

Meeting Planner

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<https://github.com/NickMuellner/SWEN2-meeting-planner>

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Architecture

Layers

- **View Layer**
Built with JavaFX and FXML, this layer handles user interaction. Controllers respond to user input and delegate actions to the ViewModel.
- **ViewModel Layer**
The ViewModel acts as an intermediary between the View and the Model. It handles input validation, state management, and event propagation.
- **Model Layer**
Contains core domain classes such as Meeting, MeetingNote, and relevant data structures. These classes represent the internal state of the application.
- **Service Layer**
Provides application logic and persistence operations (CRUD). Services abstract database access and perform logic related to meetings and meeting notes.
- **Utility Layer**
Includes reusable helpers like the EventManager (custom event bus), report generation, and JPA Manager.

Library decisions

- **JavaFX** – GUI framework
- **Jackson (FasterXML)** – JSON serialization and deserialization
- **JUnit 5** – Unit testing framework
- **IText** – PDF generation
- **Apache Log4j** – Logging tool
- **PostgreSQL JDBC Driver** – Enables connection to database
- **Jakarta** - Persistance
- **Hibernate** – ORM

Design patterns

- **MVVM (Model-View-ViewModel)**
Enables separation of concerns between UI and logic.
- **Observer Pattern**
Observables are used to propagate state changes from the model to the view.
- **Factory Pattern**
Factories are used for service instantiation and configuration.

Class diagram



Testing

MeetingManageViewModelTest

This test verifies validation and update logic in the view model that handles creating and editing meetings.

MeetingListServiceTest

Tests the service responsible for managing meetings and meeting notes.

EventManagerTest and EventManagerAdditionalTest

Tests the EventManager who is responsible for subscribing and publishing events through all Views.

MeetingTest, MeetingNoteTest and MeetingUpdateStatusTest

Tests the model (constructor, CRUD) in the application.