# Data Modeling Session Guide

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## Goals and objectives

The purpose of this lab is to provide participants with a better understanding of the data modeling methodology. This will enable them to build more performant applications and have a better experience when using MongoDB.

* Find the entities in a given application
* Identify the workloads based on a list of requirements
* Understand the relationship between the entities and when to embed or reference
* Apply some of the more practical design patterns

## Pre-requisites

There are no prerequisites for this session. The session includes the intro lab, the prerequisite for most subsequent sessions.

## Format

This is a half-day session (3,5 hours). The session is done mostly using the printed material. Participants fill those worksheets during the session. Speaker is expected to lecture about 60-90 minutes, the rest of the time being dedicated to hands-on activities.

## Material

Agenda: [Data Modeling Hands-On Session Agenda](https://docs.google.com/spreadsheets/d/16-XTJlzu6QXvWtAEGgKeohKTzpCB_ZwsOxqV8NN-y2M/edit#gid=0)

Slides: [Data Modeling Hands-On Session Slides](https://docs.google.com/presentation/d/1mQhMMQKygL-OfDqoQhRUeG-uH37fkwJ6aD6uPVHKt2E/)

Recording: [Recording](https://mongodb.zoom.com/rec/share/eZ3IbzTi92-qjee70CJuKM0dNVw4ZMdemYZPSHtUH-ZfXPKk96qgjVTrf9T31xuq.iZdxrdOzWeC6JuPl) Passcode: M#EzqV5&

Self-paced instructions: <https://mongodb-developer.github.io/intro-lab>

Self-paced Github repo: <https://github.com/mongodb-developer/intro-lab>

Print Material: [Data Modeling Hands-On Session Printed Material](https://docs.google.com/presentation/d/1Tlhvs_RGf5HoiYk_KVpjHXkCz93D5Oz05kc4eGMDmX0/edit?usp=sharing)

## Title and abstract

*Data Modeling and Design Patterns - A Hands-on Session*

Join us for an enriching "Data Modeling and Design Patterns" hands-on session that sets the tone for the day. As the sun rises on your learning journey, discover the art of shaping data into the document model with MongoDB. From the fundamentals of data modeling to the heights of advanced patterns, empower yourself with the skills to maximize MongoDB's potential. Craft your data landscape with precision, and watch as your application thrives under your masterful guidance.

## Code

All the code samples for the hands-on session are part of the [library management system repository](https://github.com/mongodb-developer/library-management-system). The code the participants will change is located in the `getBook` method in the `server/src/controllers/books.ts` file.

## Follow-up challenge

During the data modeling session, you were taught that in MongoDB, relationships could be established in two ways. The first way is by using embedded documents, and the second way is by creating a reference. Additionally, you learned about a design pattern that combines both methods. Do you remember the name of this design pattern?

During the morning session, you explored the schema model for a library management system. Considering the system requirements and what you learned during the session, how would you implement a list of ‘Monthly (Book) Favourites’? The list will be displayed on the main UI screen that users end up on. Which design patterns might you use to optimize the query?

Lost your cluster? Here are the instructions to get it back up and running: <https://mongodb-developer.github.io/intro-lab>

Can’t remember how to query your data, here’s the content you received at the event: <https://mdb.link/developer-day-toronto>