**MongoDB Exercise Set #2: Project & Task Tracker** *Database: taskmanager Collections: projects , tasks , users*

**Section 1: Basic Document Modeling & Insertion**

1 Create a database called taskmanager

2 Insert 3 users into a users collection. Each should have:

name (string)

email (string)

role (either "admin" , "manager" , or "developer" )

active (boolean)

3 Insert 2 projects into a projects collection:

title , description , startDate , status (e.g. "active" , "completed" ) Embed a createdBy sub-document containing the user’s \_id , name

4 Insert 5 tasks into a tasks collection:

Fields: title , assignedTo (user \_id ), projectId , priority , dueDate , status

**Section 2: Filtering & Querying**

5 Find all tasks with priority "high" that are not completed 6 Query all active users with role "developer"

7 Find all tasks assigned to a specific user (by ObjectId )

8 Find all projects started in the last 30 days

**Section 3: Update Operations**

9 Change the status of one task to "completed"

Add a new role field called "teamLead" to one of the users

1 1 Add a new tag array to a task: ["urgent", "frontend"]

**Section 4: Array and Subdocument Operations**

1 2 Add a new tag "UI" to the task’s tags array using $addToSet 1 3 Remove "frontend" from a task’s tag list

1 4 Use $inc to increment a project ’s progress field by 10

**Section 5: Aggregation & Lookup**

1 5 Use $lookup to join tasks with users and show task title + assignee name

1 6 Use $lookup to join tasks with projects , and filter tasks where project status = active

1 7 Use $group to get count of tasks per status

1 8 Use $match , $sort , and $limit to get top 3 soonest due tasks