XPStrength Full Database Specification

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User (Table: Users)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
username	STRING(30)	No	Yes	—	3–30 chars; alphanumeric + '_'; no profanity (isTextClean)
password	STRING	No	No	—	8–100 chars; upper, lower, digit, symbol; hashed before save
email	STRING(50)	No	Yes	—	Valid email format (3–50 chars)
profile_pic	BLOB	Yes	No	NULL	JPEG/PNG only; resized to max 400×400
authority	STRING	No	No	basic	One of allowed roles (checkAuthType)
level	INTEGER	No	No	0	0–100
xp	INTEGER	No	No	0	>= 0
total_friends	INTEGER	No	No	0	>= 0
total_workouts	INTEGER	No	No	0	>= 0
total_time_worked_out	INTEGER	No	No	0	Seconds >= 0
total_coins	INTEGER	No	No	0	>= 0
shop_unlocks	JSON	No	No	[]	Array of product IDs (checkShopProductFormat)

Relationships: hasOne Friend, hasOne Milestone, hasMany Goal, hasMany CustomWorkout, hasMany WorkoutLog, hasOne PersonalBest, hasOne ExerciseLog, hasOne WorkoutPlan, hasOne Stats, hasOne Auth, hasMany History, hasMany Event

Indexes: id, username, email

Friend (Table: Friends)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
incoming_requests	JSON	No	No	[]	User ID array (incomingRequestsFormat)
outgoing_requests	JSON	No	No	[]	User ID array (outgoingRequestFormat)
friends	JSON	No	No	[]	User ID array (friendStoreFormat)

Relationships: belongsTo User

Indexes: user_id

JSON Format: Arrays of unique user ID integers

Milestone (Table: Milestones)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
milestones	JSON	No	No	[]	Array of milestones (checkMilestoneFormat)

Relationships: belongsTo User

Indexes: user_id

JSON Format: Array of milestone entries

Goal (Table: Goals)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	No	—	FK → Users.id CASCADE
name	STRING	No	No	—	3–80 chars; clean text
type	STRING	No	No	checkbox	Goal type (typeGoalCheck)
details	STRING	No	No	""	Up to 400 chars
total	INTEGER	No	No	1	1–1,000,000
current	INTEGER	No	No	0	0–total

Relationships: belongsTo User

Indexes: user_id

CustomWorkout (Table: customWorkouts)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	No	—	FK → Users.id CASCADE
name	STRING	No	No	—	3–80 chars; clean text
exercises	JSON	No	No	[]	Array of exercise objects (checkCustomWorkoutFormat)

Relationships: belongsTo User

Indexes: user_id

JSON Format: Each entry: {exercise:number, reps:number, sets:number, cooldown:number}

WorkoutLog (Table: workoutLog)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	No	—	FK → Users.id CASCADE
length	INTEGER	No	No	0	Total workout length in seconds
exercises	JSON	No	No	[]	Array of exercises (checkLogWorkoutFormat)

Relationships: belongsTo User

Indexes: user_id, id

JSON Format: Array with exercise logs

PersonalBest (Table: PersonalBests)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
personal_bests	JSON	No	No	[]	Array (personalBestValidator)

Relationships: belongsTo User

Indexes: user_id

JSON Format: Array of {exercise:number, workoutId:number}

WorkoutPlan (Table: workoutPlan)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
plan	JSON	No	No	[-1×7]	Default -1 for each day; validated by workoutPlanValidator

Relationships: belongsTo User

Indexes: user_id

JSON Format: Length 7 array: CustomWorkout ID or -1

Stats (Table: Stats)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
total	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
chest	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
core	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
back	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
shoulders	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
triceps	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
biceps	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator
legs	JSON	No	No	{"sets":0,"reps":0,"volume":0}	Validator statsValidator

Relationships: belongsTo User

Indexes: user_id

JSON Format: JSON object per muscle group

History (Table: History)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	No	—	FK → Users.id CASCADE
action	STRING	No	No	—	Clean text (isTextClean)

Relationships: belongsTo User

Indexes: user_id, id

Auth (Table: Auth)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
authorized	BOOLEAN	No	No	false	Auth flag

Relationships: belongsTo User

Indexes: user_id

Event (Table: Events)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	No	—	FK → Users.id CASCADE
type	STRING(40)	No	No	—	isIn events.json
actor_id	INTEGER	Yes	No	NULL	FK → Users.id SET NULL
resource_id	INTEGER	No	No	—	Referenced resource ID
payload	JSON	Yes	No	NULL	Optional JSON payload
seen_at	DATE	Yes	No	NULL	Seen timestamp

Relationships: belongsTo User, belongsTo User (actor_id)

Indexes: user_id, id

ExerciseLog (Table: exerciseLog)

Column	Type	Null	Unique	Default	Notes
id	INTEGER	No	Yes	Auto-increment	Primary Key
user_id	INTEGER	No	Yes	—	FK → Users.id CASCADE
exercise_history	JSON	No	No	{}	JSON object of logs (isValidExerciseHistory)

Relationships: belongsTo User

Indexes: user_id

JSON Format: Object keyed by exercise ID with {sets, reps, notes}

ER Diagram