

Entity Relationship Diagram for Bug Tracker (Jira-lite)

Database Schema Overview

This ERD represents a simplified bug tracking system ("Jira-lite") designed to manage users, projects, issues, and related entities efficiently. The schema includes both essential features for core functionality and optional tables for extended capabilities.

Entity Relationship Diagram

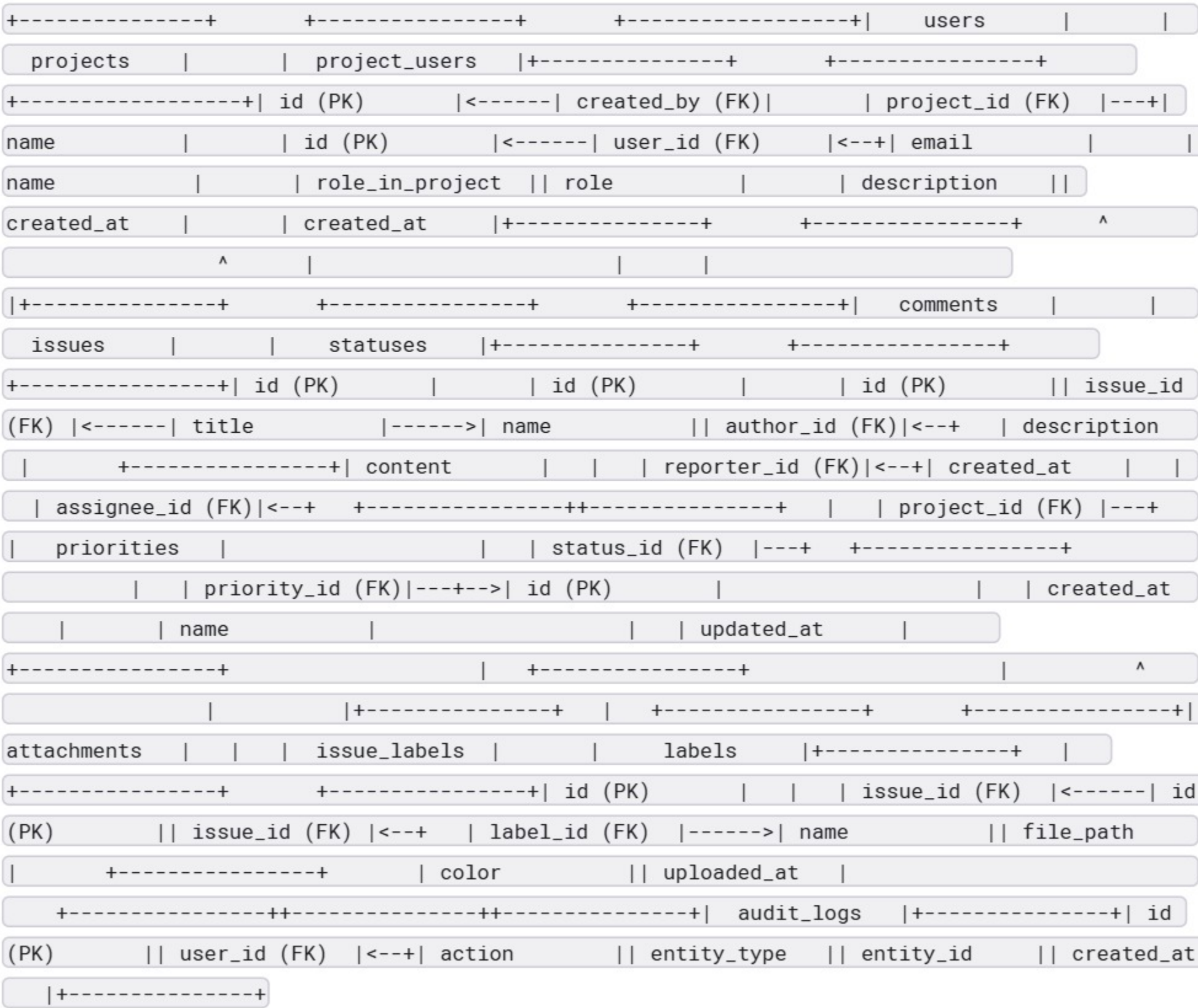


Table Descriptions

Essential Features

Users Table

- **id:** Integer, Primary Key
- **name:** Varchar, User's name
- **email:** Varchar, User's email address
- **role:** Varchar, User's role in the system
- **created_at:** Datetime, Timestamp of when the user was created

Projects Table

- **id:** Integer, Primary Key
- **name:** Varchar, Project name
- **description:** Text, Detailed description of the project
- **created_by:** Integer, Foreign Key referencing users.id
- **created_at:** Datetime, Timestamp of when the project was created

Project Users Table

- **project_id:** Integer, Foreign Key referencing projects.id
- **user_id:** Integer, Foreign Key referencing users.id
- **role_in_project:** Varchar, Role of the user within the project

Issues Table

- **id:** Integer, Primary Key
- **title:** Varchar, Title of the issue
- **description:** Text, Detailed description of the issue
- **reporter_id:** Integer, Foreign Key referencing users.id
- **assignee_id:** Integer, Foreign Key referencing users.id
- **project_id:** Integer, Foreign Key referencing projects.id
- **status_id:** Integer, Foreign Key referencing statuses.id
- **priority_id:** Integer, Foreign Key referencing priorities.id
- **created_at:** Datetime, Timestamp of when the issue was created
- **updated_at:** Datetime, Timestamp of the last update

Statuses Table

- **id:** Integer, Primary Key
- **name:** Varchar, Name of the status

Priorities Table

- **id**: Integer, Primary Key
- **name**: Varchar, Name of the priority level

Comments Table

- **id**: Integer, Primary Key
- **issue_id**: Integer, Foreign Key referencing issues.id
- **author_id**: Integer, Foreign Key referencing users.id
- **content**: Text, Content of the comment
- **created_at**: Datetime, Timestamp of when the comment was created

Optional Features

Labels Table

- **id**: Integer, Primary Key
- **name**: Varchar, Name of the label
- **color**: Varchar, Color associated with the label

Issue Labels Table

- **issue_id**: Integer, Foreign Key referencing issues.id
- **label_id**: Integer, Foreign Key referencing labels.id

Attachments Table

- **id**: Integer, Primary Key
- **issue_id**: Integer, Foreign Key referencing issues.id
- **file_path**: Varchar, Path to the attached file
- **uploaded_at**: Datetime, Timestamp of when the file was uploaded

Audit Logs Table

- **id**: Integer, Primary Key
- **user_id**: Integer, Foreign Key referencing users.id
- **action**: Varchar, Description of the action performed
- **entity_type**: Varchar, Type of entity affected (e.g., Issue, Project)
- **entity_id**: Integer, ID of the affected entity

- **created_at:** Datetime, Timestamp of when the action was logged

Key Relationships

1. **Users to Projects:** One-to-many relationship (a user can create multiple projects)
2. **Users to Issues:** One-to-many relationships (as reporters and assignees)
3. **Projects to Issues:** One-to-many relationship (a project can have multiple issues)
4. **Issues to Comments:** One-to-many relationship (an issue can have multiple comments)
5. **Issues to Attachments:** One-to-many relationship (an issue can have multiple attachments)
6. **Issues to Labels:** Many-to-many relationship (through issue_labels junction table)