



# Building Information Enhancer (AMOS SS 2024)

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## 📢 About the Project

Welcome to the official repository for the [CODE.ING](#) group, developing an open-source [Building Information Enhancer](#) software for the [BUILD.ING](#) partner and the [AMOS 2024](#) project. Together, we create a Building information system for potential energy savings. To read about the architecture of our service visit our GitHub [wiki](#).

## 🔧 Setup & Deployment

This project is integrated with a full CI/CD pipeline, thus deployed automatically on the web. However, it is possible to deploy a production-ready system on your local machine using Docker. For further information on the [CI/CD](#) pipeline visit our GitHub [wiki](#) documentation.

## 📦 Deployment using Docker

To deploy the latest release of the project on your local machine using Docker Engine, follow the instructions below:

1. Clone this repository (<https://github.com/amosproj/amos2024ss04-building-information-enhancer>).
2. Before deploying the project be sure you have installed the [Node.js](#) (  $\geq$  20.12.2) and a running [Docker Engine](#).
3. Run the [npm run deploy](#) command in the root folder of the repository. \*
4. Connect to the frontend at port 80 ([localhost:80](http://localhost:80)).

\* This command pulls the newest release of the images, if you want to build your local files, use [npm run deploy:build](#) instead.

## 💻 Developement Deployment

In order to deploy and/or develop one or more services, follow the instructions below:

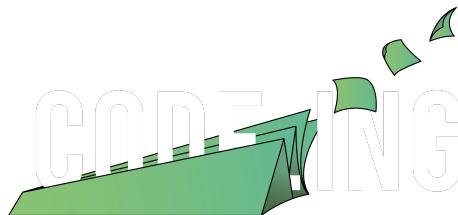
## Setup

1. Clone this repository (<https://github.com/amosproj/amos2024ss04-building-information-enhancer>).
2. Before deploying the project make sure you have installed the [Node.js](#) (  $\geq 20.12.2$  ) and [Dotnet SDK](#) (  $\geq 8.0.3$  ).
3. Run the `npm run setup:<os>` command to download all necessary packages and build the services, replacing `<os>` with `windows`, `linux` or `macos` based on your operating system.

## Development

1. If you want to develop the frontend service, run the `npm run deploy:backend:api` to deploy the backend, and in a new terminal run the `npm run deploy:frontend:dev` command to deploy the frontend development server.
2. If you want to develop one of the backend services, instead you need to make the changes and re-build the backend executables afterward. To do so, go to the `backend` folder and open the corresponding `.sln` file. To build all services type, go back to the root folder and type `npm run deploy:backend:api`.

## The Team



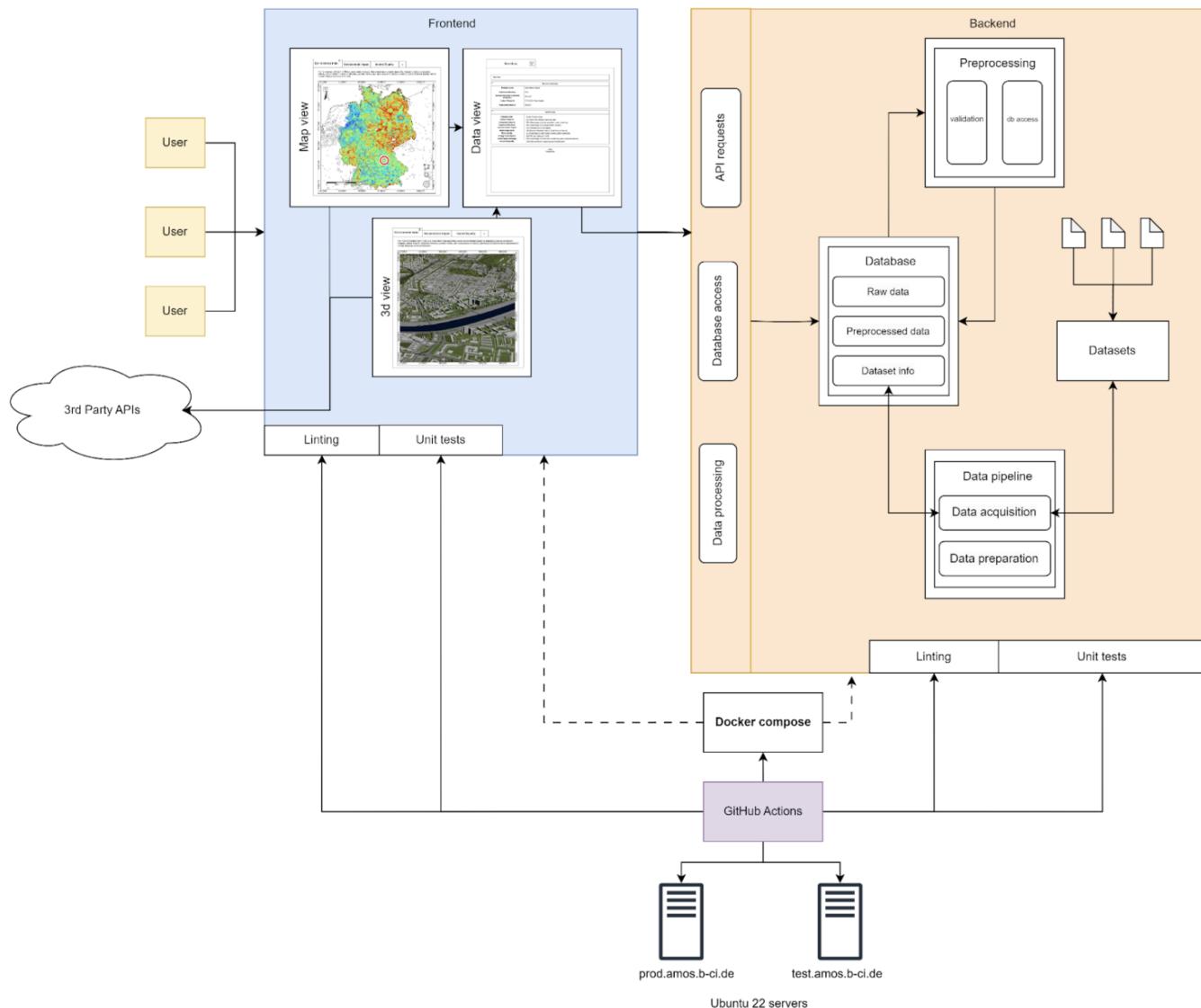
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Welcome to the [Building Information Enhancer](#) project wiki! Here you can find all the relevant information about the project's architecture and APIs. To read more about a specific topic, click one of the links below:

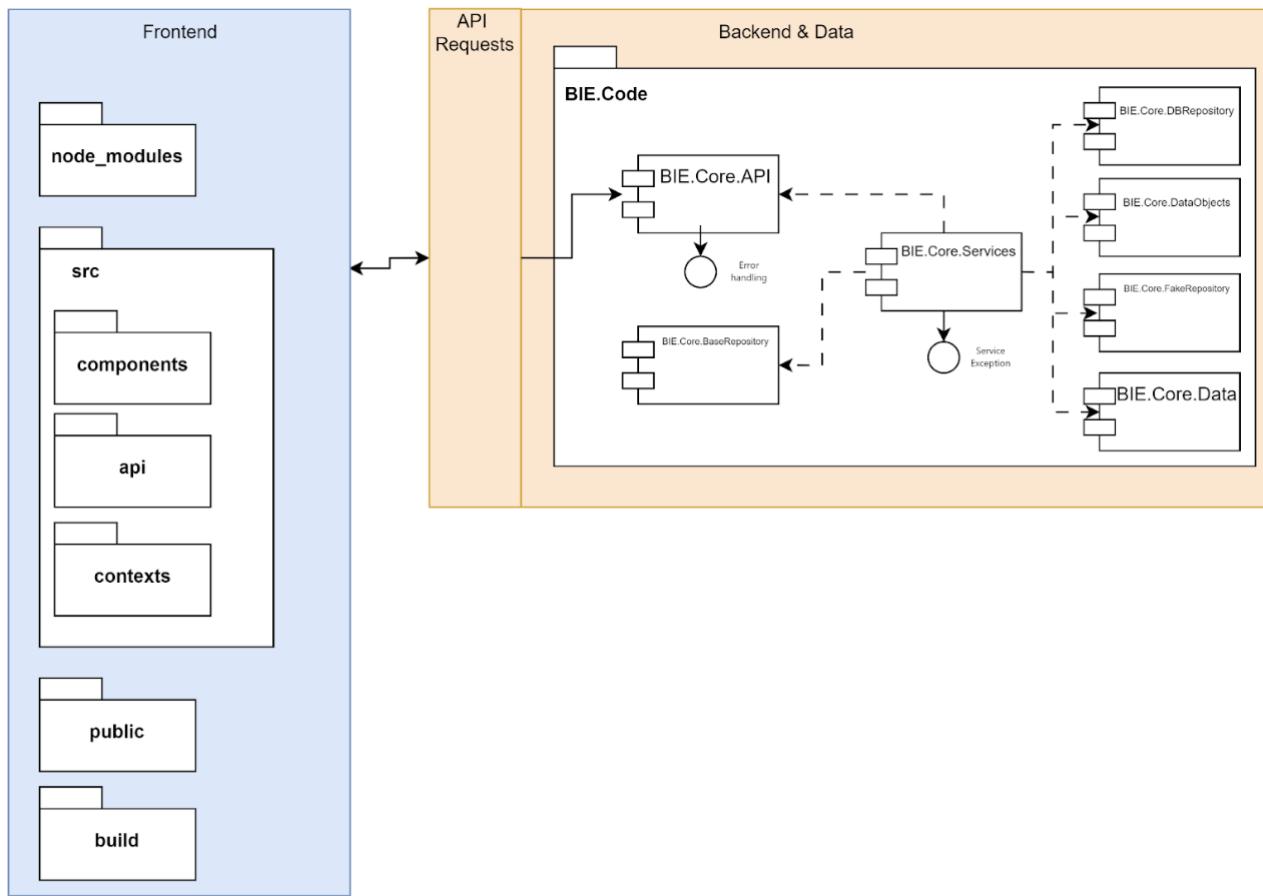
## System Architecture

- [Frontend Architecture](#)
- [Backend Architecture](#)
- [CI/CD Pipeline](#)

## Runtime Components Diagram



## Code Components Diagram



## Technology Stack

### Backend

**C#** - backend programming language

**.NET** - backend framework

**SQL** database - main database to use, with other databases possible in the future, such as MongoDB and others.

### Frontend

**TypeScript** - frontend programming language

**React** - frontend framework

**Vite** - build tool for faster and leaner development experience for modern web projects

**Nginx** (soon to be changed to Apache HTTP Server) - web server for serving frontend files

**Material UI** - components library for easier development of frontend

### DevOps (CI/CD Pipeline)

**Docker** - deployment of both frontend and backend as containers

**Docker Compose** - management of multiple Docker images

[GitHub Actions](#) - CI/CD automatic functions on push/pull requests

[Eslint](#) - frontend linting

[Backend linting](#) - TBD

Unit tests - frontend & backend TBD

Hetzner Hosting Ubuntu Servers - test and production environments