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Applicants,

The following challenge questions are designed to test your web programming ability as well as your engineering thought process. Challenge question #1 and #3 include programming. Please create fully functioning web pages. You are free to choose a technology you are comfortable with. Please include an appropriate error handling. Lastly, while aspects such as user experience and styling are not the primary concern of these challenges you should keep those elements in mind.

You must successfully complete all of the challenges to be considered for the next round of interviews. We look forward to reviewing your responses!

- The Cipher Tech Technical Recruiting Team

Challenge Question #1

Most web applications feature at least one form for collecting user data, as well as numerous other inputs fields throughout the system. Implement a simple form the collect the following information for the user: first name, last name, email, phone number, and an option to be added to the mailing list. The form should be able to submit this information to a server.

The server does not need to do anything with the data collected in the form. The form should have basic input validation. Lastly, the page with the form should be fully functioning, i.e. when the form is submitted there should be some kind of response to the user.

Challenge Question #2

This is a design question and requires no programming. Suppose in order to decrease the time spent on the initial creation of web applications you have been tasked with creating a project template. The template should be a fully functioning site. The goal of the template is to build the generic functionality that most web applications feature. The motivation is to allow the for development of any web application to begin with at a fixed point, as well as eliminate time spent developing the same functionality that may have been developed multiple times before.

For this challenge discuss what functionality you would build into this template. For example many web applications feature some form of user authentication, feel free to include and expand on this example in your response. How would you build the template to be to generic enough that it could be used for most web applications? What options would you include to extend your functionality? What third party software would you include and how? Please discuss the HTML/CSS/Javascript portion as well as the database.

Challenge Question #3

One typical use of a web application is to display data to the end user in a human readable format, such as a table. For this challenge you must build a web page that features a table of event information. The information this table will display is event title, topic, topic description, date, speaker, building, and room. In the attachment you will find SQL scripts to create all the necessary tables (with data) and the view for the web table you are to create.

The web page must feature the ability to bulk edit the event data. The editable fields are: title, date, speaker, building and room. The rooms available are dependent on which building is selected. The end user should be able to select one or many rows and update any number of the editable fields. The updated fields should be saved to the database.

The required work for this challenge is as follows:

- Set up and SQL database and use the provided scripts to build tables and data
- Build a web page that retrieves data from that database
- Populate a web table
- Provide a mechanism for bulk edit
- Save edited information to the database

Please provide all the code required to run the web and database portions of your web application. We want to be able to recreate the entire application locally to test/verify functionality.

Recommended, but not required, environment

- XAMPP for PHP and MySQL server
- MySQL Workbench for database development