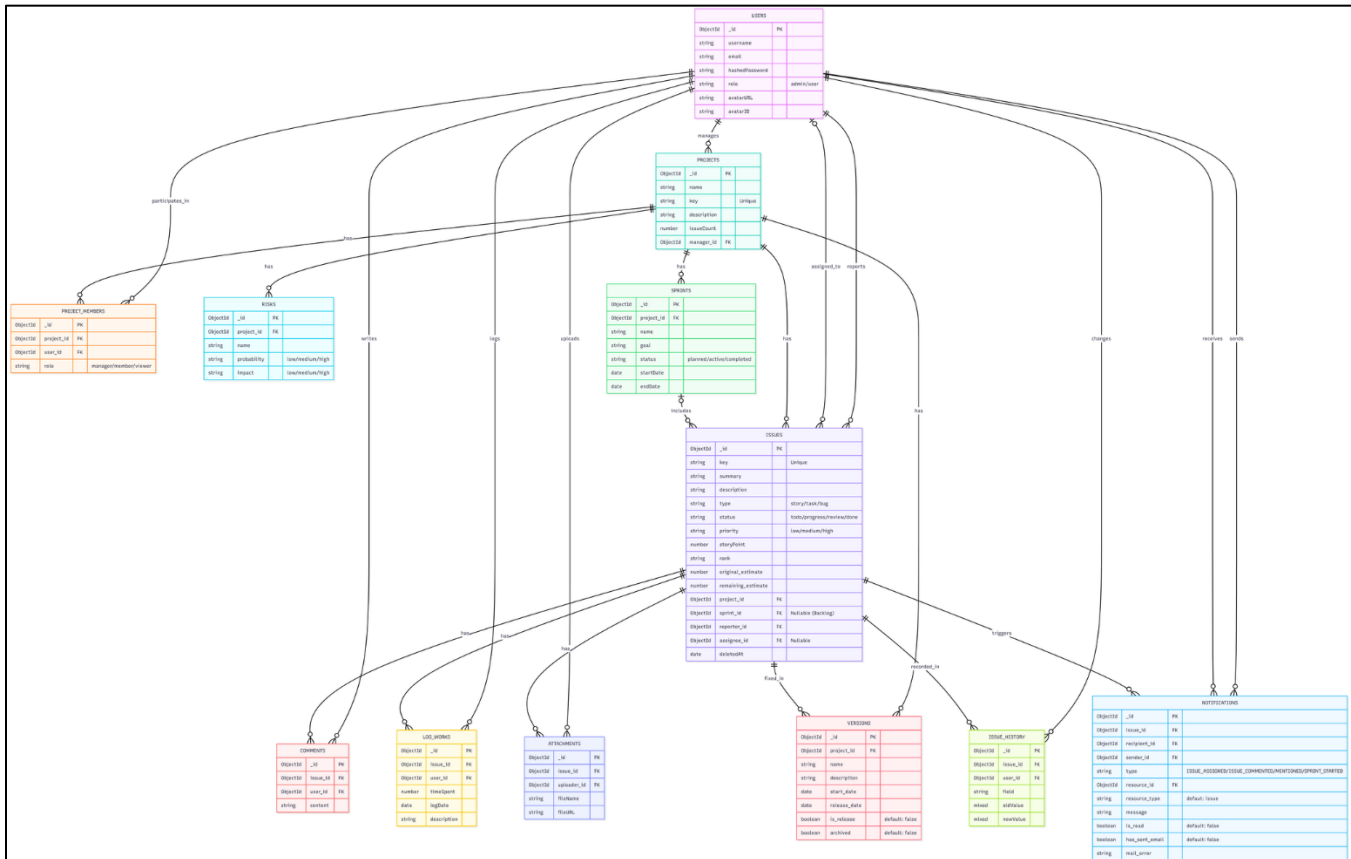


4 Data Design

4.1 Data Diagram



Picture: Data Diagram

4.2 Data Specification

USERS

Attribute	Type	Constraint	Description
<u>id</u>	ObjectId	Primary Key	User ID
username	String	required, unique, lowercase, trim	Account
hashedPassword	String	required	Hash password

email	String	required, unique, lowercase, trim	Email user
avatarURL	String	optional	Avatar URL
avatarID	String	optional	Avatar ID
role	String	enum("user", "admin"), default="user"	User role
createdAt	Date	auto	Creation date
updatedAt	Date	auto	Update date

PROJECTS

Attribute	Type	Constraint	Description
_id	ObjectId	PK	
name	String	required	Project name
key	String	required, unique	Project key
description	String	optional	
manager	ObjectId	required, <i>FK</i> → <i>Users._id</i>	Manager
issueCount	Number	default: 0	Number of issue
createdAt	Date	auto	
updatedAt	Date	auto	

PROJECT_MEMBERS

Attribute	Type	Constraint	Description
_id	ObjectId	PK	
project	ObjectId	required, <i>FK</i> → <i>Projects._id</i>	
user	ObjectId	required, <i>FK</i> → <i>Users._id</i>	
role	String	enum("manager", "member", "viewer")	Role in project
createdAt	Date		
updatedAt	Date		

RISKS

Attribute	Type	Constraint
_id	ObjectId	PK
project	ObjectId	required, <i>FK</i> → <i>Projects._id</i>
name	String	required
probability	String	enum("low","medium","high")
impact	String	enum("low","medium","high")
createdAt	Date	
updatedAt	Date	

SPRINTS

Attribute	Type	Constraint
_id	ObjectId	PK
project	ObjectId	required, <i>FK</i> \rightarrow <i>Projects._id</i>
name	String	required
goal	String	optional
startDate	Date	optional
endDate	Date	optional
completedAt	Date	optional
status	String	enum("planned", "active", "completed")
createdAt	Date	
updatedAt	Date	

ISSUES

Attribute	Type	Constraint	Description
_id	ObjectId	PK	
project	ObjectId	<i>FK</i> \rightarrow <i>Projects._id</i>	
summary	String	required	Title
key	String	required, unique	Key issue (JIRA-123)
description	String		
type	String	enum("story", "task", "bug")	
status	String	enum("todo", "in_progress", "review",	

		"done")	
priority	String	enum("low","medium","high")	
storyPoint	Number	default: 0	
rank	String	optional	
reporter	ObjectId	<i>FK</i> → <i>Users._id</i>	
assignee	ObjectId	<i>FK</i> → <i>Users._id</i> , optional	
originalEstimate	Number	default 0	
remainingEstimate	Number	default 0	
sprint	ObjectId	<i>FK</i> → <i>Sprints._id</i> , optional	
fixVersion	ObjectId	<i>FK</i> → <i>Versions._id</i>	
deletedAt	Date	soft delete	
createdAt	Date		
updatedAt	Date		

COMMENTS

Attribute	Type	Constraint
_id	ObjectId	PK
issue	ObjectId	required, <i>FK</i> → <i>Issues._id</i>
user	ObjectId	required, <i>FK</i> → <i>Users._id</i>
content	String	required
createdAt	Date	
updatedAt	Date	

LOG_WORKS

Attribute	Type	Constraint
_id	ObjectId	PK
issue	ObjectId	required, <i>FK</i> → <i>Issues._id</i>
user	ObjectId	required, <i>FK</i> → <i>Users._id</i>
timeSpent	Number	required
logDate	Date	default: now
description	String	optional
createdAt	Date	
updatedAt	Date	

ATTACHMENTS

Attribute	Type	Constraint
_id	ObjectId	PK
issue	ObjectId	required, <i>FK</i> → <i>Issues._id</i>
fileName	String	required
fileURL	String	required
uploader	ObjectId	<i>FK</i> → <i>Users._id</i>
createdAt	Date	
updatedAt	Date	

ISSUE_HISTORY

Attribute	Type	Constraint
_id	ObjectId	PK
issue	ObjectId	required, <i>FK</i> → <i>Issues._id</i>
user	ObjectId	required, <i>FK</i> → <i>Users._id</i>
field	String	required
oldValue	Mixed	
newValue	Mixed	
createdAt	Date	
updatedAt	Date	

NOTIFICATIONS

Attribute	Type	Constraint
_id	ObjectId	PK
recipient	ObjectId	<i>FK</i> → <i>Users._id</i>
sender	ObjectId	<i>FK</i> → <i>Users._id</i>
type	String	enum("ISSUE_ASSIGNED", "ISSUE_COMMENTED", "MENTIONED", "SPRINT_STARTED")
resourceId	ObjectId	required
resourceType	String	default "issue"
message	String	
isRead	Boolean	default false
hasSentEmail	Boolean	default false

mailError	String	optional
createdAt	Date	TTL index 30 days
updatedAt	Date	

VERSIONS

Attribute	Type	Constraint
_id	ObjectId	PK
project	ObjectId	required, <i>FK</i> → <i>Projects._id</i>
name	String	required
description	String	
startDate	Date	
releaseDate	Date	
isReleased	Boolean	default false
archived	Boolean	default false
createdAt	Date	
updatedAt	Date	