**Object Design**

**«Association»**
A_User_DB_USERS

**«Association»**
A_User_Complaint

**«Association»**
A_Complaint_DB

**«Association»**
A_User_Notification

**«Association»**
A_Notif_DB

**«Association»**
A_OTP_DB

**«Property»**
P_User_DB_USERS_u1
- isComposite = false
- lower = 1
- upper = *

**«Property»**
P_User_DB_USERS_u2
- lower = 1
- upper = 1

**AuthController**
- login()
- register()
- verifyOTP()
- resetPassword()

**«Property»**
P_User_Complaint_u2
- name = "belongsTo"
- lower = 1
- upper = 1

**«Property»**
P_User_Complaint_u1
- name = "userComplaints"
- lower = 0
- upper = *

**«Property»**
P_Complaint_DB_c2
- lower = 1
- upper = 1

**«Property»**
P_User_Notif_2
- lower = 1
- upper = 1

**ComplaintController**
- createComplaint()
- getMyComplaints()
- updateComplaintStatus()
- forwardComplaint()

**CommitteeController**
- getAssignedComplaints()
- updateComplaintStatus()
- forwardComplaint()

**«Property»**
P_Complaint_DB_c1
- lower = 1
- upper = *

**«Property»**
P_User_Notif_1
- lower = 0
- upper = *

**«Property»**
P_Notif_DB_2
- lower = 1
- upper = 1

**«Property»**
P_OTP_DB_2
- lower = 1
- upper = 1

**«Property»**
P_Notif_DB_1
- lower = 1
- upper = *

**NotificationController**
- getNotifications()
- markAsRead()

**«Property»**
P_OTP_DB_1
- lower = 1
- upper = *

reads / writes    manages    creates / updates    views / updates / forwards    stores    updates    verifies    reads / updates    stores

**DB_Users**
- _id : ObjectId
- name : String
- email : String
- password : String
- role : String
- committeeType : String

**User**
- name : String
- email : String
- role : String
- committeeType : String

**Complaint**
- title : String
- description : String
- category : String
- priority : String
- location : String
- status : String
- type : String
- response : String
- isAnonymous : Boolean

**DB_Complaints**
- _id : ObjectId
- userId : ObjectId
- title : String
- description : String
- category : String
- priority : String
- location : String
- status : String
- type : String
- response : String
- isAnonymous : Boolean
- upvotes : Array
- attachments : Array
- statusHistory : Array
- createdAt : Date
- updatedAt : Date

**OTP**
- email : String
- otp : String

**Notification**
- message : String
- type : String
- isRead : Boolean

**DB_Notifications**
- _id : ObjectId
- user : ObjectId
- complaint : ObjectId
- type : String
- message : String
- isRead : Boolean
- createdAt : Date

**DB_OTPs**
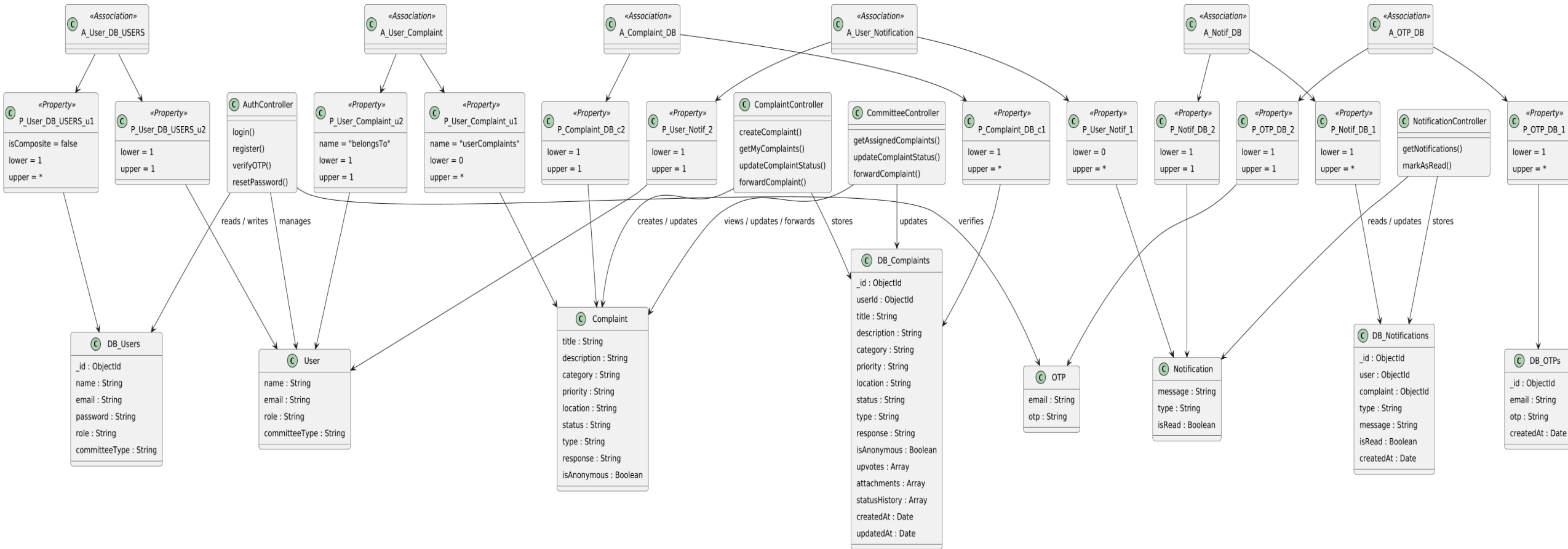- _id : ObjectId
- email : String
- otp : String
- createdAt : Date

CCR - Campus Complaint Resolve
Object Design Diagram (Hybrid with AI Routing Subsystem)