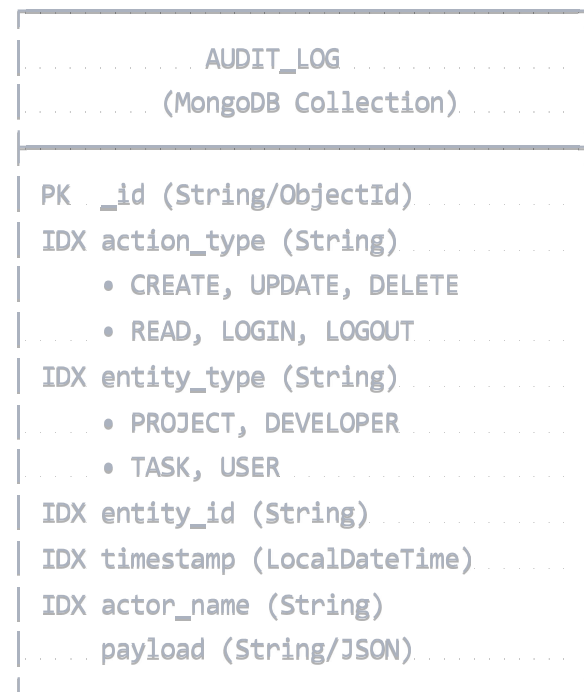
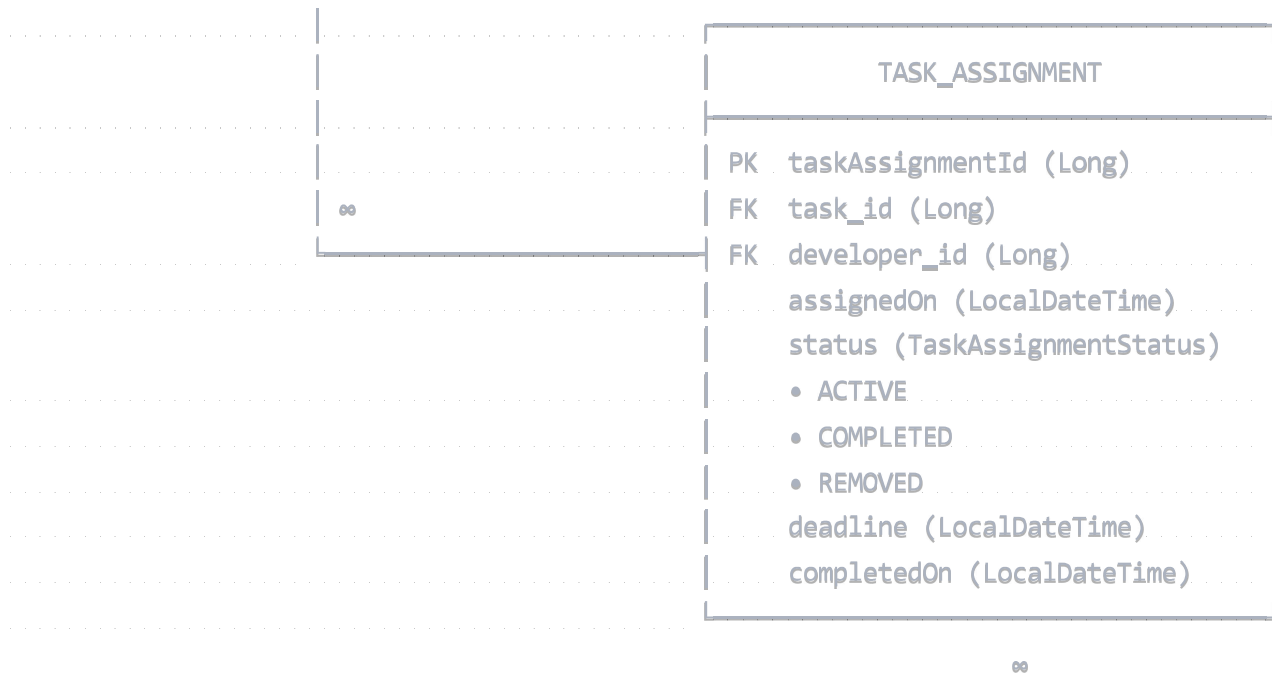


ProjectTracker - Entity Relationship Diagram



RELATIONSHIP LEGEND:

- One-to-Many relationship
- 1 One side
- ∞ Many side
- PK Primary Key
- FK Foreign Key
- IDX Indexed field
- [@Constraint] Validation constraint

RELATIONSHIP DETAILS:

1. DEVELOPER (1) ————— (∞) TASK_ASSIGNMENT

- One developer can have multiple task assignments
- FK: task_assignment.developer_id → developer.developerId

2. PROJECT (1) ————— (∞) TASK

- One project can have multiple tasks
- FK: task.project_id → project.projectId
- Cascade: ALL operations, Orphan removal: true

3. TASK (1) ————— (∞) TASK_ASSIGNMENT

- One task can have multiple assignments (multiple developers)
- FK: task_assignment.task_id → task.taskId
- Cascade: ALL operations, Orphan removal: true

4. TASK ↔ DEVELOPER (Many-to-Many via TASK_ASSIGNMENT)

- A task can be assigned to multiple developers
- A developer can work on multiple tasks
- Junction table: TASK_ASSIGNMENT

CIRCULAR REFERENCE PREVENTION:

- @JsonIgnore on Project.tasks and Task.taskAssignments
- @ToString.Exclude on TaskAssignment.task and TaskAssignment.developer
- @ToString(exclude = {"taskAssignments"}) on Developer

AUDIT TRAIL:

- All PostgreSQL entity changes tracked in MongoDB
- Indexed fields for efficient audit queries
- Automatic timestamp generation