Google Summer of Code
2021

Project Proposal

Sachin som

Project Name:

DNSTool Web Application

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Project Introduction:

As mentioned by SCoRelab, DNSTool-Frontend is the main access portal of the DNSTool which is designed to monitor the given set of internet resources like domains, IP, SOA, etc. Frontend allows users to upload their scanning seed list(s) and control the scans as well as schedule them. This project is to design a responsible and user-friendly single-page application as the frontend (dashboard).

DNSTool is composed of 3 main components which are,

- DNSTool-web-application (using React.js and Redux)
- DNS-Middleware/API (using Python, Flask, C++, Ray, Docker, Kubernetes)
- DNS-command-line-Tool (using C/C++, Linux, protobuf ,gRpc, Docker)

For GSoC'21, scorelab has published milestones separately for the above-mentioned components. From them, I would like to contribute to the DNSTool-web-application if given the opportunity.

Project Goals:

- Designing UI for DNSTool-web-application.
- Creating a single page application for DNSTool-web-application.
- Taking care of frontend responsiveness.
- Managing state using redux, redux toolkit and redux saga.
- Improving web preformance.
- Connecting all react components using react-router.

Project Implementation:

1. **Authentication of users**
    a. As this project needs to be implemented from scratch, the idea is to provide authentication for users using different strategies like email, github, facebook and google.
    b. Currently the main purpose of this, will only provide user information to the backend, as this project only deals with the frontend.
    c. Later on this could be integrated with the backend part of this project.
2. **Creating A Profile page for every user**
    a. The purpose of this is to create a user friendly profile page for the user.
    b. Here in this profile page, the user can view his/her details, can update his/her name, email or password and can delete the account.
3. **Creating user dashboard**
    a. The main task of this project is to create the user dashboard.
    b. User dashboard will be designed to monitor the given set of internet details like domains, IP, SOA etc.
    c. User dashboard will also contain the scan section, where users can upload their scanning seed list and control the scans as well as schedule them.
4. **Improving performance of web app**
    a. Working on different aspects of web performance like lazy loading, async\defer, prefetch-preconnect and various profiting techniques.
    b. Improving light house performance.

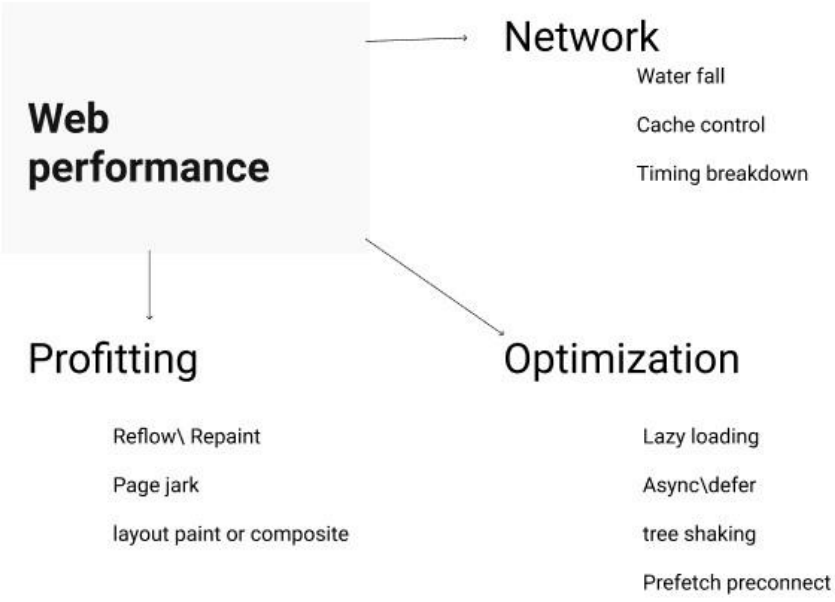

Figure :- Different Web performance techniques

5. **Working on react router:**
    a. After designing and developing react components for DNSTool UI, the next task will be to connect all the react components using react-router and react-router-dom.
6. **Working on state management:**
    a. For managing all the states redux with redux saga and redux toolkit will be used.

Project Timeline:

Week	Time Period	Task
Community Bounding	May 17 to June 7	– Communicate with the mentors and know more about the project. – Getting each and every insight of the project to consolidate the whole development process.
Week 1 - Week2	June 7 to June 20	– Continue to refine the plans for the project's UI. – Complete the required Changes in UI based on mentor's feedback. – Writing My first blog for sharing experience regarding community bonding and GSOC's first week. – Finalizing UI for project's frontend.
Week 3 to Week 5	June 21 to July 11	– Started developing project UI. – Creating react components for sign up and sign in page. – Developing react component for profile page. Start Developing User Dashboards. – Writing a medium blog for sharing this phase.
First Evaluation (12 July to 16 July)		
Week 6 to Week 7	July 12 to july 25	– submitting Phase 1 evaluations. – Getting feedback regarding the project flow and doing the required changes. – Complete all the remaining work from week 1 to week 5. – Combining all the react components using react-router. – Writing a medium blog for this phase.
Week 7 to Week 9	July 26 to August 8	– Improving the web performance. – Enabling lazy loading for all react components. – Working on optimization, network and profiting to improve web performance.

		– Writing a medium blog for sharing this phase.
Week 10	August 9 to August 15	– Getting feedback regarding the project flow and doing the required changes. – Writing ReadMe for providing setup details and project introduction. – Cleaning the code, clearing console errors or warnings. – Writing a blog for week 10.
Final Week Submitting final work and final evaluation.		

Personal Details

- ## Basic Details
  - **Name: -** Sachin Som
  - **Nationality: -** Indian
  - **Gender: -** Male
  - **Time Zone: -** India(UTC +5.30)
- ## Educational Details
  - **University: -** Arya college of Engineering & I.T.
  - **Degree: -** Bachelor of Technology
  - **Major: -** Electronics and Communication
  - **SGPA: -** 9.4 (current)
  - **Graduation year: -** 2022
- ## Contact Details
  - **Email Address: -** sachinsom507@gmail.com
  - **Phone Number: -** +91 8824634027
  - **Gitter handle: -** sachinsom93
- ## Social Media
  - **GitHub: -** sachinsom93
  - **LinkedIn: -** sachinsom507
  - **Medium**: - sachinsom507

Questions:

1. **Are you a SCoRe contributor/ Have you contributed to SCoRe before?**

Yes, I am a Contributor to SCoRe lab projects. I have been contributing to SCoRe since January 2021. I have majorly contributed to OpenMF and Webiu Project. following are my contributions: -

Pull Requests:

[Merged] Added some APIs to listOfAPIs.md and Readme.md #83

(https://www.github.com/scorelab/OpenMF/pull/83)

[Merged] Refactored profile and getUser route #81

(https://www.github.com/scorelab/OpenMF/pull/81)

[Merged] Implemented frontend validation and toggle password checkbox #77

(https://www.github.com/scorelab/OpenMF/pull/77)

[Merged] [Backend] Created route for admin to add, update role, delete and view users route #76

(https://www.github.com/scorelab/OpenMF/pull/76)

[Merged] Created Unauthorized Handler #74

(https://www.github.com/scorelab/OpenMF/pull/74)

[Merged] fix: delete route #68

(https://www.github.com/scorelab/OpenMF/pull/68)

[Merged] Updated Readme for flask server #66

(https://github.com/scorelab/OpenMF/pull/66)

[Open] [Frontend] validated email before sending request to server #143

(https://www.github.com/scorelab/OpenMF/pull/143)

[Open] [Frontend] Implemented googleAuth and FaceBookAuth in frontend #135

(https://www.github.com/scorelab/OpenMF/pull/135)

[Open] [Frontend] Implemented managementRoute and extractorRoute #124

(https://www.github.com/scorelab/OpenMF/pull/124)

[Open] [Backend]Created 404 response handler #123

(https://www.github.com/scorelab/OpenMF/pull/123)

[Open] [Backend] Created update routes for name and password #107

(https://www.github.com/scorelab/OpenMF/pull/107)

[Open] Implemented a route for updating email address #99

(https://www.github.com/scorelab/OpenMF/pull/99)

[Open] [React] Created a frontend to create register admins #86

(https://www.github.com/scorelab/OpenMF/pull/86)

[Open] Added Gatsby-plugin-font awesome-CSS in package.json #50

(https://www.github.com/scorelab/Webiu/pull/50)

[Open] Added Null Check to Components #43

(https://www.github.com/scorelab/Webiu/pull/43)

[Open] Issue24 add logo #33

(https://www.github.com/scorelab/Webiu/pull/33)

[Open] Added A Loader component #31

(https://www.github.com/scorelab/Webiu/pull/31)

Issues:

[Closed] [Backend] Profile route should be flexible for admin and user both roles #80

(https://github.com/scorelab/OpenMF/issues/80)

[Closed] [Frontend] Add toggle password button in login screen #75

(https://github.com/scorelab/OpenMF/issues/75)

[Closed] [Backend] Unauthorized Handler is not defined for login required routes #73

(https://github.com/scorelab/OpenMF/issues/73)

[Closed] Delete route needs to change #67

(https://github.com/scorelab/OpenMF/issues/67)

[Closed] [Backend] Create route for admin to add users of different roles #61

(https://github.com/scorelab/OpenMF/issues/61)

[Closed] [frontend]: Creating a frontend for profile page #60

(https://github.com/scorelab/OpenMF/issues/60)

[Open] Create Dockerfiles for openMF modules #148

(https://github.com/scorelab/OpenMF/issues/148)

[Open] [Frontend] Need to validate email before sending request to server #142

(https://github.com/scorelab/OpenMF/issues/142)

[Open] [Frontend] Add password validation in frontend #139

(https://github.com/scorelab/OpenMF/issues/139)

[Open] Enable Sign In options with google and other options. #132

(https://github.com/scorelab/OpenMF/issues/132)

[Open] [Frontend] Enable lazy loading in React #130

(https://github.com/scorelab/OpenMF/issues/130)

[Open] [Frontend] create management and extractor specific route #122

(https://github.com/scorelab/OpenMF/issues/122)

[Open] [Backend] Create a 404 response from server #113

(https://github.com/scorelab/OpenMF/issues/113)

[Open] [Backend] Create a controller folder to put all route logics #108

(https://github.com/scorelab/OpenMF/issues/108)

[Open] [Backend] Implement route for updating password and name #100

(https://github.com/scorelab/OpenMF/issues/100)

[Open] [Backend] Update email route is missing #98

(https://github.com/scorelab/OpenMF/issues/98)

[Open] [Frontend] Register screen for admin #78

(https://github.com/scorelab/OpenMF/issues/78)

2. How can we reach you (e.g.: email) if we have questions about your application?

Email Address: - sachinsom507@gmail.com

Phone Number: - +91 8824634027

Gitter Handle: - sachinsom93

3. What is your GitHub username(s):

Username: - sachinsom93

Project Specific Questions

4. Which SCoRe GSoC project are you applying for (please submit separate applications for each project):

- I am applying for the DNSTool **Web Application.**

5. What do you plan to accomplish over this summer for this project? (Please tell us

a. What project you want to work on,

b. How you will approach that project portion (with your milestones))

a. Project Introduction: -

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b. Milestones: -

1. Designing UI for DNSTool-web-application.
2. Creating a single page application for DNSTool-web-application.
3. Managing state using redux, redux toolkit and redux saga.
4. Taking care of responsiveness.
5. Improving web preformance.
6. Connecting all react components using react-router.

6. If you have your own project to propose, please describe it here:

- NA

7. Projects related details. (Have you tried that project you selected from SCoRe project list? What problems, if any, were presented? What prevented you from getting the entire system up and running?)

- NA

8. List down any plans you have during this summer(over the time period of GSoC, such as classes, job, vacation plans, thesis, etc.)

- I don't have any specific plans for this summer, so I can properly work on this project. As I am enrolled in a B.Tech degree, I would have my end term exams from around the end of June. So, I would be a bit inactive during that time span.

9. Education:

- What year are you in school?
  - Currently,I am a 3rd year B.Tech undergraduate.
- What programming courses have you taken?

  - Training of Full Stack (MERN) course at grass solutions Jaipur.
  - Data structure and algorithms using Python (NPTEL course)
  - Complete TypeScript (Udemy course)
  - Data structure and algorithms self-Paced course(GeeksForGeeks)
  - Data Science using python (INeuron)
  - Statistics for machine learning(INeuron)
  - Microprocessors (NPTEL course)

- What is your major?
  - Electronics and communication(Batch 2022)
- Have you done group projects (programming or otherwise)?

  - **AVEO** : -
    I. AVEO is an Angular web application which consumes the YouTube v3 Data API to create a minimal user-interface where YouTube videos can be viewed.
    II. Tech Stack: - Angular at frontend, Node js for backend, MONGODB and YouTube V3 data API
    III. I worked on the authentication part and at its frontend part.
    IV. Created some backend public and private APIs.
  - **WebMeet** : -
    i. WebMeet is a web application, on which a user can create an account and then he can create separate rooms for video conferencing. WebMeet works on WebRTC that enables the user to communicate without any audio buffering.
    ii. Tech Stack: - Vanilla Js, Node js, socket.io for data communication between frontend and backend and webRTC for enabling real time video conferencing.
    iii. This project stood first at the Game of codes organized by Code Community of IIIT Una.
  - **SocialBud:** -
    iv. A social media web app where users can create posts, delete posts, like or dislike posts, follow or unfollow each other and many more.

v. Tech Stack: - React at frontend, Material UI for styling purpose, Node js for creating public and private APIs, context API for state management and MongoDB using mongoose.

- What was your primary contribution to/role in the group?
    - My primary role in the project was to work on the architecture of backend API endpoints, creating complex APIs according to the need of the project. I have also worked for the frontend portion of the projects. I am proficient with Node js, Flask, Django, frontend frameworks like Angular and React.

10. Do you have work experience in programming? Tell us about it.

- None

11. Do you have previous open source experience? Briefly describe what you have done ?

Yes, I am an Open Source Enthusiasts who worked with a couple of open source organisations and open source projects.

Following are my some of my open source contributions as an open source enthusiasts: -

1. Completed HacktoberFest 2020.
2. I have been selected as the top contributor in Game of Source (Game of Source was an open source contribution contest organised by GeeksForGeeks student partners).
3. Beside these I have contributed to many open Source projects.

12. Tell me one interesting fact about yourself.

- I love to learn new things.

References:

1. Scorelab official Website
2. DNSTool-web-application GitHub link

End of Proposal