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Centare Take-Home Coding Exercise

Thank you for your interest in working at Centare! For the next step, we’d like to learn more about how you like to write code and what patterns you’re experienced with. Rather than ask you a series of puzzles and trivia questions, we’d like you to tackle some real-world problems. And rather than have us hovering over you for an hour or more, you can work at your best pace in an environment you’re comfortable with--just like our developers do.

# Instructions

* Choose a few of the requests in the list below to complete. **We neither expect you to nor intend for you to complete them all.** Spend only a couple hours implementing the pieces that you feel demonstrate your level of skill and experience.
* You are, of course, welcome to use the Internet as a resource. You can also contact Centare team members to ask clarifying questions or get more information. We can even offer hints if you are stuck!
* You should be able to complete any of the tasks using only the free Visual Studio Community edition and the included LocalDB, but you are welcome to use whichever tools you prefer. If you have issues getting your development environment set up, let us know and we can spin up a remote virtual machine for you.
* Once you’re done, send your code back to us and let us know which tasks you completed. If everything works, we’ll schedule an in-person follow-up to review your approach and your decisions.

# Introduction to the Application

We’re making a simple Check-In application. Users can view a list of Locations, choose one to check-in to, and view the list of their previous check-ins. There is also an Achievements feature.

The application is built using ASP.NET MVC 5, with the UI styling all coming from Bootstrap. The data backend is Entity Framework Code First and we have Automatic Migrations turned off. Take a look at the CheckInWeb.Data.Migrations.Configuration class for the default username(s) and password(s).

# Requests

1. Can you add some color to the site? Make the background of the top navigation bar your favorite color. Also alter the background colors of the primary buttons. - done
2. The login page should not show the header with the links. Can you change it so that no header is visible and the background color is different for the login page? - done
3. We would like to be able to add new Locations from the Web interface. Can you create a page that only lets users with the role “Admin” add a new Location? We only need to store the Location’s name, and we don’t need to edit or delete them after they’re added. - done
   1. Could you make this work via an AJAX request instead of a standard form submission? – done
   2. Note: Implemented as a modal that is displayed via a conditionally hidden button.
   3. Note: JQuery can be found in /Scripts/ajax-locations.js
   4. Note: Used a WebAPI controller to handle the ajax requests.
   5. Note: Added a unit test for the WebAPI controller that also uses the Moq framework to the unit test solution.
4. We want to be confident that the business logic around check-ins works. Can you make sure that section of code is testable and has enough unit tests to establish that confidence? Feel free to refactor the code to make it easier to test, including adding an IoC container, creating new classes or interfaces, or moving logic around.
5. Awarding achievements on check-in doesn’t seem to be working correctly. Could you investigate what is/are the issue(s) and make any necessary fixes?
6. We want to add a new achievement type, “Check in Together”. If you check in at the same location as someone else within an hour of each other, each user should receive this achievement.
7. On the home page, we’d like to display the top 10 locations for the past month (the ones with the most check-ins) and the user with the most check-ins at each. -done
8. Our most active users are complaining that it takes a long time to load their list of check-ins. Can you figure out why this is and fix it? –it would be more efficient to use the check in repository to query for check ins related to the user.