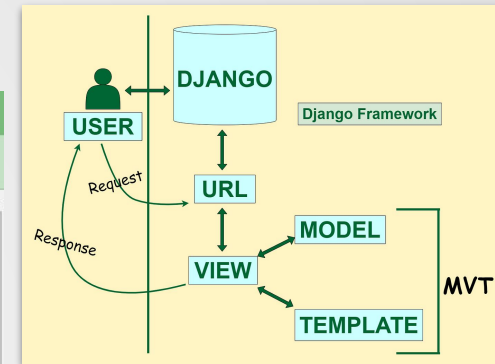
Patrick's House

Type	house
Open	<input checked="" type="checkbox"/>
Price	3500.00
Price Unit	annual
Photo	
Rating	No review
Reviews	No review

500 m

Bikini Bottom City Council | Leaflet | © OpenStreetMap contributors

Model Data



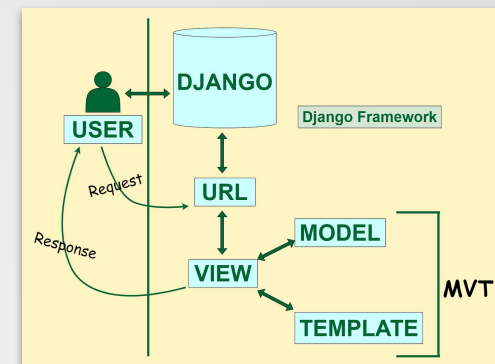
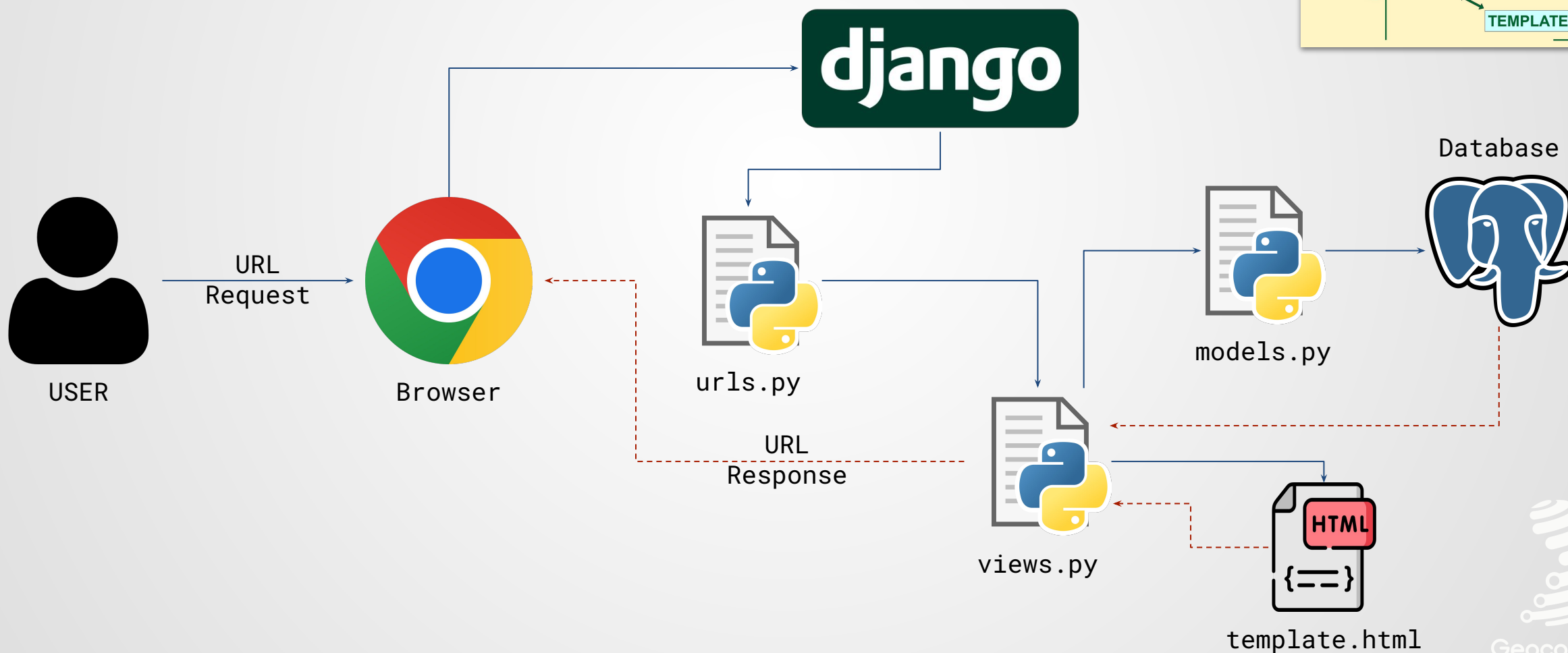
View Response

HTML Template





# Arsitektur MVT Django





# Arsitektur MVT Django

Untuk menggunakan framework django, pastikan mesin komputer sudah terinstal:

- Python + venv (optional, disarankan menggunakan venv)
- Database → PostgreSQL & PostGIS
- Django – instalasi melalui `pip install django`

Opsional

- GeoServer, untuk edit data di luar environment web browser
- QGIS, untuk mengelola data melalui aplikasi GIS





# Django Built-in Admin Site

Keuntungan dari menggunakan django salah satunya adalah framework ini memiliki situs admin bawaan. Fitur ini berguna untuk testing maupun penggunaan untuk mengelola django site dengan kode minimal.

The screenshot displays the Django administration interface. At the top, a dark blue header contains the text 'Django administration' on the left and 'WELCOME, UBUNTU. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)' on the right. Below this is a light blue breadcrumb trail: 'Home > Catalog > Books'. The main content area is white and titled 'Select book to change'. In the top right corner of this area is a button labeled 'ADD BOOK +'. Below the title, there is an 'Action:' dropdown menu with a downward arrow, a 'Go' button, and the text '0 of 3 selected'. A list of books follows, each with a checkbox and a label: 'BOOK', 'The Wise Man's Fear', 'The Dueling Machine', and 'The Name of the Wind'. At the bottom of the list, it says '3 books'.



# GeoDjango

GeoDjango adalah fitur built-in Django untuk menjalankan fungsi geospasial dalam sebuah web framework. Tujuan fitur ini yakni untuk mempermudah pembuatan aplikasi WebGIS.

Untuk menggunakan GeoDjango perlu setup tambahan seperti:

- Instalasi GDAL, GEOS dan PROJ
- Instalasi Database Spasial

<u>Database</u>	<u>Library Requirements</u>	<u>Supported Versions</u>	<u>Notes</u>
PostgreSQL	GEOS, GDAL, PROJ, PostGIS	12+	Requires PostGIS
MySQL	GEOS, GDAL	8+	Limited functionality
Oracle	GEOS, GDAL	19+	XE not supported
SQLite	GEOS, GDAL, PROJ, SpatiaLite	3.21.0+	Requires SpatiaLite 4.3+

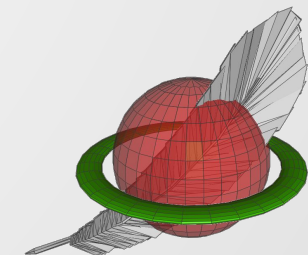
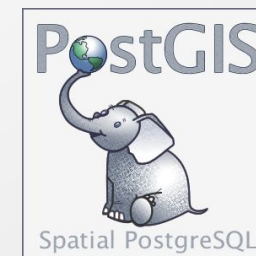






# Framework Geospasial

<u>Program</u>	<u>Description</u>	<u>Required</u>	<u>Supported Versions</u>
GEOS	Geometry Engine Open Source	Yes	3.11, 3.10, 3.9, 3.8, 3.7, 3.6
PROJ	Cartographic Projections library	Yes (PostgreSQL and SQLite only)	9.x, 8.x, 7.x, 6.x, 5.x
GDAL	Geospatial Data Abstraction Library	Yes	3.6, 3.5, 3.4, 3.3, 3.2, 3.1, 3.0, 2.4, 2.3, 2.2
GeoIP	IP-based geolocation library	No	2
PostGIS	Spatial extensions for PostgreSQL	Yes (PostgreSQL only)	3.3, 3.2, 3.1, 3.0, 2.5
Spatialite	Spatial extensions for SQLite	Yes (SQLite only)	5.0, 4.3



# Get in touch with me at



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