

The background features abstract, overlapping geometric shapes in various shades of purple and blue, creating a modern, layered effect. The shapes are primarily triangular and polygonal, with some areas appearing more translucent than others.

Course Module 1: Course Unit 10: Django (Fundamentals)

Week 13

Django (Fundamentals)

Objectives:

- Classify Django fundamentals.
- Categorize Django fundamentals.
- Generate a Django model using Django fundamentals.

The background features abstract, overlapping geometric shapes in various shades of purple and blue, primarily concentrated on the right side of the image. The shapes include triangles and polygons of different sizes and orientations, creating a dynamic, layered effect. The colors range from light lavender to deep indigo and dark blue.

Django

Django

- high-level Python web application framework (enables the rapid development of web applications)

Django

- backend framework used to resolve problems of connectivity with databases, other server problems, SEO (Search Engine Optimization) solutions

Django

- Django is a registered trademark of the Django Software Foundation, and is licensed under BSD License.

Berkeley Source Distribution - low restriction type of license for open source software that does not put requirements on redistribution.

History of Django

History of Django

- 2003 – Started by Adrian Holovaty and Simon Willison as an internal project at the Lawrence Journal-World newspaper.
- 2005 – Released July 2005 and named it Django, after the jazz guitarist Django Reinhardt.
- 2008 - Django has continued to grow and improve, from its first milestone release (1.0) in September
- 2022 - will be release version 4.0

Django – Design Philosophies

Django – Design Philosophies

- **Loosely Coupled** – Django aims to make each element of its stack independent of the others.
- **Less Coding** – Less code so in turn a quick development.

Django – Design Philosophies

- **Don't Repeat Yourself (DRY)** – Everything should be developed only in exactly one place instead of repeating it again and again.
- **Fast Development** – Django's philosophy is to do all it can to facilitate hyper-fast development.

Django – Design Philosophies

- **Clean Design** – Django strictly maintains a clean design throughout its own code and makes it easy to follow best web-development practices.

Features of Django

Features of **django**

01

Excellent Documentation

05

Python Web-framework

02

SEO Optimised

06

High Scalability

03

Versatile in Nature

07

High Security

04

Thoroughly Tested

08

Rapid Development

Features of Django

- **Excellent Documentation** - Django despite being the open source project, it provides wonderful documentation and its documents are always up to the mark by Django developers.

Better documentation of any technology is like a very well-established library for any developer.

Features of Django

- **SEO Optimized** - SEO stands for “Search Engine Optimization”, a process for increasing the quantity and quality of traffic to your website through organic search engine results.

Features of Django

- **Versatile in Nature** - Django is very versatile in its own Django way. By giving us the files it is providing us with a solid foundation which can then be used to make whichever application we want to create.

All that with integration with almost all the technologies out there with upgradations is by fulfilling the industry standards.

Features of Django

- **Thoroughly Tested** - Django is a time-tested framework and has been improving over the course of time.

“Humans get wiser with age; a software makes better decisions over time”.

Features of Django

- **Python Web-framework** - Python is also one of the main reasons people started learning Django. It is that one tool which can solve all your problems and in any kind of operation out there, we can use it.

Features of Django

- **High Scalability** - Scalability for any technology is a big factor when using the technology on larger projects with wide coverage. Django can utilize all the hardware you throw at it and still, it can develop on smaller scale systems.

It is based on a “share-nothing architecture”, which means you can add hardware at any level like database, servers, web servers and cache servers.

Features of Django

- **High Security** - Django by default resolves lots of security issues which are there in frameworks. Django does so, by dynamically generating web pages and using templates to send information to web-browsers, from direct viewing of the internet.

Features of Django

- **Rapid development** - means that we won't need expert backend knowledge to make a fully functional website. We will also not create separate server files to design the database and connect the same while also making another file for transferring data to and from the server. Django handles this work and a lot of other tasks. We won't need extra files for each task.

django Advantages and Disadvantages

ADVANTAGES

01

Implemented in Python

03

Batteries Included Framework

05

Rapid-Development

07

Secured

Better CDN Connectivity & Content Management

02

Fast Processing

04

Scalable

06

DISADVANTAGES

Monolithic

01

Not for Smaller Projects

02

Regular Expression for URLs

03

Advantages of Django

Advantages of Django

- **Implemented in Python** – Python and the Django Framework is implemented using the same language, so that gives it immense support in backend while compromising nothing in front-end.

Advantages of Django

- **Better CDN connectivity and Content Management** - Content Delivery Networks (CDN) are special servers having the multimedia and content that are geographically located near the client.

Advantages of Django

- **Better CDN connectivity and Content Management** - Django provides libraries and developers to use it as a CMS (Content Management System) due to its great Admin Interface, which makes it rather easy to set up and run CDNs.

Sites highly use CDNs by they which deliver you the multimedia content, like YouTube, Instagram, Google, etc.

Advantages of Django

- **Batteries Included Framework -**
Django is made by web-developers for web-developers, so of course, it will resolve the general issues and problems that developers face.

Advantages of Django

- **Fast Processing** - Django uses the MTV architecture which makes the whole process of transmitting over the Internet easier and faster as the resources can be put on a CDN. Django server handles things pretty well, while also maintaining the Speed.

Advantages of Django

- **Offers Rapid-development** - The reason to fast development speed is that the Django's MTV Architecture implements with the philosophy of loosely coupled components. It means that we can work on different components parallel and then can integrate much more easily.

Advantages of Django

- **Scalable** - Django is based on loosely coupled architecture, which provides it the functionality to add hardware at any point of components as they will manage that change. And, will have little to no effect on other components, which is seriously not the case in other frameworks.

Advantages of Django

- **Security** - Django framework is made by world's best web-developers who have a great experience and knowledge. So, that leaves a very small possibility of security loopholes in Django, even in the user authentication system.

Additional Advantages of Django

Advantages of Django

- **Object-Relational Mapping (ORM) Support** – Django provides a bridge between the data model and the database engine, and supports a large set of database systems including MySQL, Oracle, Postgres, etc.

Advantages of Django

- **Multilingual Support** – Django supports multilingual websites through its built-in internationalization system.
- **Framework Support** – Django has built-in support for Ajax, RSS, Caching and various other frameworks.

Advantages of Django

- **Administration GUI** – Django provides a nice ready-to-use user interface for administrative activities.
- **Development Environment** – Django comes with a lightweight web server to facilitate end-to-end application development and testing.

Disadvantages of Django

Disadvantages of Django

- **Monolithic** - Django has a certain set of files and pre-defined variables.

It is because the framework has a way, popularly known as “*The Django way*” of doing things. If you don’t follow those rules, you may not be able to deploy anything using Django.

Disadvantages of Django

- **Not for smaller projects** - All the functionality of Django comes with lots of code. It takes server's processing and time, which poses some issues for low-end websites which can run on even very little bandwidth.

Applications???

Any questions???

REFERENCES:

- Django Tutorial. (2022). <https://data-flair.training/blogs/django-tutorial/>
- Django Tutorial. (2020). <https://www.geeksforgeeks.org/django-tutorial/>
- Django Tutorial. (2022). <https://developer.mozilla.org/en-US/docs/Learn/Server-side/Django/Introduction>
- Django Tutorial. (n.d.). <https://www.tutorialspoint.com/django/index.htm>
- Django Tutorial. (n.d.). <https://www.w3schools.com/django/index.php>
- Getting started with Django. (n.d.). <https://www.djangoproject.com/start/>