

Cloud Tools For Data Modeling

Overview

- Developed web-based data modeling tool for Lightcast
- Replacing 20+ year-old legacy system
- Prioritized reliability and scalability

Future Centralized Application

- Reduce Excel Dependence
- Decouple From Microsoft Office
- Cloud Based Computation
- Optimized For Larger Data Sets
- Improved Runtimes & Version Control

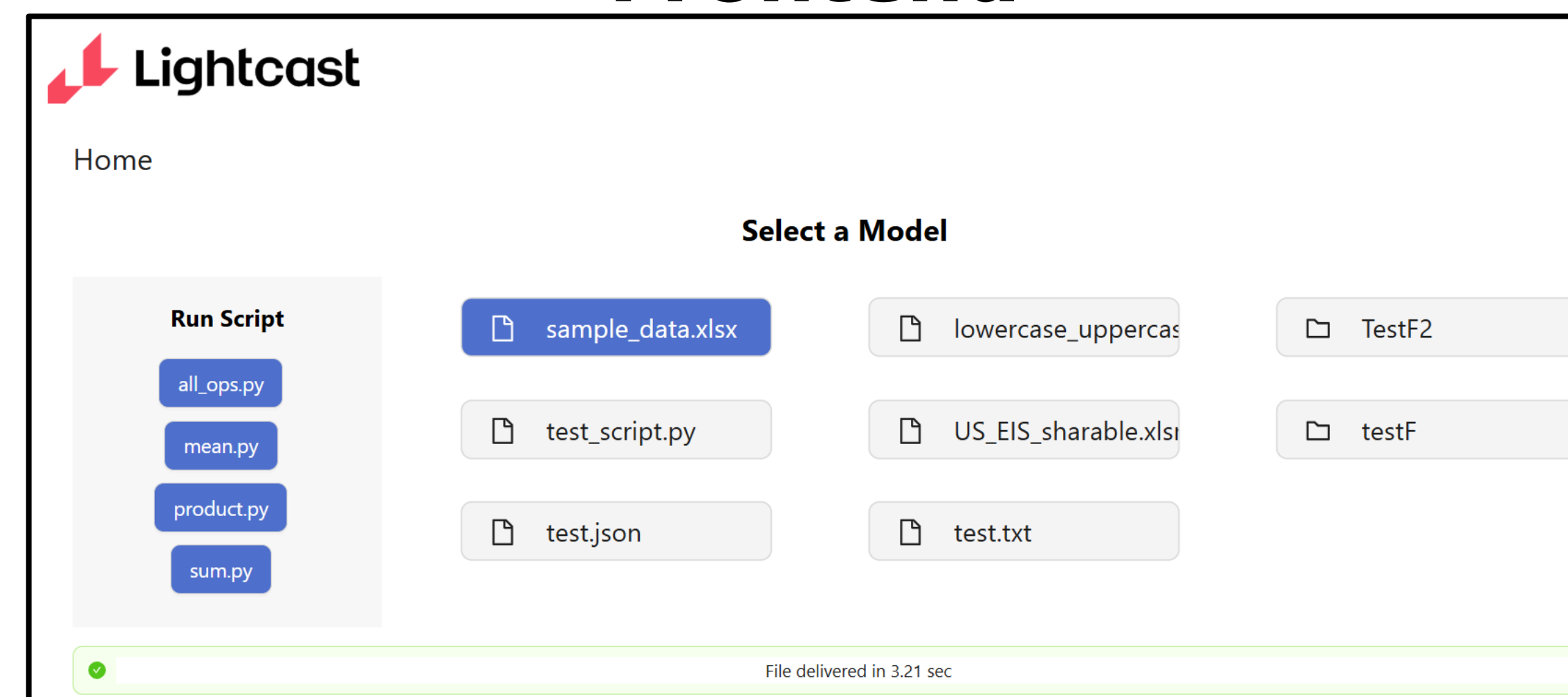
Requirements

- Google Drive integration
- Web-based frontend and backend
- Lightcast-standard documentation
- Intuitive, easy-to-navigate user interface
- Local app for Python-based data model execution

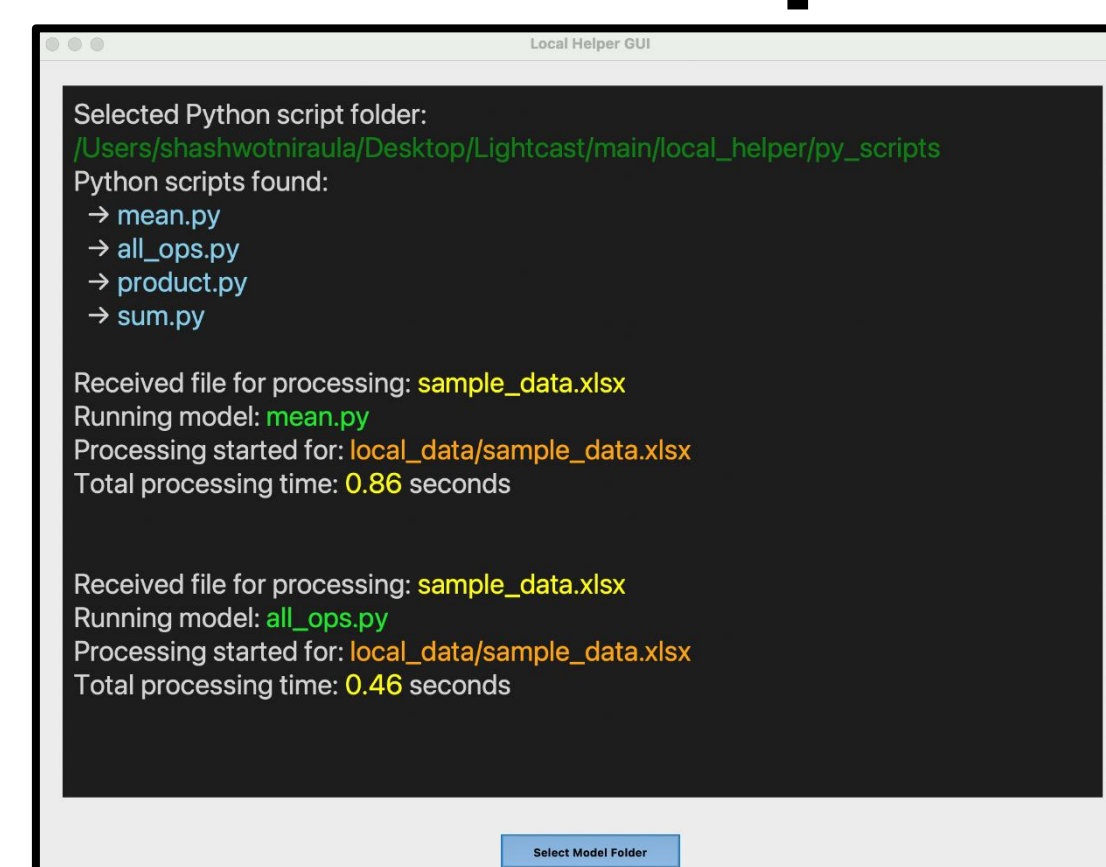
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Development & Design

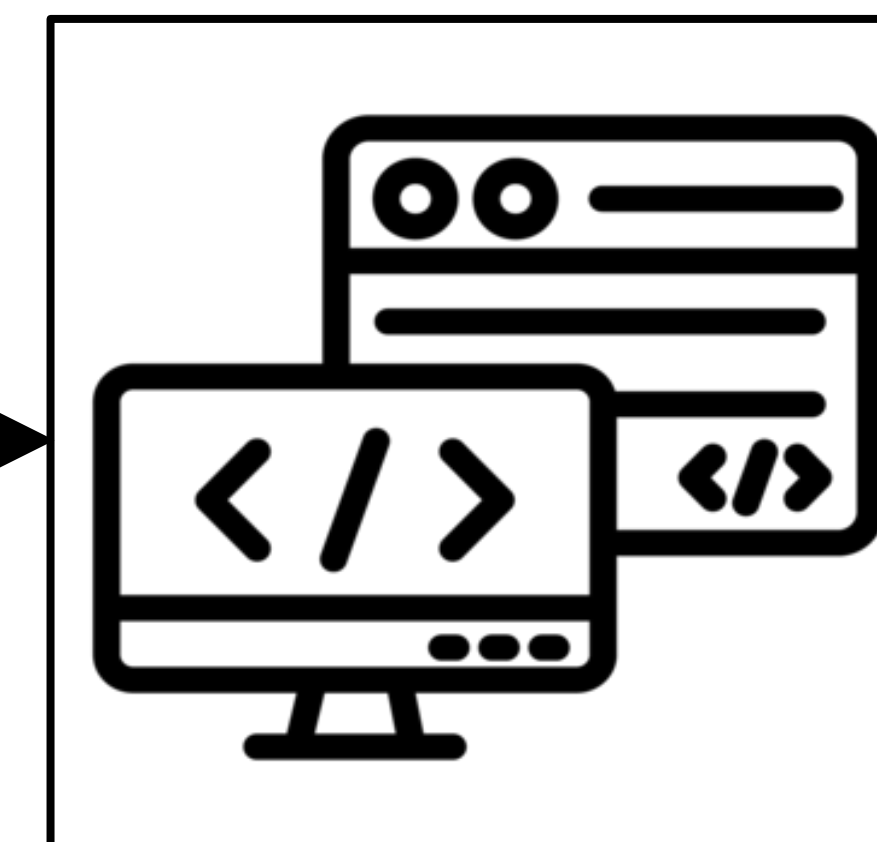
Frontend



Local Helper



Backend



Frontend

React/TS Drive & Model Selector
Backend calls on load/user input
Breadcrumb folder navigation

Backend

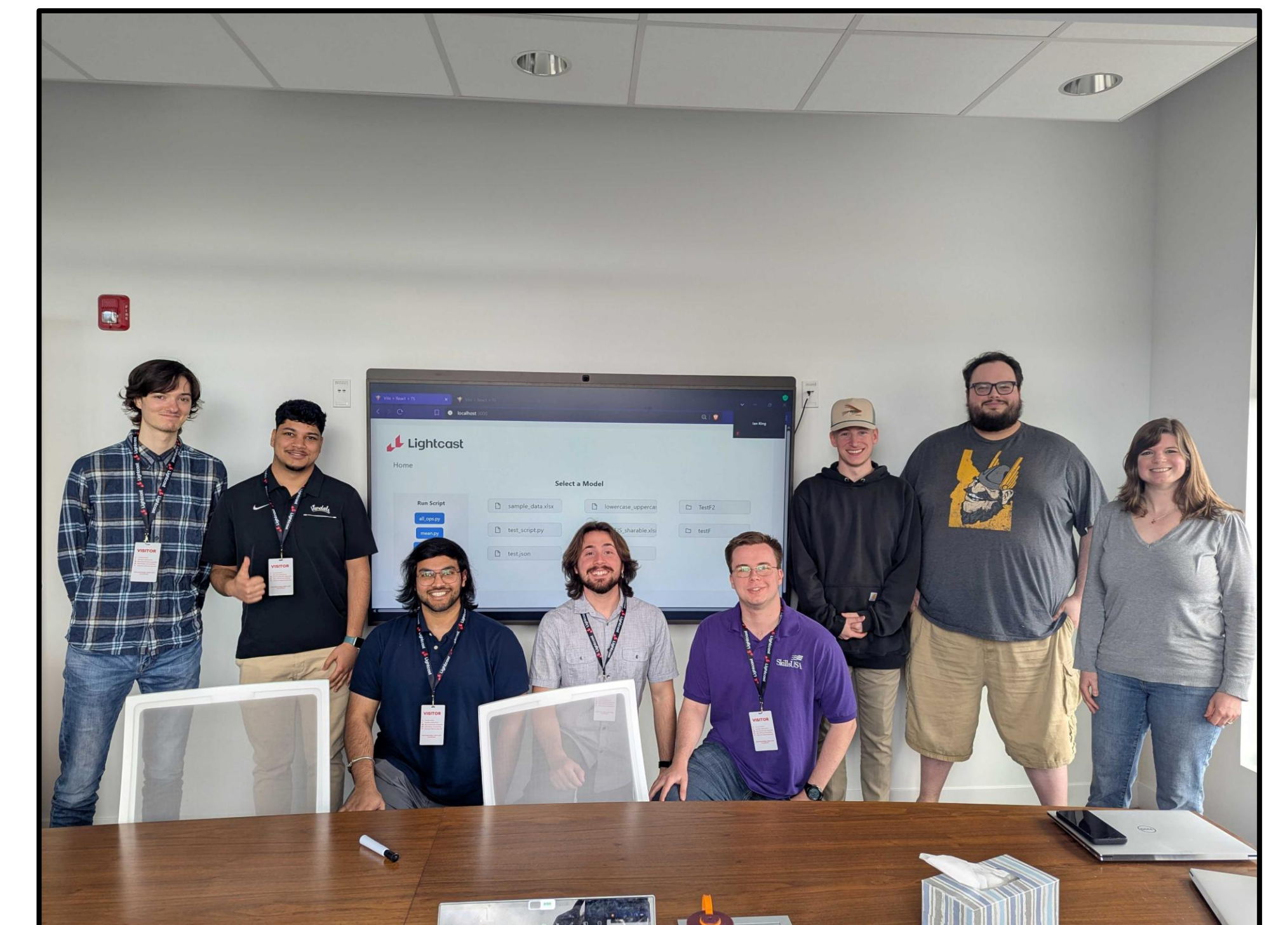
FastAPI as web framework
Google OAuth authorization
Google Drive communication
Connectivity between all parts and Google Drive

Python Helper

Model script execution and error display
Model folder selection
Details about the model's execution
Color coded messages

Validation

- Deployed on Lightcast machines
- Validated data model compatibility
- Secured login with Google OAuth
- Improved user experience according to Lightcast feedback



Future Work

- Refine frontend visuals
- Add a pinned folder feature for quick navigation
- Drag-and-Drop feature
- Progress bar for model execution
- Microsoft Word file support

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