🎓 YouTube Video Downloader

📌 Project Overview

This project is a simple web application that allows users to download videos from YouTube by pasting a video URL. It combines basic frontend technologies (HTML, CSS) with a lightweight backend built in Python using Flask, and uses the pytube library to fetch and download the actual video.

The project is designed to demonstrate how different parts of a web application (frontend and backend) can work together to create a real-world tool.

🧱 Technologies Used

Layer Technology Purpose

Frontend HTML Page structure and content

CSS Styling and layout

Backend Python + Flask Web server and request handling

Video Engine pytube Interacts with YouTube to download

**⚙ How It Works (Step-by-Step)**

1. User Input

The user enters a YouTube video link into a text field on the website.

1. Form Submission

When the user clicks "Download", the form is submitted to the backend (Flask).

1. Video Processing (Pytube)

The Flask server receives the link and passes it to pytube, which Validates the link

* Connects to YouTube
* Finds the highest quality stream available
* Downloads the video to the server

* Success/Failure Message
* The website shows a message saying "Downloaded successfully" or an error message.

**🛠 Main Features**

✅ Accepts any valid YouTube URL

✅ Automatically downloads the highest resolution video

✅ User-friendly interface with a clean layout

✅ Shows success or error messages for better feedback

**🧪 Testing the Project**

* Run the project with python app.py
* Open the browser and visit http://127.0.0.1:5000/
* Paste a YouTube link and click Download
* Video will be downloaded to the local project folder

**📈 What I Learned**

* How web applications work with client-server architecture
* How to use Flask for building a lightweight backend
* How to use external libraries like pytube in Python
* How to structure a project using HTML, CSS, and Python
* Basic debugging and error handling

**📝 Conclusion**

This YouTube Video Downloader project helped me understand the full cycle of web development — from creating a user interface to writing backend logic and integrating third-party libraries. It’s a practical and functional project that showcases how simple tools can be combined to build something useful.