# Search Lab Guide

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## Goals and objectives

This lab aims to enable participants to use Atlas Search and Vector Search. At the end of this Lab, participants will be able to:

* Create search indexes in the Atlas UI
* Enable Atlas Search on their cluster
* Build an aggregation pipeline that uses $search and the newly created index
* Create a vector search index
* Query data using the $vectorSearch stage

In addition to these goals, the Lab also offers more advanced content that covers:

* Using various Search operators
* Using facets

## Pre-requisites

This lab builds on top of the data modeling session. If the participants haven’t done the session, they should go through the [intro lab](https://mongodb-developer.github.io/intro-lab) first.

## Format

This is a 90-minute session. The speaker is expected to lecture no more than 30 minutes, with the rest of the time dedicated to hands-on activities. The participants are expected to follow the self-paced content during the hands-on parts of the session.

## Material

Agenda: [Search Lab Agenda](https://docs.google.com/spreadsheets/d/1NBe_kAilVUALsPQcF4XfRXvuew5r5J5-mpNPhWjV6x8/edit#gid=0)

Slides: [Search Lab Slides](https://docs.google.com/presentation/d/1cLhHI5_35j1wEc1X0dx41E8qrRWPLslB82V0ZeF7kUg/edit#slide=id.g285f78fee04_1_2536)

Recording: [Recording](https://mongodb.zoom.com/rec/share/X8wheF5bnHpHbyzatclwIrynxxnpPt5a1Hxs7eWpgeX5Y__O_Fhtf0CcFFXN2va8.w5bgndECFcXWVmrm?startTime=1710436403000) Passcode: d9k\*$++n

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

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

Print Material: No print material for this Lab

Common pitfalls: [Search Lab Pitfalls](https://docs.google.com/document/d/1Qg_IrKv9M_d1nbUBDQv8zyZrGxOaD-VuIWqG9M8H8FI/edit?usp=drive_link)

## Follow-up challenge

For the search lab:

Do you recall how to do a full-text search query? Go back to your cluster, which contained the library collection. Write an aggregation pipeline that will return all the documents with the word “king” in the title, the author name, or the synopsis. Results that contain the word in the title should be scored twice as high.

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>

## Title and abstract

*Creating Compelling Search Experiences: Exploring MongoDB’s Advanced Search Features*

Join this session for a journey into modern search capabilities. Delve into the art of full-text search using Atlas Search and Lucene as your compass. As we navigate deeper, discover how to enrich your application and power AI capabilities with semantic search using Atlas Vector Search. Get ready to roll up your sleeves, engaging in a hands-on experience that equips you to transform your user experience.

## Code

All the code samples for the lab 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 `searchBooks` method in the `server/src/controllers/books.ts` file.