Report on the Development of a URL Shortener Web Application for Basic Users

Introduction:

URL shortening is a technique in which a long URL is shortened to a small URL. It is very useful when sharing URLs on platforms like Twitter, where the character limit is very low. In this project, we are going to create a web application that will allow users to shorten URLs. The users can also save URLs by coming to the web app. This application consists of two parts, Frontend and Backend. Frontend will be done with HTML, CSS, and Bootstrap, while the Backend will be implemented using Flask (Python). ORM used in this project is SQLAlchemy, and the Database used is SQLite.

Objectives:

The main objective of this web application is to provide users with a URL shortening service. It will allow users to shorten URLs, and the shortened URL can be easily shared on social media platforms. The users can also save URLs they have shortened in the past, and it can be viewed in the history page.

Why do we need URL Shortener?

URL shorteners are essential when sharing links on social media platforms where the character limit is very low. It can also make the URL look clean and neat.

The shortened URL can be easily remembered, and it will make it easier to share with others. Additionally, URL shorteners can help in tracking the number of clicks on the shortened URL.

Project Workflow:

The following is the workflow of the web application:

1. User enters the URL they want to shorten.
2. After entering the URL, the user will click on the "Shorten URL" button.
3. The shortened URL will be displayed in the text-field, which the user can copy by clicking on the "Copy" button.
4. After the "Shorten URL" button is clicked, the URL that is entered is saved in our database with the shortened URL.
5. The saved URLs can be viewed in the history page.
6. The application will verify the URL entered by the user is correct or not.

Frontend Information:

The frontend of the web application consists of two web pages:

Home Page:

1. The Home Page is the landing page of the web application. It will contain a form where the user can enter the URL they want to shorten. After the "Shorten URL" button is clicked, the shortened URL will be displayed in the text-field, which the user can copy by clicking on the "Copy" button.

History Page:

2. The History Page will display all the original URLs along with the shortened URLs. The users can view the history of the URLs they have shortened in the past.

Backend Information:

The backend of the web application is implemented using Flask (Python). SQLAlchemy is used as the ORM, and the Database used is SQLite. The following are the functionalities of the backend:

URL Shortening:

1. The backend will take the URL entered by the user and shorten it. The shortened URL will be stored in the database.

URL Verification:

2. The backend will verify the URL entered by the user is correct or not.

Database:

3. The database used in this project is SQLite. It will store the original URL and the shortened URL.

Conclusion:

In conclusion, this project will create a web application that will allow users to shorten URLs. The shortened URL can be easily shared on social media platforms. The application will also store the original URL and the shortened URL in the database, and the users can view the history of the URLs they have shortened in the past. The application will also verify the URL entered by the user is correct or not. The frontend of the application is implemented using HTML, CSS, and Bootstrap, while the backend is implemented using Flask (Python). SQLAlchemy is used as the ORM, and the Database used is SQLite.