Studyr Object Descriptions

# 1. User

## Purpose:

Represents a registered user of the Studyr platform, storing their personal information, authentication credentials, and account status.

## Key Attributes:

* Identity: userId, email, username
* Personal: firstName, lastName, dateOfBirth
* Authentication: passwordHash, emailVerified
* Profile: profilePictureUrl, studyLevel, yearLevel
* Status: isActive, isPremium, lastLogin
* Metadata: createdAt, updatedAt, timezone

## Responsibilities:

* Authenticate login credentials
* Manage profile information
* Track subscription status
* Validate age requirements (13+)
* Handle password encryption

# 2. StudySession

## Purpose:

Represents a scheduled or completed study period, containing all details about when, what, and with whom a user plans to study.

## Key Attributes:

* Identity: sessionId, sessionTitle
* Scheduling: startTime, endTime, durationMinutes
* Content: subjectId, notes, location
* Type: sessionType (solo/partner/group)
* Status: status (scheduled/inProgress/completed/cancelled)
* Recurrence: isRecurring, recurrenceRule

## Responsibilities:

* Validate session timing (no overlaps)
* Calculate duration
* Manage session lifecycle (start, complete, cancel)
* Handle recurring session generation
* Track participant attendance

# 3. Subject

## Purpose:

Represents an academic subject or topic that users can study, providing consistent categorization and visual identification across the platform.

## Key Attributes:

* Identity: subjectId, subjectName, subjectCode
* Display: colorHex, iconEmoji
* Classification: category (mathematics/science/humanities/etc.)
* Metadata: createdAt

## Responsibilities:

* Provide consistent subject identification
* Enable visual distinction in UI
* Support subject-based filtering
* Facilitate matchmaking by subject

# 4. StudyPartner

## Purpose:

Represents a potential or confirmed study partnership between two users, tracking the relationship status and compatibility.

## Key Attributes:

* Identity: partnershipId
* Participants: requesterId, recipientId
* Status: status (pending/accepted/declined/blocked)
* Matching: compatibilityScore (0.00-1.00)
* Timeline: createdAt, matchedAt

## Responsibilities:

* Track partnership requests
* Calculate compatibility scores
* Manage acceptance/rejection flow
* Prevent blocked user interactions
* Enable partner-based study sessions

# 5. StudyStreak

## Purpose:

Tracks consecutive days of study activity for gamification, motivating users through visual progress and achievement unlocking.

## Key Attributes:

* Identity: streakId, userId
* Progress: currentStreak, longestStreak
* Timeline: lastStudyDate, streakStartDate
* Metadata: updatedAt

## Responsibilities:

* Calculate consecutive study days
* Detect and handle broken streaks
* Track personal best records
* Trigger achievement checks
* Provide streak status for UI display

# 6. Achievement

## Purpose:

Defines a specific accomplishment users can earn through their study activities, providing gamification rewards and motivation.

## Key Attributes:

* Identity: achievementId, achievementName
* Display: description, badgeIcon
* Reward: pointsValue
* Rules: category, criteriaJson

## Responsibilities:

* Define earning criteria
* Calculate progress percentage
* Provide visual representation
* Categorize by type (streak/hours/social/subject)

# 7. Message

## Purpose:

Represents a private communication between study partners, enabling coordination and collaboration for study sessions.

## Key Attributes:

* Identity: messageId
* Participants: senderId, recipientId
* Content: messageText
* Status: isRead, readAt
* Timeline: createdAt, deletedAt

## Responsibilities:

* Store message content securely
* Track read receipts
* Support soft deletion
* Enable real-time delivery
* Maintain conversation history

# 8. UserNotification

## Purpose:

Represents a system-generated alert or reminder sent to users about their study activities, achievements, or social interactions.

## Key Attributes:

* Identity: notificationId
* Recipient: userId
* Content: type, title, message
* Delivery: sentVia (push/email/inApp)
* Status: isRead, readAt
* Data: dataJson (additional context)

## Responsibilities:

* Queue notifications for delivery
* Track delivery status
* Support multiple channels
* Store notification history
* Enable notification preferences

# 9. StudyPlan

## Purpose:

Represents a long-term study schedule or curriculum, organizing multiple study sessions around specific goals or timeframes.

## Key Attributes:

* Identity: planId, planName
* Details: description
* Timeline: startDate, endDate
* Status: isActive
* Metadata: createdAt, updatedAt

## Responsibilities:

* Group related study sessions
* Track overall progress
* Provide study structure
* Support semester/term planning

# 10. UserSubscription

## Purpose:

Manages premium subscription status and billing information for users who upgrade to Study Gold features.

## Key Attributes:

* Identity: subscriptionId
* Plan: planType (free/studyGoldMonthly/studyGoldYearly)
* Status: status (active/cancelled/expired/pastDue)
* Timeline: startDate, endDate
* Billing: paymentProvider, providerSubscriptionId

## Responsibilities:

* Track subscription lifecycle
* Enable/disable premium features
* Handle renewal dates
* Integrate with payment providers
* Manage subscription changes