

CSE530S

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Studio: Create it!

Introduction

In this studio you will:

Design a database

Plan for an implementation of your database

Implement your database

You are encouraged to work in groups of up to 4 people. Please do not just let one person do all of the work while everyone else watches. It is important for everyone to follow these steps and participate in the studio.

Designing a database for tracking courses

Your first task is to design a database for tracking student's progress through courses at a university. Unlike the example from class, you will not be provided with any starter information. It is up to you to decide what the requirements should be. This means that different groups may come up with different designs - this is okay! Use your own experiences to help you come up with a design that makes sense.

First, come up with some entities. Then, decide on what attributes each entity should have. You do not need to come up with a comprehensive list of attributes, but make sure that each entity has at least a few attributes. Next, decide on what relationships exist between your entities. Finally, draw the ER diagram for your design, including all of the information.

Planning for an implementation

In this studio, you will not be tasked with actually implementing your design (though you will be expected to do this sometime in the future). Instead, answer the following questions that are typically considered when implementing a database:

What data types should each attribute have? Include these datatypes in your diagram.

Decide on roughly how much space you should have for your database. To do this, consider the following: how much space

does one row in each table take up? The [documentation](#) can help you with this part. Next, decide on roughly how many rows you expect each table to contain. For reference, there are roughly 15,000 students attending Washington University. How much data would you expect to be generated in a year? In four years? You do not need to be exact here, an estimate is fine. Is your design normalized properly? To determine this, it may be helpful to make up some sample data in tabular format (paper and pen should be fine for this). Run through the three forms and make sure your design is normalized, fixing it if it is not.

Implementation

Now that you have your design solidified, your final task is to implement it.

- * Create a new database to hold your schema
- * Create all of the tables in your schema (don't worry about the relationships, we have not discussed those in detail yet)
- * Make up a few rows of sample data for each table and insert it into the tables