**Coding Practice GitHub Assignment**

**Aggregation Operations**

**1. Users.json**

**a) Count of users by role**

*db.users.aggregate([*

*{ $group: { \_id: "$role", count: { $sum: 1 } } }*

*])*

**b) List all users sorted alphabetically**

*db.users.aggregate([*

*{ $sort: { name: 1 } },*

*{ $project: { name: 1, email: 1, role: 1, \_id: 0 } }*

*])*

**2. Teams.json**

**a) Count teams by captain**

*db.teams.aggregate([*

*{ $group: { \_id: "$captainId", totalTeams: { $sum: 1 } } }*

*])*

**b) Sort teams by player count**

*db.teams.aggregate([*

*{ $project: { name: 1, playerCount: { $size: "$players" } } },*

*{ $sort: { playerCount: -1 } }*

*])*

**3. Booking.json**

**a) Total bookings per venue**

*db.bookings.aggregate([*

*{ $group: { \_id: "$venueId", totalBookings: { $sum: 1 } } },*

*{ $sort: { totalBookings: -1 } }*

*])*

**b) Count confirmed vs cancelled bookings**

*db.bookings.aggregate([*

*{ $group: { \_id: "$status", count: { $sum: 1 } } }*

*])*

**4. Matches.json**

**a) Match count per status (scheduled, completed)**

*db.matches.aggregate([*

*{ $group: { \_id: "$status", total: { $sum: 1 } } }*

*])*

**b) Count matches won by each team**

*db.matches.aggregate([*

*{ $match: { winnerTeamId: { $ne: null } } },*

*{ $group: { \_id: "$winnerTeamId", wins: { $sum: 1 } } }*

*])*

**5. Venue.json**

**a) Average price per hour**

*db.venue.aggregate([*

*{ $group: { \_id: null, avgPrice: { $avg: "$pricePerHour" } } }*

*])*

**b) Top 5 largest venues by capacity**

*db.venue.aggregate([*

*{ $sort: { capacity: -1 } },*

*{ $limit: 5 },*

*{ $project: { name: 1, capacity: 1, \_id: 0 } }*

*])*

**6. Achievements.json**

**a) Count of achievements per user**

*db.achievements.aggregate([*

*{$group: {*

*\_id: "$userId",*

*totalAchievements: { $sum: 1 }}},*

*{*

*$sort: { totalAchievements: -1 }}])*

**b) List all distinct achievement titles and their counts**

*db.achievements.aggregate([*

*{$group: {*

*\_id: "$achievementTitle",*

*count: { $sum: 1 }}},*

*{*

*$sort: { count: -1 } }])*

**7. Fixtures.json**

**a) Fixtures per tournament**

*db.fixtures.aggregate([*

*{ $group: { \_id: "$tournamentId", fixtureCount: { $sum: 1 } } }*

*])*

**b) List of upcoming fixtures with team names**

*db.fixtures.aggregate([*

*{ $match: { status: "upcoming" } },*

*{*

*$lookup: {*

*from: "teams",*

*localField: "teamAId",*

*foreignField: "\_id",*

*as: "teamA"*

*}*

*},*

*{*

*$project: {*

*startTime: 1,*

*"teamA.name": 1,*

*teamBId: 1*

*}*

*}*

*])*

**8. Scores.json**

**a) Total runs scored per player**

*db.scores.aggregate([*

*{ $group: { \_id: "$playerId", totalRuns: { $sum: "$runs" } } },*

*{ $sort: { totalRuns: -1 } }*

*])*

**b) Average runs per match**

*db.scores.aggregate([*

*{ $group: { \_id: "$matchId", avgRuns: { $avg: "$runs" } } }*

*])*

**9. Payments.json**

**a) Total revenue generated**

*db.payments.aggregate([*

*{ $group: { \_id: null, totalRevenue: { $sum: "$amount" } } }*

*])*

**b) Payments grouped by mode**

*db.payments.aggregate([*

*{ $group: { \_id: "$mode", total: { $sum: "$amount" }, count: { $sum: 1 } } }*

*])*