



Chapter-1

Introduction

To

Web Development

And

Django



Web Application:

The applications which will provide services over the web are called web applications.

Eg: gmail.com, facebook.com, durgasoftvideos.com etc

Every web application contains 2 main components

- 1) Front-End
- 2) Back-End

1) Front-End:

- It represents what user is seeing on the website
- We can develop Front-End content by using the following technologies:
- HTML, JS, CSS, JQuery and BootStrap
- JQuery and Bootstrap are advanced front-end technologies, which are developed by using HTML, CSS and JavaScript only.

HTML:

- HyperText Markup Language
- Every web application should contain HTML. i.e HTML is the mandatory technology for web development. It represents structure of web page

CSS: Cascading Style Sheets

- It is optional technology, still every web application contains CSS.
- The main objective of CSS is to add styles to the HTML Pages like colors, fonts, borders etc.

Java Script:

- It allows to add interactivity to the web application including programming logic.
- The main objective of Java Script is to add functionality to the HTML Pages. i.e to add dynamic nature to the HTML Pages.
- HTML → Meant for Static Responses
- HTML+JS → Meant for Dynamic Responses
- Eg 1: To display "Welcome to DURGASOFT" response to the end user only HTML is enough, b'z it is static response.
- Eg 2: To display current server date and time to the end user, only HTML is not enough we required to use some extra technology like JavaScript, JSP, ASP, PHP etc as it is dynamic response.



Static Response vs Dynamic Response:

If the response is not varied from time to time and person to person then it is considered as static response.

Eg: Login Page of Gmail
Home Page of ICICI Bank

If the response is varied from time to time and person to person then it is considered as dynamic response.

Eg: Inbox Page of Gmail
Balance Page of ICICI Bank

2) Back End:

- It is the technology used to decide what to show to the end user on the Front-End.
- ie Backend is responsible to generate required response to the end user, which is displayed by the Front-End.
- Back-End has 3 important components:
 - 1) The Language like Java, Python etc
 - 2) The Framework like Django, Pyramid, Flask etc
 - 3) The Database like SQLite, Oracle, MySQL etc
- For the Backend language Python is the best choice b'z of the following reasons:
Simple and easy to learn, libraries and concise code.
- For the Framework Django is the best choice b'z it is Fast, Secure and Scalable. Django is the most popular web application framework for Python.
- Django provides inbuilt database which is nothing but SQLite, which is the best choice for database.
- The following are various popular web applications which are developed by using Python and Django
- YouTube, Dropbox, Quora, Instagram, Reddit, Yahoo Maps etc

Django:

- ⊗ Django is a free and open-source web framework.
- ⊗ It is written in Python.
- ⊗ It follows the Model-View-Template (MVT) architectural pattern.
- ⊗ It is maintained by the Django Software Foundation (DSF)



- ⊗ It is used by several top websites like Youtube, Google, Dropbox, Yahoo Maps, Mozilla, Instagram, Washington Times, Nasa and many more
- ⊗ <https://www.shuup.com/blog/25-of-the-most-popular-python-and-django-websites/>
- ⊗ Django was created in 2003 as an internal project at Lowrence Journal-World News Paper for their web development.
- ⊗ The Original authors of Django Framework are: Adrian Holovaty, Simon Willison
- ⊗ After Testing this framework with heavy traffics, Developers released for the public as open source framework on July 21st 2005.
- ⊗ The Django was named in the memory of Guitarist Django Reinhardt.
- ⊗ Official website: djangoproject.com

Top 5 Features of Django Framework:

Django was invented to meet fast-moving newsroom deadlines, while satisfying the tough requirements of experienced Web developers.

The following are main important features of Django

1) Fast:

Django was designed to help developers take applications from concept to completion as quickly as possible.

2) Fully loaded:

Django includes dozens of extras we can use to handle common Web development tasks. Django takes care of user authentication, content administration, site maps, RSS feeds, and many more tasks.

3) Security:

Django takes security seriously and helps developers avoid many common security mistakes, such as SQL injection, cross-site scripting, cross-site request forgery and clickjacking. Its user authentication system provides a secure way to manage user accounts and passwords.



4) Scalability:

Some of the busiest sites on the planet use Django's ability to quickly and flexibly scale to meet the heaviest traffic demands.

5) Versatile:

Companies, organizations and governments have used Django to build all sorts of things — from content management systems to social networks to scientific computing platforms.

Note:

- 1) As Django is specially designed web application framework, the most commonly required activities will take care automatically by Django and Hence Developer's life will be simplified and we can develop applications very easily.
- 2) As Django invented at news paper, clear documentation is available including a sample polling application.
- 3) <https://docs.djangoproject.com/en/2.1/contents/>