

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
-

2. MongoDB Script Requirements

Your MongoDB script must follow the required structure below.

2.1 Database & Collection Creation

Students must:

- Create a new database specifically for the project
 - Create all collections needed according to the project idea
-

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
-

2.3 CRUD Operations

Your script must contain all four CRUD operation types:

- **Insert operations**
 - **Read queries**
 - **Update operations**
 - **Delete operations**
-

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.

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
-

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
-

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
-

5. Final Deliverables

Students must submit:

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

Deadline : 7 December 2025