Digital Herbarium Project

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Project Overview:
This project's aim is to digitize the Tbilisi Statet University herbarium. The digital herbarium offers a comprehensive, scalable solution that enhances data preservation, accessibility, and usability for research, education, and conservation.

Problem To Be Solved:
Conventional herbariums face several challenges, including the natural decay of physical samples, geographically limited access, risk of data loss due to inadequate cataloging, and inefficient search or analysis capabilities. These issues hinder scientific progress and collaboration.

Solution Approach:
The project digitizes the herbarium specimens along with their metadata and makes them accessible through a web interface. The solution includes features such as filtering by species, collection location, and date, secure cloud backups, and a scalable, always-available platform.

Technology Stack:
The system is built using a 3-tier architecture:

- Backend: Django (Python)
- Database: PostgreSQL with PostGIS for geospatial data support
- Web Server: Nginx for serving the application efficiently

Applications and Impact:
The digital herbarium supports:

- Research in taxonomy, ecology, and phylogenetics
- Education through virtual labs and teaching tools
- Conservation by enabling species tracking and biodiversity monitoring
- Open Science by promoting data sharing and collaboration among institutions