

WEB DEVELOPER ASSESSMENT TASK

URL Shortener Application

Develop a URL shortening web Application with Frontend and backend.

TASK DETAILS:

1. What is URL shortening?

URL shortening is a technique on the World Wide Web in which a Uniform Resource Locator may be made substantially shorter and still direct to the required page. This is achieved by using a redirect which links to the web page that has a long URL

2. How do I design the URL shortener?

- Design a complete authentication system of Login, Registration, Forgot Password.
- The following are user details should be collected and stored in the Database:
 - Username should be unique(email id).
 - First name and last name.
 - The password should be encrypted.
- The two-step activation workflow is an implementation of a two-step registration. It can be implemented by the process flow given below.
 - When a user signs up, an inactive account is created, and an email is sent containing an activation link which must be clicked to make the account active.
- The activated users are only able to login with the URL Shortener application.
 - If a user not registered should not be allowed to login and a valid message should be displayed to the user.
- The following are the process flows in forgot password:
 - The user clicks on a forgot password link that redirects the user to forgot my password page.
 - On the page verify and validate the user's email address then allow the user to click the forgot password button.
 - Once the user email address is valid, then the system sends an email containing the randomly generated token encoded URL for the new password page and token URL is stored in a database for temporary use.
 - The user clicks on the URL to reset his/her password.
 - Once after the password is created, then the randomly generated token URL should be deactivated in the database and a new password should be updated to the database for the corresponding user's email address.
 - After the successful creation of the new password, a valid message should be displayed to the user.

- Design a dashboard to display the count for the total number of URLs created per day and within a month.
- Design another page or modal to create a URL shortener.
- Design another page with a table to show all the created URLs

3. How do I process the output?

- A long URL is given to make a short URL.
- When a short URL is hit on the browser, it should redirect to the original page.
- The system should display the total number of counts for every short URL that is clicked.
- The system should use **alert** in the required places to display the messages.

4. Any specifications on the design?

Preferred:

- Front-end: HTML, CSS/Bootstrap, JavaScript **OR** Reactjs
- Back-end: **Nodejs**

Requirements:

- Use HTML, CSS/Bootstrap, Javascript **OR** React and Nodejs to develop the application.
- Use fonts/icons if it's required in the design.
- Use of various charts is required in the design.

5. How do I submit my work?

Preferred:

- Push all your front end work files to your Github(<https://github.com/>) and name your repository as **urlshortener-frontend**.
- Push all your back end work files to your Github(<https://github.com/>) and name your repository as **urlshortener-backend**.
- Deploy your back-end application on Heroku.
- Deploy your front-end application on Netlify.
- In a text file add all Netlify URL, Heroku URL, Github repository URL, and last committed hash ID.
- URL format has to be followed for both Github and Netlify.
 - <https://github.com/username/urlshotener-frontend>
 - <https://urlshortener-backend.netlify.app>
- Deploy your React app in Netlify (<https://www.netlify.com>).

6. Any basic hints and reference sites to solve?

UI references:

- <https://getbootstrap.com/docs/4.4/getting-started/introduction/>
- <https://www.chartjs.org/>
- <https://jwt.io/introduction/>
- <https://expressjs.com/>

Working Example websites:

- <http://bit.ly/>
- <https://tinyurl.com/>

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