

## Homework 1.2

Objective: Installing MySQL & Creating Databases

- Tasks:
  - Install MySQL using the Developer Default setup and configure the server with a password.
  - Open MySQL Workbench and run the provided SQL script to create a sample database and tables.
  - Verify your database by querying tables in MySQL Workbench.
- Submit:
  - Installation steps summary
  - SQL commands used
  - Screenshot of your created database & table data
  - Short note (3-4 lines) on the benefits of MySQL Workbench
- Resource Link: [Installing MySQL and Creating Databases](#)

## Installing MongoDB Database

### Installation Steps

1. Download the MongoDB from their official website, Home page → Products → Community Edition (Select latest version, OS and the package).
2. Open the downloaded .msi file and click next → accept license → then click next → check MongoDB Compass (GUI) → complete the installation.
3. Add MongoDB path to System Path.
4. Download MongoDB shell for Command Line Interface.
5. Open the downloaded .msi file and install.
6. Installation can be verified with the command mongosh --version
7. Use command 'mongosh' to use the shell

### Commands used to create Database and Query Data

- use demodb --- creates new DB or use existing DB
- db.createCollection('posts') --- creates Collection names posts
- db.posts.insertOne(...) ---- inserts Data
- db.posts.find() ----- lists the available Data
- db.posts.updateOne(...) ----- Update Data
- db.posts.delete(...) ----- Delete Data
- use admin/test ----- to switch to different db
- exit/quit() ----- exit shell

### Screenshot of the Created MongoDB Database & Collection Data

```
Microsoft Windows [Version 10.0.22631.5353]
(c) Microsoft Corporation. All rights reserved.

C:\Users\pavin>mongosh
Current Mongosh Log ID: 69186c542e2ca3915b63b111
Connecting to:          mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.5.9
Using MongodB:          8.2.1
Using Mongosh:          2.5.9
For mongosh info see: https://www.mongodb.com/docs/mongodb-shell/

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

The server generated these startup warnings when booting
2025-11-15T13:03:27.100+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted

test> show dbs
admin 40.00 KiB
config 60.00 KiB
local 40.00 KiB
test> use demodb
switched to db demodb
demodb> show dbs
admin 40.00 KiB
config 60.00 KiB
local 40.00 KiB
demodb 40.00 KiB
demodb> db.createCollection('posts')
{ ok: 1 }
```

Collection Creation

```

mongosh mongoDB/127.0.0.1 + v
...
{
  acknowledged: true,
  insertedId: ObjectId('69186ff32e2ca3915b63b112')
}
demodb> db.posts.insertMany([
  ...
  {
    title: "Post Title 2",
    body: "Body of post.",
    category: "Event",
    likes: 2,
    tags: ["news", "events"],
    date: Date()
  },
  ...
  {
    title: "Post Title 3",
    body: "Body of post.",
    category: "Technology",
    likes: 3,
    tags: ["news", "events"],
    date: Date()
  },
  ...
  {
    title: "Post Title 4",
    body: "Body of post.",
    category: "Event",
    likes: 4,
    tags: ["news", "events"],
    date: Date()
  }
], {
  acknowledged: true,
  insertedIds: [
    '_id': ObjectId('691870272e2ca3915b63b113'),
    ...
  ]
})

```

```

Command Prompt x + v
demodb> db.posts.find()
[
  {
    _id: ObjectId('69186ff32e2ca3915b63b112'),
    title: 'Post Title 1',
    body: 'Body of post.',
    category: 'News',
    likes: 1,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  },
  {
    _id: ObjectId('691870272e2ca3915b63b113'),
    title: 'Post Title 2',
    body: 'Body of post.',
    category: 'Event',
    likes: 2,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  },
  {
    _id: ObjectId('691870272e2ca3915b63b114'),
    title: 'Post Title 3',
    body: 'Body of post.',
    category: 'Technology',
    likes: 3,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  },
  {
    _id: ObjectId('691870272e2ca3915b63b115'),
    title: 'Post Title 4',
    body: 'Body of post.',
    category: 'Event',
    likes: 4,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  }
]

```

## Insertion of Data

## Collection Data

```

mongosh mongoDB/127.0.0.1 + v
...
{
  $set: { body: "Updated body for post 1" }
}
demodb> db.posts.updateOne({title:'Post Title 1'},{$set:{body:'This post discusses the key highlights and outcomes of our recent community meetup. It also covers the important updates shared during the session.'}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
demodb> db.posts.updateOne({title:'Post Title 2'},{$set:{body:'Here we explore the details of the upcoming event and why it is important for our community. The post also includes a quick overview of the schedule.'}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
demodb> db.posts.updateOne({title:'Post Title 3'},{$set:{body:'This post highlights the latest trends in technology and how they are shaping the future. It also explains how developers can adapt to these innovations.'}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
demodb> db.posts.updateOne({title:'Post Title 4'},{$set:{body:'In this post we cover the major announcements made during the recent event. You will also find insights into the key takeaways and participants.'}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}

```

## Updating Existing Data

```

Command Prompt x + v
demodb> db.posts.deleteOne({title: 'Post Title 4'})
{ acknowledged: true, deletedCount: 1 }
demodb> db.posts.find()
[
  {
    _id: ObjectId('69186ff32e2ca3915b63b112'),
    title: 'Post Title 1',
    body: 'This post discusses the key highlights and outcomes of our recent community meetup. It also covers the important updates shared during the session.',
    category: 'News',
    likes: 1,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  },
  {
    _id: ObjectId('691870272e2ca3915b63b113'),
    title: 'Post Title 2',
    body: 'Here we explore the details of the upcoming event and why it is important for our community. The post also includes a quick overview of the schedule.',
    category: 'Event',
    likes: 2,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  },
  {
    _id: ObjectId('691870272e2ca3915b63b114'),
    title: 'Post Title 3',
    body: 'This post highlights the latest trends in technology and how they are shaping the future. It also explains how developers can adapt to these innovations.',
    category: 'Technology',
    likes: 3,
    tags: ['news', 'events'],
    date: 'Sat Nov 15 2025 17:58:03 GMT+0530 (India Standard Time)'
  }
]

```

## Deleting Data

## **Benefits of MongoDB**

MongoDB is a powerful NoSQL database that stores data in flexible, JSON-like documents, making it ideal for modern applications. It supports high scalability, fast read–write operations, and seamless handling of unstructured or evolving data. MongoDB's dynamic schema and horizontal scaling make it suitable for real-time, cloud-based, and large-scale systems. Its shell provides full control for queries, updates, and database management using simple, developer-friendly commands.