Assignment 6: Explore Courses

Due ***March 1st at 11:59pm***

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Overview

For this assignment, you will be exercising your understanding of `std::optional`. This assignment makes use of the same `courses.csv` file from assignment 1. We are going to randomly add some of these classes into a `Database` object. You are tasked to write one function for this assignment, which *attempts* to find the Class object in the database, and return it. Take a look at the code and review the `Database` class to understand the interface. Take a look at the `main.cpp` file to understand how certain functions are being called.

Download the starter code here.

Part 1: Write a find_classes method

This method takes in a string `class_name`, which is a string, and the function should try to find the class inside of the `unordered_map` private member of the `Database` objet. What should the return type be? (**hint**: there may or may not be a `Class` for the `class_name` passed in)

I think once you figure out what the return type is, you'll realize what to return if the class is not present. (**hint:** see slide 37 in the std::optional & type safety lecture)

General hints:

- You may *find* the `.find()` method for the `unordered_map` useful. Check it out here!
- Make use of iterators

Part 2: Fill in the rest of the STUDENT TODOs

Now that you have implemented the `find_classes` method make sure to

- include the optional package at the top of the `database.cpp` file.
- In the `main.cpp` check whether or not the optional has a value
    - What optional method did we talk about during the lecture that can do this?

Test your code:

Compile: `g++ -std=c++20 main.cpp -o main`

Then run: `./main`

You should then, if your `find_classes` function works as intended, you should get a message that says "Great job!" in the terminal.

Feedback Survey

Please fill out this anonymous feedback form to help us improve these short assignments in the future!

Submitting Instructions

When you have completed this assignment, upload all of the files to Paperless under the correct assignment heading.
Your deliverables should be:

- **main.cpp**
- **database.cpp**

You may resubmit as many times as you'd like before the deadline. Please let us know if you have any questions as you work on the assignment!