CROSS | OVER

Congratulations on making it to this stage of the evaluation. You are obviously very talented as very few people make it to this stage. As we've stated earlier, the companies we represent receive 1000s of resumes for any given role and it is through these difficult assignments where you can differentiate yourself and be noticed. After completion of this final 'real scenario' assignment - there will be a quick technical interview on your delivery then you are ready to be hired.

The project is scoped to be simple and reasonable in size to enable you to demonstrate your enterprise - class skills. Though this is a fictitious example, this scenario is very similar to what you may encounter in your job.

Instructions

- Try to complete as much as possible within the given time frame. If you need more time, please ask for an extension. You must complete full-functionality of the application with industry-level coding style /commenting. Unfinished assignments will not be considered.
- Please note that you are expected to work on the assignment independently. Discussing assignment details with colleagues or any indication of outside help will be considered cheating.
- Please do not expect too much hand-holding as this is an evaluation assignment.
- Read the complete assignment before you start. Understand clearly what is required so that your work will be appropriate and easier.

Objective

Develop a single page blood donation management system to facilitate the patients from all around the world, find blood donors near them.

Functional Specifications:

The app will provide a bridge between the patients and the volunteer blood donors.

The index page of application would load a map. Preferably it should be navigated to visitors' location or the user can use search to navigate.

For Donors:

Donors can find their location and tap/click on it. On clicking it should open a form in popup, where the donor can add the following information:

First NameLast NameContact NumberEmail Address Blood Group

All these fields should have proper validation i.e. proper email address and a proper telephone number (+xx xxx xxxx xxx | 00xx xxx xxxx xxx).

On submitting the form a success message should be shown to user and his information along with his address, ip and geographical coordinates should be saved in database.
A unique private link should be generated and displayed to him, from where he can edit or delete his posting.

For Patients:

The map on index page should show all the posts in database as small pins at their respective coordinates. These pins should be lazy loaded, so only the pins that belong to the visible area of map should be loaded. As the user navigates the map, more pins should load accordingly.

On clicking any pin, a popup should appear displaying the donor's information. In place of email and phone number, there should be a text (click to show). When the user clicks on this text, it should replace with the respective information. (This is to avoid bots from reading donor's email address and contact information)

If any pin changes (a user made change to his post or deleted it) The change should be visible real time to other users.

Requirements

1. A single page architecture of data driven app, using MEAN stack.
2. Feel free to chose between Angular 2 or REACT as your front end framework.
3. Index page should mainly contain a map using ArcGIS
4. The postings should be real time, using sockets via socket.io
5. MongoDb NoSQL database should be used.
6. Unit tests should be written, where necessary.
7. A design document that describes
    1. System design (component interaction diagram).
    2. All the technologies, libraries and APIs used to develop the application.
    3. Any other technical details you would like to share.
8. A readme file containing:
    1. Steps to initialize and run the application.

2. Any missing requirements.

3. Any feedback you can give for improvements in assignment

9. A video (15 minutes max) with a demonstration of the working solution and an explanation of your implementation. Yes, we require you to narrate the video. You can use wink, screencast-o-matic or any screen recording tool to create the video file.

10. Source code of the application.

Failing to follow these rules will invalidate your submission and you will not be evaluated.

To be evaluated

- System Design.
- Screen Designs.
- Used technologies.
- Fulfillment of building, deploying and running your application.
- Implementing all mentioned functionalities.
- Code quality (style, documentation and performance).
- Fulfillment of unit tests.
- Demonstration Video.

Delivery / What to submit

Please, read and follow this section carefully. Any delivery that does not follow this section will score much less or simply won't be evaluated.

First of all, review Delivery Instructions (Sent to your personal mail), which describes general delivery process. Delivery for this assignment should consist of:Archive named <your_name – FSD>.zip containing the following:

- README.txt -> Contains instructions and feedback.
- Design.doc -> Contains your solution design and technologies.
- Demo.txt -> Contains link to live version on application.
- Code Folder -> Contains your solution.
- Tests Folder -> Contains all tests.
- Video folder -> Contains your video showing your working solution.

So the resulting structure of your delivery should be:

- <your_name - FSD>.zip\README.txt
- <your_name - FSD>.zip\Design.doc
- <your_name - FSD>.zip\Demo.txt
- <your_name - FSD>.zip\Code\
- <your_name - FSD>.zip\Tests\
- <your_name - FSD>.zip\Video\

ATTENTION! YOUR APPLICATION WILL BE REJECTED IF IT:

- Does not compile
- Does not contain unit tests
- Unit tests are failing

Good luck!