

Module 12 Challenge

[Start Assignment](#)

Due Monday by 11:59pm **Points** 100 **Submitting** a text entry box

SQL Challenge: Employee Tracker

Developers frequently have to create interfaces that allow non-developers to easily view and interact with information stored in databases. These interfaces are called **content management systems (CMS)**. Your assignment this module is to build a command-line application from scratch to manage a company's employee database, using Node.js, Inquirer, and MySQL.

IMPORTANT

In order to install `inquirer`, please use `npm i inquirer@8.2.4`.

Because this application won't be deployed, you'll also need to create a walkthrough video that demonstrates its functionality and all of the following acceptance criteria being met. You'll need to submit a link to the video and add it to the README of your project.

Refer to the [Video Submission Guide](https://coding-boot-camp.github.io/full-stack/computer-literacy/video-submission-guide) [↗\(https://coding-boot-camp.github.io/full-stack/computer-literacy/video-submission-guide\)](https://coding-boot-camp.github.io/full-stack/computer-literacy/video-submission-guide) on the Full-Stack Blog for additional guidance on creating a video.

User Story

AS A business owner

I WANT to be able to view and manage the departments, roles, and employees in my company

SO THAT I can organize and plan my business

Acceptance Criteria

GIVEN a command-line application that accepts user input

WHEN I start the application

THEN I am presented with the following options: view all departments, view all roles, view all employees

WHEN I choose to view all departments

THEN I am presented with a formatted table showing department names and department ids

WHEN I choose to view all roles

THEN I am presented with the job title, role id, the department that role belongs to, and the salary for each role

WHEN I choose to view all employees

THEN I am presented with a formatted table showing employee data, including employee ids, first names, last names, titles, departments, salaries, and managers

WHEN I choose to add a department

THEN I am prompted to enter the name of the department and that department is added to the database

WHEN I choose to add a role

THEN I am prompted to enter the name, salary, and department for the role and that role is added to the database

WHEN I choose to add an employee

THEN I am prompted to enter the employee's first name, last name, role, and manager, and that employee is added to the database

WHEN I choose to update an employee role

THEN I am prompted to select an employee to update and their new role and this information is updated

Mock-Up

The following video shows an example of the application being used from the command line:

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
1: node

4 Software Engineer Engineering 120000
5 Account Manager Finance 160000
6 Accountant Finance 125000
7 Legal Team Lead Legal 250000
8 Lawyer Legal 190000


? What would you like to do? View All Employees

id first_name last_name title department salary manager
--
1 John Doe Sales Lead Sales 100000 null
2 Mike Chan Salesperson Sales 80000 John Doe
3 Ashley Rodriguez Lead Engineer Engineering 150000 null
4 Kevin Tupik Software Engineer Engineering 120000 Ashley Rodriguez
5 Kunal Singh Account Manager Finance 160000 null
6 Malia Brown Accountant Finance 125000 Kunal Singh
7 Sarah Lourd Legal Team Lead Legal 250000 null
8 Tom Allen Lawyer Legal 190000 Sarah Lourd

? What would you like to do? Add Department
? What is the name of the department? Service
Added Service to the database
? What would you like to do? Add Role
? What is the name of the role? Customer Service
? What is the salary of the role? 80000
? Which department does the role belong to?
Engineering
Finance
Legal
  
```

1:35

Getting Started


You'll need to use the [MySQL2 package](https://www.npmjs.com/package/mysql2)  (<https://www.npmjs.com/package/mysql2>) to connect to your MySQL database and perform queries, and the [Inquirer package](https://www.npmjs.com/package/inquirer/v/8.2.4)  (<https://www.npmjs.com/package/inquirer/v/8.2.4>) to interact with the user via the command line.

IMPORTANT

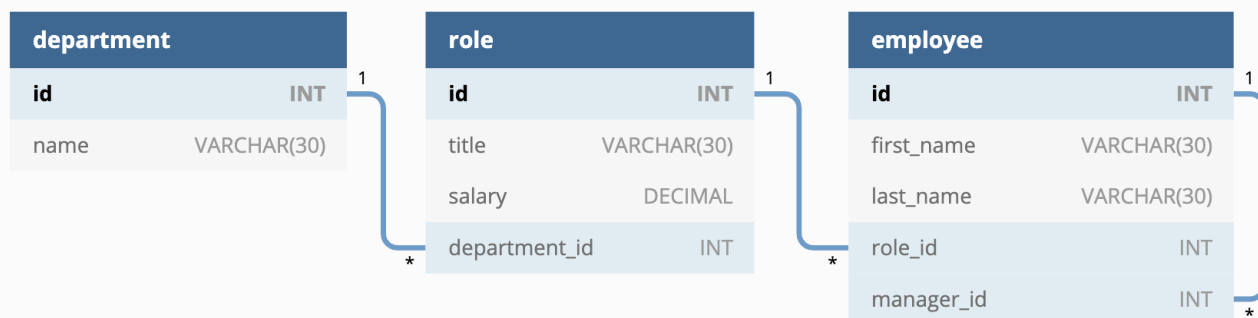
In order to install `inquirer`, please use `npm i inquirer@8.2.4`.

IMPORTANT

You will be committing a file that contains your database credentials. Make sure that your MySQL password is not used for any other personal accounts, because it will be visible on GitHub. In upcoming lessons, you will learn how to better secure this password, or you can start researching npm packages now that could help you.

You might also want to make your queries asynchronous. MySQL2 exposes a `.promise()` function on Connections to upgrade an existing non-Promise connection to use Promises. To learn more and make your queries asynchronous, refer to the [npm documentation on MySQL2](https://www.npmjs.com/package/mysql2)  (<https://www.npmjs.com/package/mysql2>).

Design the database schema as shown in the following image:



As the image illustrates, your schema should contain the following three tables:

- **department**
 - **id**: INT PRIMARY KEY
 - **name**: VARCHAR(30) to hold department name
- **role**
 - **id**: INT PRIMARY KEY
 - **title**: VARCHAR(30) to hold role title
 - **salary**: DECIMAL to hold role salary
 - **department_id**: INT to hold reference to department role belongs to
- **employee**
 - **id**: INT PRIMARY KEY
 - **first_name**: VARCHAR(30) to hold employee first name
 - **last_name**: VARCHAR(30) to hold employee last name
 - **role_id**: INT to hold reference to employee role
 - **manager_id**: INT to hold reference to another employee that is the manager of the current employee (**null** if the employee has no manager)

You might want to use a separate file that contains functions for performing specific SQL queries you'll need to use. A constructor function or class could be helpful for organizing these. You might also want to include a **seeds.sql** file to pre-populate your database, making the development of individual features much easier.

Bonus

Try to add some additional functionality to your application, such as the ability to do the following:

- Update employee managers.
- View employees by manager.
- View employees by department.
- Delete departments, roles, and employees.
- View the total utilized budget of a department—in other words, the combined salaries of all employees in that department.

Grading Requirements

NOTE

If a Challenge assignment submission is marked as “0”, it is considered incomplete and will not count towards your graduation requirements. Examples of incomplete submissions include the following:

- A repository that has no code
- A repository that includes a unique name but nothing else
- A repository that includes only a README file but nothing else
- A repository that only includes starter code

This Challenge is graded based on the following criteria:



Deliverables: 10%

- Your GitHub repository containing your application code.

Walkthrough Video: 27%

- A walkthrough video that demonstrates the functionality of the employee tracker must be submitted, and a link to the video should be included in your README file.
- The walkthrough video must show all of the technical acceptance criteria being met.
- The walkthrough video must demonstrate how a user would invoke the application from the command line.
- The walkthrough video must demonstrate a functional menu with the options outlined in the acceptance criteria.

Technical Acceptance Criteria: 40%

- Satisfies all of the preceding acceptance criteria plus the following:
 - Uses the [Inquirer package](https://www.npmjs.com/package/inquirer/v/8.2.4)  [_\(https://www.npmjs.com/package/inquirer/v/8.2.4\)_](https://www.npmjs.com/package/inquirer/v/8.2.4).
 - Uses the [MySQL2 package](https://www.npmjs.com/package/mysql2)  [_\(https://www.npmjs.com/package/mysql2\)_](https://www.npmjs.com/package/mysql2) to connect to a MySQL database.
- Follows the table schema outlined in the homework instructions.

Repository Quality: 13%

- Repository has a unique name.
- Repository follows best practices for file structure and naming conventions.

- Repository follows best practices for class/id naming conventions, indentation, quality comments, etc.
- Repository contains multiple descriptive commit messages.
- Repository contains a high-quality README with description and a link to a walkthrough video.

Application Quality 10%

- The application user experience is intuitive and easy to navigate.

Bonus

Fulfilling any of the following can add up to 20 points to your grade. Note that the highest grade you can achieve is still 100:

- Application allows users to update employee managers (2 points).
- Application allows users to view employees by manager (2 points).
- Application allows users to view employees by department (2 points).
- Application allows users to delete departments, roles, and employees (2 points for each).
- Application allows users to view the total utilized budget of a department—in other words, the combined salaries of all employees in that department (8 points).

How to Submit the Challenge

You are required to submit BOTH of the following for review:

- A walkthrough video demonstrating the functionality of the application.
- The URL of the GitHub repository, with a unique name and a README describing the project.

NOTE

You are allowed to miss up to two Challenge assignments and still earn your certificate. If you complete all Challenge assignments, your lowest two grades will be dropped. If you wish to skip this assignment, click Next, and move on to the next Module.

Comments are disabled for graded submissions in BootCamp Spot. If you have questions about your feedback, please notify your instructional staff or the Student Success Manager. If you would like to resubmit your work for an improved grade, you can use the Resubmit Assignment button to upload new links. You may resubmit up to three times for a total of four submissions.

IMPORTANT

It is your responsibility to include a note in the README section of your repo specifying code source and its location within your repo. This applies if you have worked with a peer on an assignment, used code in which you did not author or create sourced from a forum such as Stack Overflow, or you received code outside curriculum content from support staff such as an Instructor, TA, Tutor, or Learning Assistant. This will provide visibility to grading staff of your circumstance in order to avoid flagging your work as plagiarized.

If you are struggling with a Challenge or any aspect of the curriculum, please remember that there are student support services available for you:

1. Office hours facilitated by your TA(s)
2. Ask the class Slack channel/get peer support
3. AskBCS Learning Assistants

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