

Query Optimization

Adrianna Holden-Gouveia

Website: <https://aholdengouveia.name>

in: aholdengouveia

Q: aholdengouveia

Objectives:

1. Learn how to work with indexes
2. Demonstrate how to add an index to a table to make it more efficient

Complete the following problems

References, a video, a PowerPoint and some notes are available at my website <https://www.aholdengouveia.name/AdvData/optimization.html>

Query optimization practice on Kaggle

Go to <https://www.kaggle.com/learn/advanced-sql> and sign up for Kaggle, it's free, use any email you want. If you are unfamiliar with the way kaggle works, there is a tutorial section, and an exercises section for this course.

- Go through the Advanced SQL course. Take a screenshot of the completed course in your profile. Make sure to include your name and the term in your screenshot. This should show you completed the tutorials
- Now you'll be doing the exercises. Go through the exercise on Query Optimization, it should be problems related to Pet Costumes International. Take a screenshot of your solution to both problems. Make sure to include your name and term in the screenshot.

Query Optimization Challenges

For each query make sure to include a short (1 paragraph or less) explanation of how you optimized it and solved the problem. Each problem should also include your solution typed out, and a screenshot of your solution being run. Make sure all screenshots include your name and the term.

Go to <https://www.sandboxsql.com/> and load in the database located here <https://github.com/aholdengouveia/aholdengouveia.github.io/blob/main/AdvData/labs/BooksDatabase.sqlite> for the following problems.

Note: The queries don't always copy over well, especially symbols like the single quote.

1. On your database, if I give you the information on a book title, what is the command used to create an index to run the query more efficiently?
2. Given the following query, which will select a book with a given title, what command would you use to create an index to make this query more efficient?

```
SELECT authors.name, books.genre
FROM books INNER JOIN authors
ON books.author_id = authors.author_id
WHERE books.title = 'Dune'
```

3. Given the following query, which selects books from a table, create a command that will add an index based on genre. Then give a new query that will show fantasy books only, making sure to use the index you created.

```
SELECT authors.name, books.genre
FROM books INNER JOIN authors
ON books.author_id = authors.author_id
```

Deliverables

- Document for the portion of this lab using Kaggle to practice query optimization and review your SQL.

- Document for the challenges. Each challenge should include the solution typed out, an explanation of how you arrived at your solution including any resources used, and a screenshot of the solution being run, each screenshot must include your name and the term.