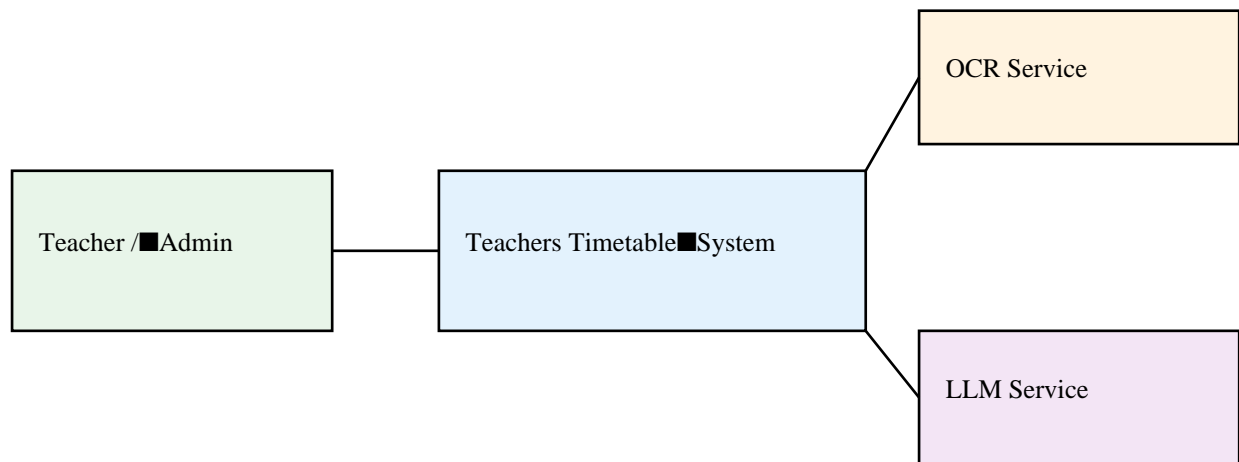


C4 Architecture Explained – Teachers Timetable Management System

Level 1 – Context Diagram

Shows who uses the system and which external systems it depends on.

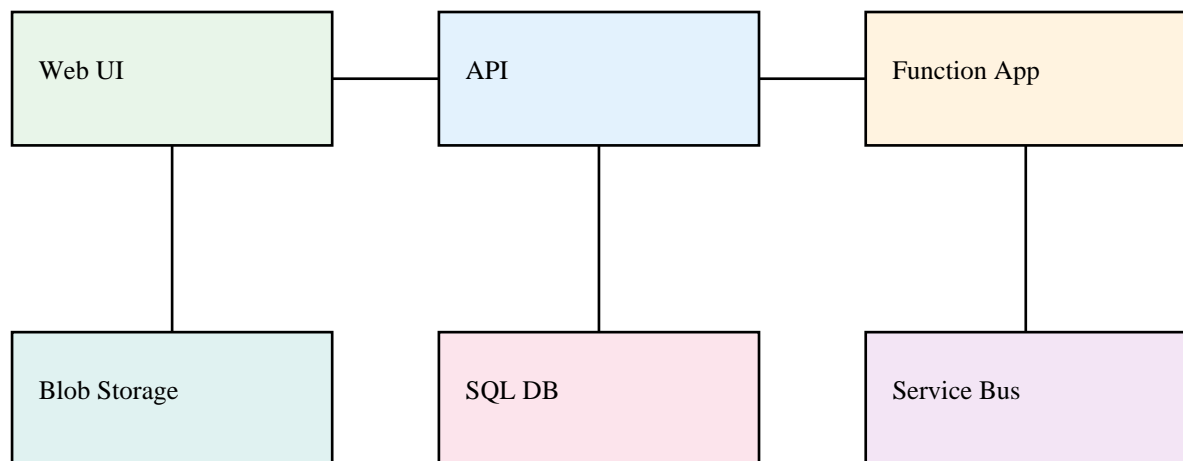
- Teachers and School Admins upload timetable documents
- OCR and LLM are external services
- Authentication is handled by an external identity provider
- No internal or Azure-specific details appear here



Level 2 – Container Diagram

Shows the major deployable units and their interactions.

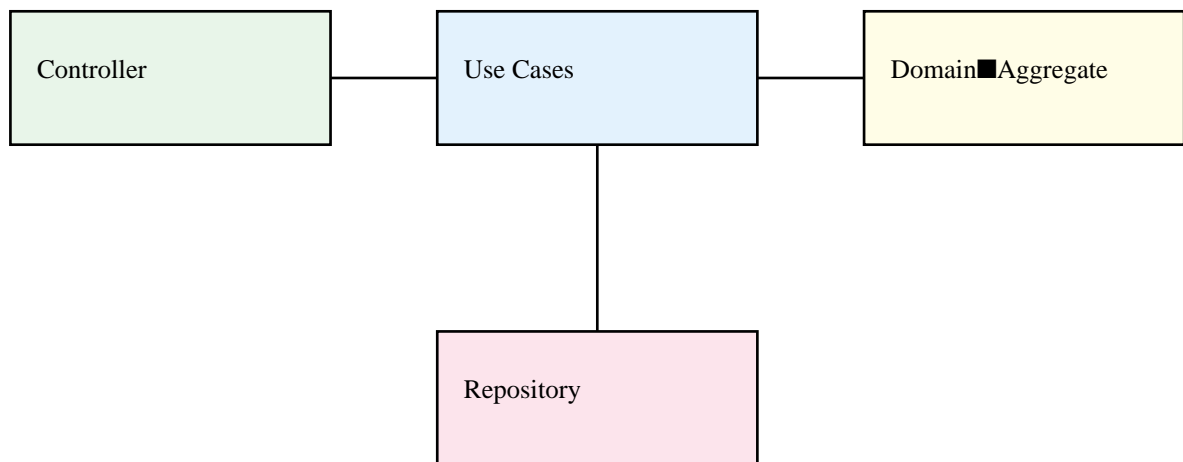
- Web UI handles user interaction
- API owns business workflows and persistence
- Function App orchestrates async OCR and LLM calls
- Blob Storage stores raw uploads
- Service Bus enables event-driven processing
- SQL Database stores validated timetables



Level 3 – Component Diagram

Shows internal structure of the API container following Clean Architecture.

- Controllers handle HTTP concerns
- Use cases coordinate application logic
- Domain enforces all business invariants
- Repositories abstract persistence



Level 4 – Code / Domain Diagram

Shows Domain-Driven Design at code level.

- Timetable is the Aggregate Root
- DaySchedule and TimeSlot are entities
- TimeRange is a value object
- All invariants are centralized in the aggregate

