

# Phase 2 Requirements

## 1. Project Overview

This document describes the requirements for **Phase 2 of the MongoDB Project**. Students must build:

- A full **MongoDB database**
  - A WinForms application integrated with the database
  - A complete documentation report
  - At least **4 aggregation pipeline reports** based on the project domain
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## 2. MongoDB Script Requirements

Your MongoDB script must follow the required structure below.

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### 2.1 Database & Collection Creation

Students must:

- Create a new database specifically for the project
  - Create all collections needed according to the project idea
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### 2.2 Data Insertion Requirements

Students must:

- Insert a **minimum of 10 documents** distributed across the collections
  - Use valid, realistic data
  - Include embedded documents whenever suitable
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### 2.3 CRUD Operations

Your script must contain all four CRUD operation types:

- **Insert operations**
  - **Read queries**
  - **Update operations**
  - **Delete operations**
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## 2.4 Aggregation Pipelines (4 Required)

Students must create **at least four aggregation pipelines**, each functioning as a **report** that serves a real purpose in the project idea.

Each aggregation must be meaningful to the project domain and produce a final readable result.

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## 2.5 Schema Validation and Indexes

The script must include:

- JSON Schema validation rules for at least one collection
  - At least one index that supports performance improvement or common search patterns
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# 3. WinForms Application Requirements

Your application must contain:

### Required Forms

- Insert Form
- Update Form
- Delete Form
- Display/Search Form

### Functionality Requirements

- Connect to MongoDB using the official MongoDB driver
  - Allow insertion, updating, and deletion of records
  - Display results in DataGridView or similar control
  - Handle invalid inputs gracefully
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## 4. Documentation PDF Requirements

Your final PDF must contain:

- Project Name
  - Team No , Team members (Name and ID)
  - Project overview
  - MongoDB database design
  - List and explanation of collections
  - Screenshots of the MongoDB script execution
  - Screenshots of the application working
  - Results of aggregation pipelines
  - Clear sectioning and technical writing
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## 5. Final Deliverables

Students must submit:

- MongoDB script file (.js)
- WinForms project as a .zip file
- Documentation PDF

Deadline : 7 December 2025