21-Day MongoDB Aggregation Pipeline Challenge

This challenge is designed to help you master MongoDB's Aggregation Pipeline with real-world tasks and increasing complexity. Each day builds upon the previous to enhance your skills in data processing, transformation, and analysis.

Start Date: June 17, 2025

Week 1: Foundation & Core Stages

- Day 1: Introduction to Aggregation: Use $match and $project on a users collection.
- Day 2: Filtering & Projection: Practice $match, $project, $addFields.
- Day 3: Grouping Data: Learn $group, $sum, $avg, $count.
- Day 4: Sorting & Limiting: Use $sort, $limit, $skip.
- Day 5: Unwinding Arrays: Learn $unwind on a tags array.
- Day 6: Working with Dates: Group orders by month/year using $year, $month.
- Day 7: Conditional Operators: Use $cond, $ifNull, $switch.

Week 2: Intermediate + Use Cases

- Day 8: Lookup (Joins): Use $lookup, $unwind, $mergeObjects.
- Day 9: Pipeline in Lookup: Join and filter only completed orders.
- Day 10: Nested Documents: Get comment counts for each post.
- Day 11: Facets for Dashboards: Use $facet for multiple groupings.
- Day 12: Bucketing & Binning: Use $bucket, $bucketAuto.
- Day 13: Text Search: Use $search (Atlas) or $regex.
- Day 14: Array Aggregation: Use $filter, $map, $reduce.

Week 3: Advanced + Mini Projects

- Day 15: Transaction-like Logs: Use $merge or $out.
- Day 16: Recursive Trees: Use $graphLookup.
- Day 17: Dynamic Aggregation: Use $let or dynamic filters.
- Day 18: Analytics Dashboard: Combine stages for real analytics.
- Day 19: Performance Tuning: Use explain() and indexing.
- Day 20: Reusable Pipelines: Build reusable functions in JS.
- Day 21: Final Project: Build full analytics for a dataset.