

ForVis - Doc1 - System Architecture

1 System Overview

The system consists of a database and a web application.

2 Client-Side Application

The client-side code of the web application is located in the `frontend/formulavis/` folder. It is an application built using the Angular framework (version 5) and Karma for unit testing. The code is written in TypeScript, which enables static typing and class-based object-oriented programming.

Communication with the server is carried out through HTTP POST requests sent by dedicated services. Each Angular component is divided into several parts:

- An HTML-based view,
- Component logic written in TypeScript,
- Stylesheets,
- Unit tests.

Each of these elements is stored in a separate file within the respective component's folder under the `src/app` directory.

3 Server-Side Application

The server is written in Python using the Django Rest Framework and JSON Web Token Authentication. It is divided into two parts:

- **Application** (`profiles/`) – Contains view definitions (`profiles/views.py`), represented as classes inheriting from `APIView`.
- **Project** (`formulavis/`) – A set of configurations for the given web service.

Implementing specific functions in a subclass allows handling HTTP requests sent to the URL associated with a given view. The mapping of views to URLs is defined in the `profiles/urls.py` file. The application also includes model definitions (`profiles/models.py`) that enable database table creation and migrations.

4 Database

The server uses a PostgreSQL database, with its configuration found in `formulavis/settings.py`. Communication with the database is carried out through the API provided by the framework.

5 Containerization

The application is containerized using Docker. The entire system consists of seven containers.