CODALIEN TECHNOLOGIES PVT LTD.

Internship Confirmation Assessment Test II

Ver: AC2.07.19

TIME: 7 Hrs

Instructions

1. Can use Google/Internet or other code references to get the tasks done.
2. Can **not** take help from another person.
3. All to be pushed to a Git repository with folders named after question numbers.

Section A

Q1 Time: 45 mins

A Tree is identified by the following properties:

1. Starts with a root parent node.
2. Each node is of dataType 'number' randomly generated between 0-100000
3. Each node can have 0-5 children nodes.
4. The tree will have maximum 10000 nodes.

WAP to generate this tree. Feel free to choose your own data structure format to store this tree. The steps are it will start with the parent node, then using random number add 0-5 children. Repeat for each child node until maximum 10000 nodes are reached or naturally tree comes to an end.

Then on this randomly generated tree find the node with the largest number and print its path in the format (from root node number to the highest node with all nodes printed in the path):

100 -> 33 -> 72 -> 69 -> 190

(root node is 100 highest is 190, and others are nodes in the path to it from root)

Section B

Q4 Time: 6 hrs 15 mins

Build a small application with the following specs:

Tech Stack:

DECIDE YOURSELF WHAT IS BEST! :)

Please make simple, yet finished and clean UI.

App is for monitoring the web pages. People will come and put in their web urls and then select the monitoring frequency and then in case of failure an email will be sent to those,

User Stories:

1. User will come to the application and on the first landing page will see the following:
    a. Similar to Google search page with minimalistic components, it will have a input field in the center.
    b. Next to the input field will be a frequency dropdown ranging: 10 seconds, 1 minute, 5 minutes, 10 minutes, 15 minutes, 1 hour, 4 hours, 6 hours, daily.
    c. Below input similar to like in google a button to create the monitoring.
    d. After monitoring button is clicked then the user will be asked for its email and phone number (any one is required, can add both aswell).
2. The system will monitor the URLs at the desired frequency. There could be 100s of URLs to be monitored.
3. The system will make a GET request to url, and in case 200/201 we will consider it a success, else a failure.
4. When failed the user is emailed or messaged or both about the URL failed. Email and message should have both the URL and the status code include in the message.
5. Admin should have an admin panel to see all data and manage it. Keystone is the best and fastest for the same.
6. There will a login button on the top of the page. Users can log in there.
7. When the login button is clicked the user will be asked for an email or phone number, then on next button an OTP will be sent to email or phone whatever is used as username and on successful OTP the user is logged in.
8. In the User page show, all URLs user is monitoring with delete button to delete it and update monitoring frequency button to update frequency.
9. There should be a logout button in the header when the user is logged in.