

Sugar Labs Social

Google Summer of Code 2018 Project Proposal

About You

What is your name?

Samar Singh Karnawat

What is your email address?

samarkarnawat@gmail.com

What is your Sugar Labs wiki username?

Samarsk

What is your IRC nickname on irc.freenode.net?

samarsk

What is your first language? (We have mentors who speak multiple languages and can match you with one of them if you'd prefer.)

My first language is Hindi but I'm equally comfortable in English as well.

Where are you located, and what hours (UTC) do you tend to work? (We also try to match mentors by general time zone if possible.)

Location: Jaipur, Rajasthan, India

Timezone: India (UTC+05:30)

Typical Working Hours: UTC 04:30 to UTC 13:30 [IST 10:00 to IST 19:00]

Have you participated in an open-source project before? If so, please send us URLs to your profile pages for those projects, or some other demonstration of the work that you have done in open-source. If not, why do you want to work on an open-source project this summer?

I am an active member of a campus group [SDSLabs](#) and have gained a considerable amount of work experience there. I am new to the open source community. I have not worked on any open source project yet but I have been observing the community for quite some time now and feel that working on an open source project is the best case of a win-win situation for a developer as the contributor gets to learn a lot and at the same time significant contributions are made to the community. The community and the contributor, both grow simultaneously. I wish to work on an open-source project this summer for the same reason, to contribute to a project and at the same time learn from a community of people from around the world. The idea of working on a project with worldwide impact really excites me.

About your project

We are looking for projects that will enhance the Sugar Learning Platform. Please consider how your project will have impact on children learning.

What is the name of your project?

Sugar Labs Social

Describe your project in 10-20 sentences. What are you making? Who are you making it for, and why do they need it? What technologies (programming languages, etc.) will you be using?

Sugar Labs Social is a website project aimed at making communication between teachers, parents and developers around Sugar Labs seamless. It will provide a platform where people can discuss projects, propose new ideas, ask questions, search for existing issues, share their experiences in a blog and chat with anyone.

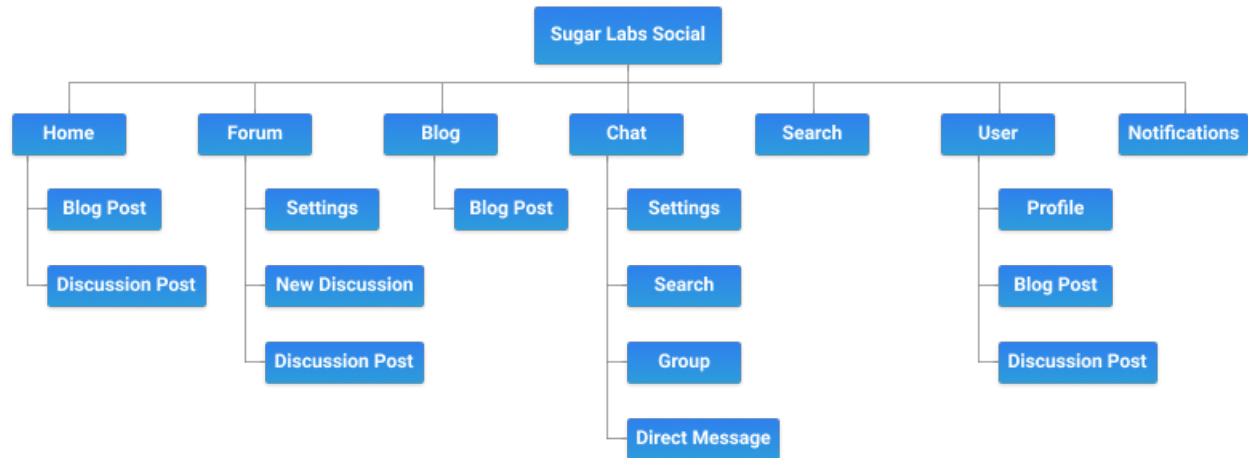
A social help activity was developed during GSoC 2014. It was based on integration of the Discourse platform. The project did not turn out to be as successful as expected. However, Sugar Labs Social won't face the same fate if a more user centred design is used. I have designed the interface of Sugar Labs Social after an extensive research possible at my end to provide the best **User Experience**. The UI is simple enough for everyone to use, focuses more on functionality and is very easy to adapt to. People will come to the portal for the ease with which their problems can be solved and the convenience of connecting with the community.

The aim is to concentrate all the social activities related to Sugar Labs on a single platform. Since the platform will provide every feature required, anyone, whether she is a teacher, a parent or a developer would not need to use any other service for communication and help. After the website goes live, we can use **Google Analytics** to understand how people use Sugar Labs Social and use those patterns and behaviours to improve the website and increase engagement over time. A feedback feature will also be there to take feedback and suggestions from users.

Frontend Architecture

The frontend of the website is to be developed using **HTML, CSS** and **JS**. The frameworks to be used are **React.js** and **Redux**. I propose using React as a frontend framework because it provides a component based structure and makes it possible to reuse components which in turn reduces the complexity and redundancy of the code. Therefore, the website will have a consistent look and feel. Due focus will be paid in making the website responsive. Also, because of the great community React has, it will be easy to develop and maintain the codebase in future. **Webpack** will be used for bundling. The following flowchart shows the upper two levels of the component structure.

Component Structure



The website consists of three major sections, namely Home, Forum and Blog. Other major features are Chat, Search, Notifications and User Profile as shown in the component structure above. All these features are accessible through navigation bar and Chat section is omnipresent.

Design mockups of some screens

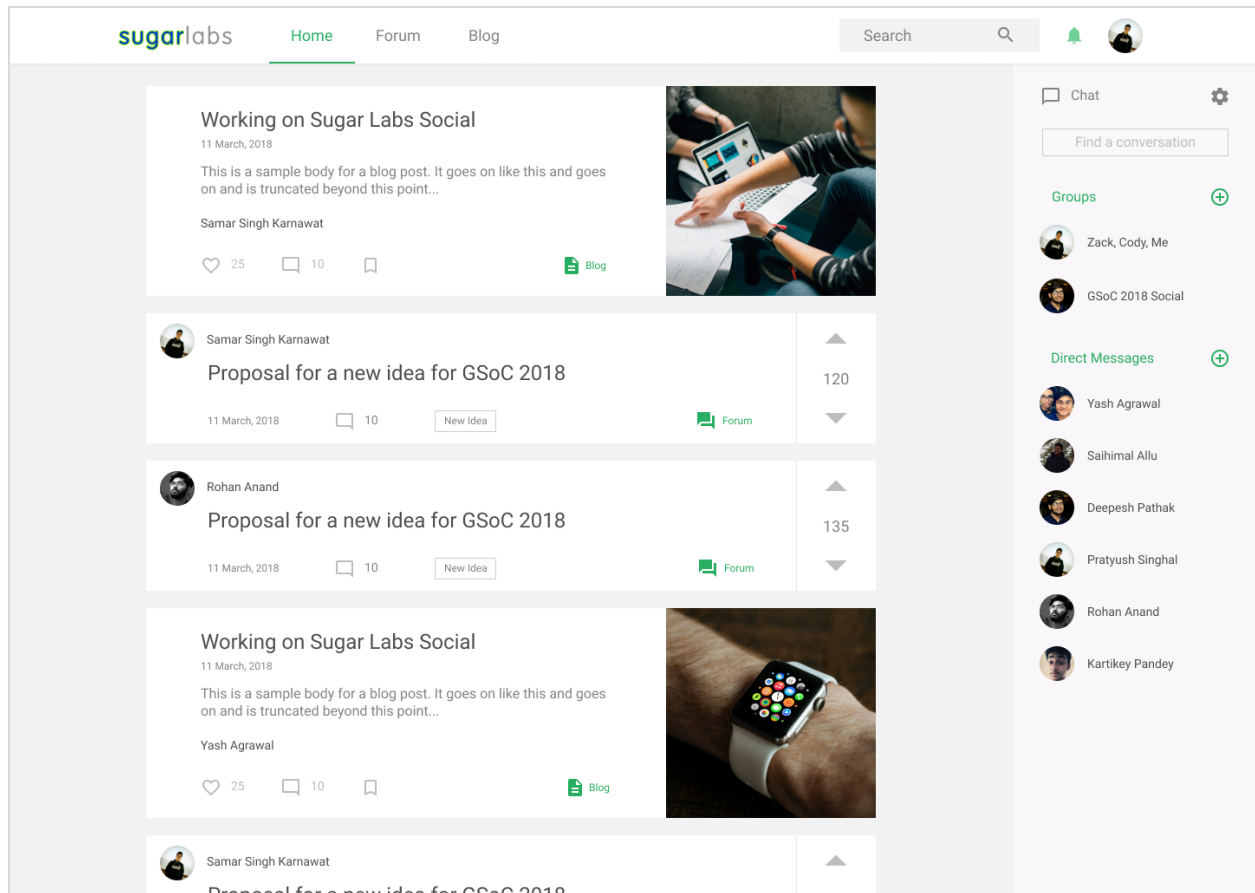
The working **prototype** for the designs can be found here-

[Prototype for Sugar Labs Social](#)

Following are some screens I have designed keeping in mind the best practices for UI and UX.

Home

- This section comprises of forum and blog posts from people that a user follows.
- Each post contains a flag corresponding to whether it is a blog or forum post.



Forum

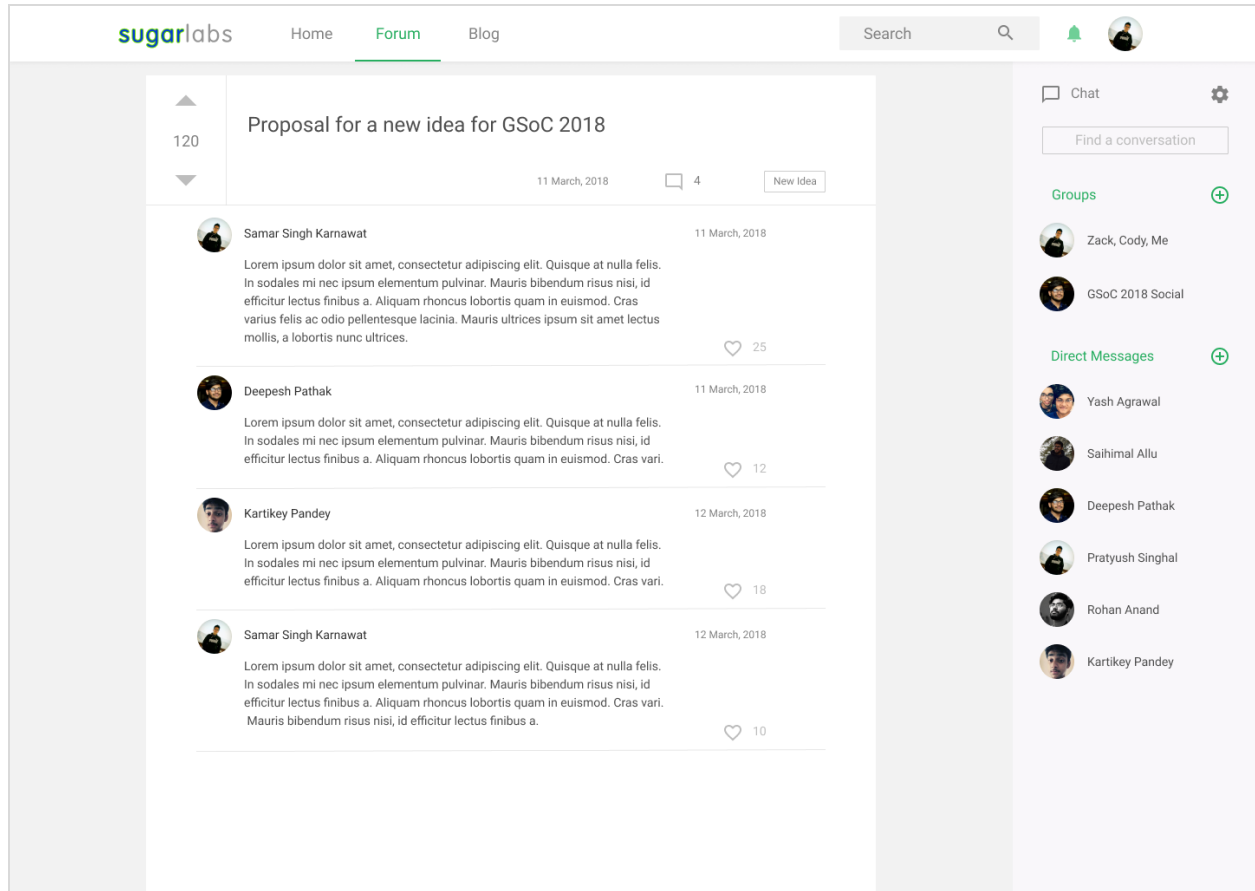
- Forum contains all the discussions sorted by latest by default.
- A settings card is present at the top that allows the user to
 - sort the discussions by popularity and
 - filter them by **tags**
- Users can also follow tags.

The screenshot displays the Sugar Labs Forum web application. The top navigation bar includes the 'sugarlabs' logo, links for 'Home', 'Forum' (which is the active page), and 'Blog'. A search bar is located on the right side of the header. Below the navigation bar, there is a settings card with a gear icon, allowing users to sort discussions by 'Latest' (selected) or 'Popular', and filter by 'New Idea'. The main content area lists several discussions, each with a user profile picture, name, title, date, comment count, and a 'New Idea' button. The discussions are sorted by date, with the most recent at the top. The sidebar on the right contains a 'Chat' section with a search bar and a list of 'Groups' and 'Direct Messages'.

User	Title	Date	Comments	Score
Samar Singh Karnawat	Proposal for a new idea for GSoC 2018	11 March, 2018	10	120
Saihimal Allu	Sugarizer School Box [Proposal]	11 March, 2018	10	76
Samar Singh Karnawat	Proposal for a new idea for GSoC 2018	11 March, 2018	10	143
Kartikey Pandey	Sugar Labs Social [Proposal]	11 March, 2018	10	89
Deepesh Pathak	Proposal for a new idea for GSoC 2018			122

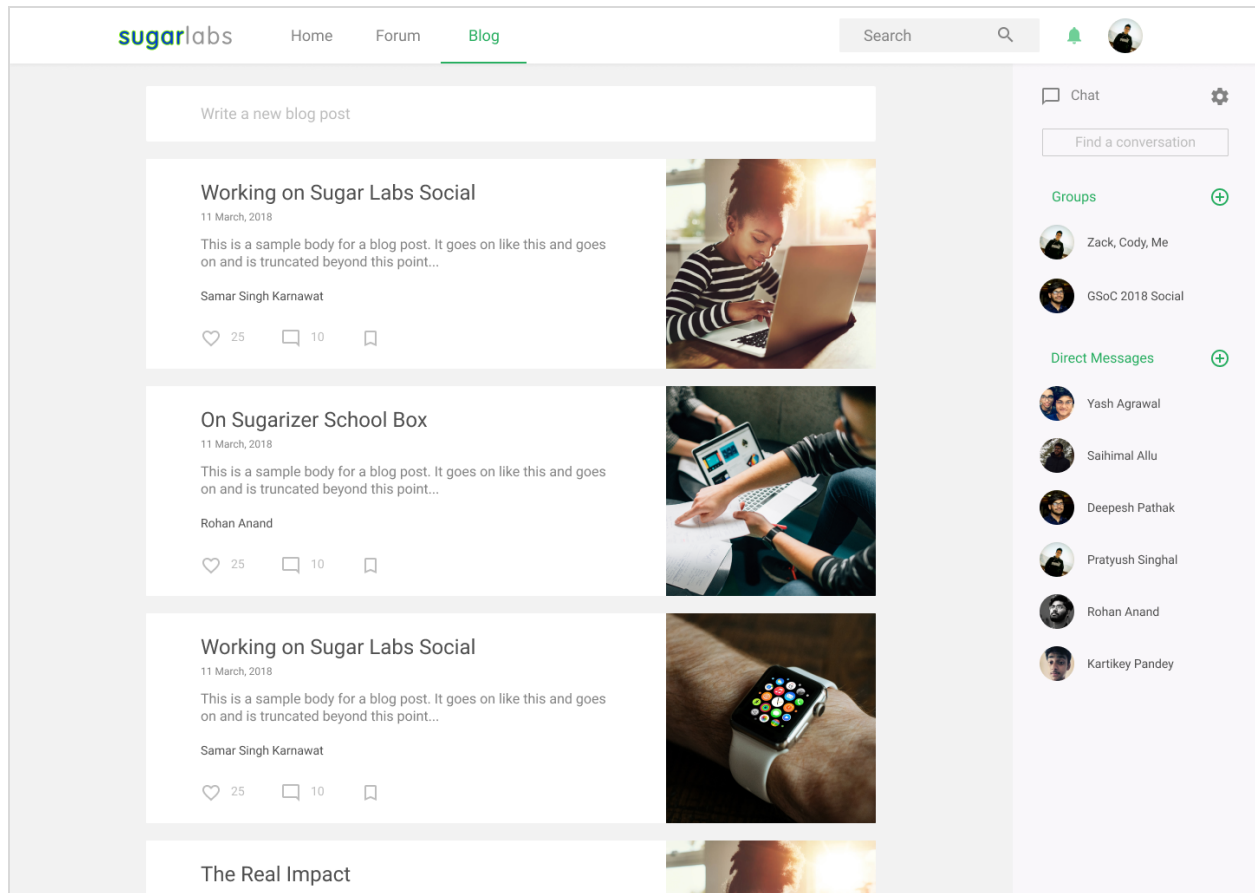
Forum Post

- A forum post contains tags and users can
 - Upvote or downvote
 - Comment
 - Like comments



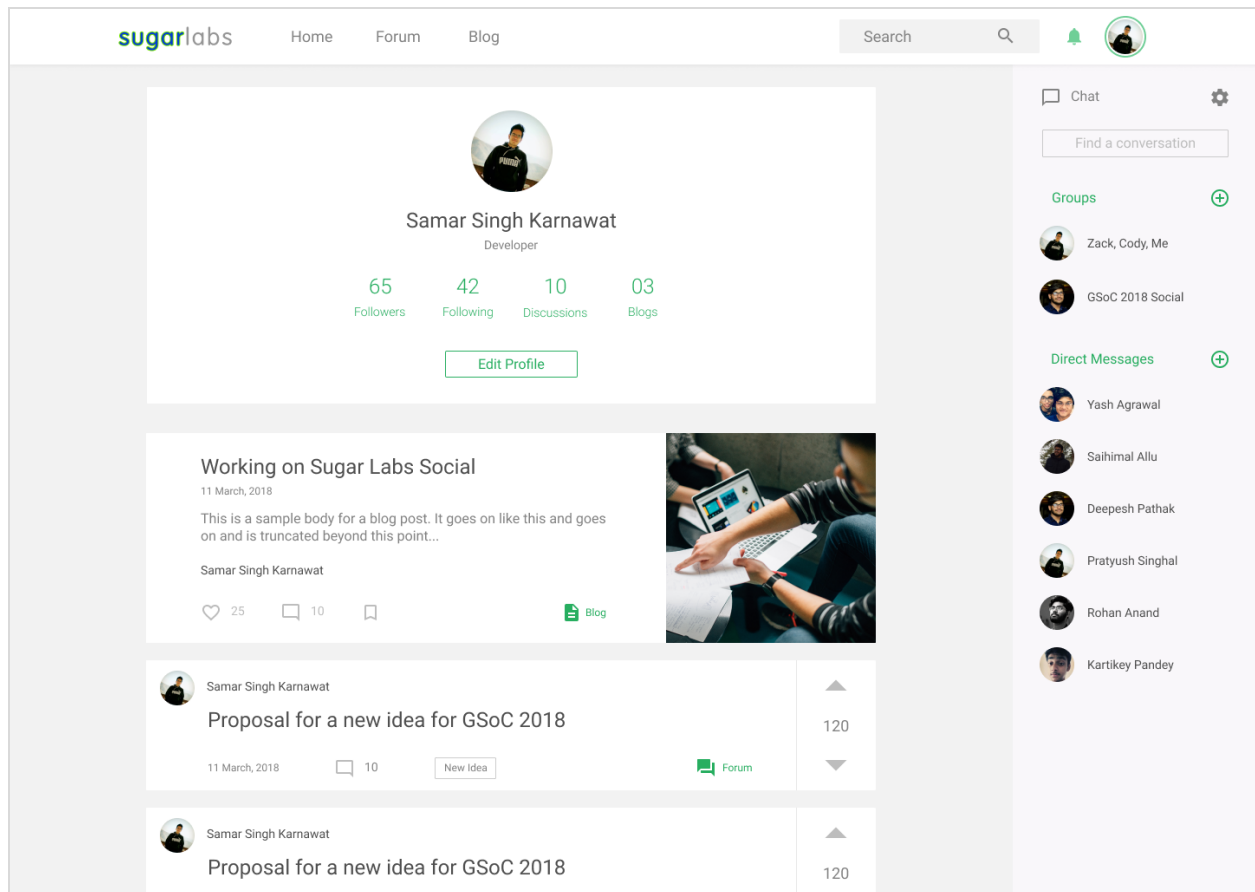
Blog

- The section contains blogs where users can
 - Like the blog
 - Comment on it
 - Add the blog to bookmarks



User

- A user can follow people and tags.
- A profile page shows the basic information and the blogs and discussions posted by the user.



- The chat section provides the following features
 - Group chats
 - Direct messages
 - Search to find conversations

Backend Architecture

The backend will be developed in **Django** with the API build using **Django REST Framework** and **PostgreSQL** will be used for database management. PostgreSQL is a better choice over a NoSQL based system like MongoDB for Sugar Labs Social because of the relationships data will have. Therefore, a relational DBMS is a better choice here. Also when used with MongoDB, Django has to leave its relational components which are required in this case.

Three apps will be created for the features we want to implement in the root app. One for blog and forum, second for chat and third for user. **Django channels** will be used for chat implementation. **Django OAuth Toolkit** will be used for user authentication at Login/Signup. **Elasticsearch** will be used to implement the search feature to find blog posts, forum posts and users. **Django Webpack Loader** is needed to use the created bundles in Django. RSS feeds will be created using **Syndication Feed Framework**. Moreover, **caching** will be used to make queries faster.

After some research, I found out that it would be a better option to create our own forum instead of using third party services like Discourse or Disqus. Discourse had been used in Sugar Social Help and didn't work out well. We at SDS Labs, a campus group which I am a member of, also tried Discourse but eventually made our own platform and have been using it since then. I was involved in that project. I would prefer developing our forum which will be easy to adapt to and consistent with the complete website. So, one of the tasks will be to deprecate the previous Sugar Social Help.

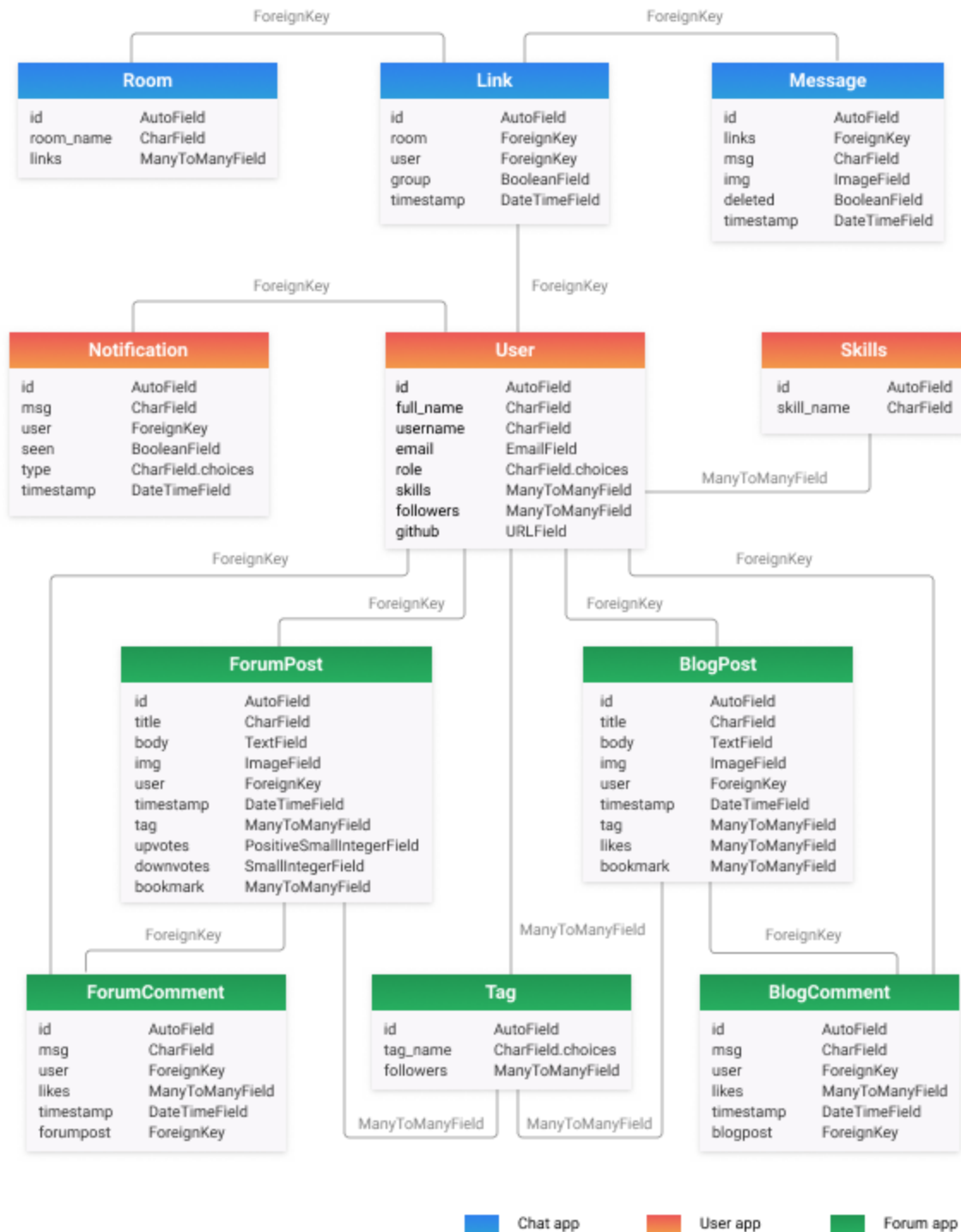
Major endpoints that will be required for the project are:

- **User(/user)**
 - **getById(/:id)**: a GET request will retrieve a user's details by Id
 - **add(/)**: a PUT request will be used to register a user
 - **update(/:id)**: a PATCH request will update the profile whose Id is sent with the request data.
 - **login(/login)**: a POST request will be used to authenticate a user.
 - **logout(/logout)**: a GET request will be user to logout the logged in user.

- **Blog(/blog)**
 - **get(/):** a GET request retrieves all recent blogs implementing lazy loading with a limit of 20 blogs at a time.
 - **getById(/:id):** a GET request will retrieve a blog by Id
 - **add(/):** a PUT request will be used to post a blog
 - **update(/:id):** a PATCH request will update the blog content whose Id is sent with the request data.
 - **likeById(/:id/like):** a GET request will add a like to a blog by the logged in user
 - **commentById(/:id/comment):** a PUT request will be used to add a comment to a blog using the Blog Id as foreign key.

- **Forum(/forum)**
 - **get(/):** a GET request retrieves all recent posts implementing lazy loading with a limit of 20 posts at a time.
 - **getById(/:id):** a GET request will retrieve a post by Id
 - **add(/):** a PUT request will be used to post a discussion
 - **update(/:id):** a PATCH request will update the content of discussion whose Id is sent with the request data.
 - **upvoteById(/:id/upvote):** a GET request will add a upvote to a discussion by the logged in user
 - **downvoteById(/:id/downvote):** a GET request will add a downvote to a discussion by the logged in user
 - **commentById(/:id/comment):** a PUT request will be used to add a comment to a post using the post Id as foreign key.

Database Structure



[Link](#) to high resolution image.

What is the timeline for development of your project? The Summer of Code work period is from mid-May to mid-August; tell us what you will be working on each week. (As the summer goes on, you and your mentor will adjust your schedule, but it's good to have a plan at the beginning so you have an idea of where you're headed.) Note that you should probably plan to have something "working and 90% done" by the midterm evaluation (end of June); the last steps always take longer than you think, and we will consider canceling projects which are not mostly working by then.

April 23 - May 13 (Community Bonding Period)	● Finalise UI/UX of the website through discussions with the community and come to a consensus on design decisions. ● Get to know the community better.
May 14 - May 20	● Write models and views for User app. ● Complete Login/Signup service with OAuth.
May 21 - May 27	● Write models and views for Forum app. ● Write corresponding serializers for User and Forum app. ● Complete tests and documentation.
May 28 - June 8	● Start with basic react components required for User Profile page. ● Write Redux reducers and actions for state management of a user. ● Write server utilities interacting with the Django User App.
June 8 - June 14	● Following the same process outline used for User Profile Page, work on

	Forum frontend. • Several components such as NavBar and Forums card can be reused here. • Prepare for Phase I evaluation.
Phase I Evaluation	
June 15 - June 24	• Work on models and views of Chat app • Implement websockets using Django channels. • Complete Chat app with tests and documentation.
June 25 - July 1	• Create React components, server utilities, reducers and actions for the Chat app. • Integrate Chat components with all the other pages.
July 2 - July 12	• On similar lines, complete Blog and Home frontend. • Provide controlled react forms for blog and forum posts. • Prepare for Phase II evaluation.
Phase II Evaluation	
July 13 - July 22	• Integrate ElasticSearch for the Search feature. • Implement Notifications feature, modifying User model including last login timestamp to check for new notifications.

July 23 - July 29	• Add end to end tests including testing user interactions with the website.
July 30 - August 5	• Take feedback from the community. • Wrap up code by adding remaining documentation to help new contributors.
August 6 - August 14	• Submit the code for final evaluation. • Discuss future prospects with mentors.
Final Evaluation	

Time Commitment

Other than this project, I have no other commitments/vacations planned for the summers. Also, I do not have any internships this summer. I plan to focus solely on this project.

Convince us, in 5-15 sentences, that you will be able to successfully complete your project in the timeline you have described. This is usually where people describe their past experiences, credentials, prior projects, schoolwork, and that sort of thing, but be creative. Link to prior work or other resources as relevant.

I am a second year undergraduate student at Indian Institute of Technology Roorkee, India. I am a member of [SDSLabs](#), a technical group of our campus, where I have worked in teams on various projects and also mentored junior undergrads for the same and developed many applications and have maintained some old ones. I started out as a UI/UX designer. My interest in coding grew over the time and I have gained quite some experience in design and development both. The technologies to be used in this project align with my skills and interests.

Following are few of the projects I have worked upon:

Hedwig

- It is an integrable customizable central chat system for SDS Labs' intranet applications.

- Server Side - Node.js express server using socket.io for realtime communication.
- Client Side - Bundler using webpack and written using **React.js** and **Redux**.
- I am working on the **User Interface (UI)** and **frontend** of Hedwig, the project is currently in progress.

Kofuku

- It is a no dues intranet application for the students of IIT Roorkee which has made the process of managing no dues certificates easier.
- Server Side - **Django with REST framework using PostgreSQL**
- Client Side - HTML/CSS/JS
- I worked on creating the **backend** for this project.

Backdoor

- [Backdoor](#) is a CTF (Capture The Flag) style competition platform for computer security enthusiasts worldwide.
- Server Side - PHP using MySQL
- Client Side - **HTML/CSS/JS with JQuery**
- I have developed the **business logic for the frontend** in this project.

Cerebro

- It is a competition platform for machine learning enthusiasts, currently under testing.
- I worked on the **User Interface and Experience (UI/UX) design** of this application.
- You can find some of the screens I designed [here](#).

You and the community

If your project is successfully completed, what will its impact be on the Sugar Labs community? Give 3 answers, each 1-3 paragraphs in length. The first one should be yours. The other two should be answers from members of the Sugar Labs community, at least one of whom should be a Sugar Labs GSoC mentor. Provide email contact information for non-GSoC mentors.

After completion, Sugar Labs Social will make communication throughout the community very convenient. The discussions that take place on different platforms will congregate at one place. All the information, that is distributed right now, will be present at a single destination. All this information including blogs will in turn make it easier for new members to know the community better and understand the common problems faced. New contributors will be able to identify the problems that matter more. Since all the social activity will be concentrated to this platform, the online presence of members on the portal will increase and problems will be solved faster. Forum, Blog and Chat will make it easier to seek help and share experiences.

When developers see the impact of the softwares they work on, they will feel more connected to the purpose of Sugar Labs. The increased motivation and knowledge about the effects of their projects will result in a greater quality of work and in turn better softwares for children.

Samson Goddy (samsongoddy@gmail.com): The Sugar Labs Social is a project that will really help the community if implemented. The aim is to close the gap of communication between community members. A central place where Sugar Labs learning tools can be accessible, lesson plans shared around Sugar Desktop.

Pericherla Seetarama Raju (psramaraju@gmail.com): The project will provide a dedicated communication platform for teachers, parents, etc. to interact and help each other out. The latest happenings around Sugar Labs such as new projects, new activities, etc. can be reached to the whole community in a much faster way through this project. The discussion forum will increase the interactions among the users and the blog posts will allow users to share their knowledge with the world. These important features help improve the outreach of the community and further expand it.

What will you do if you get stuck on your project and your mentor isn't around?

If I get stuck at some point and my mentor isn't around, I will try to lookup for the solution on the internet. Take a break, work on some other task and get back to the problem with a fresh mind. If that doesn't help, I would seek help on IRC or mailing list or ask my friends.

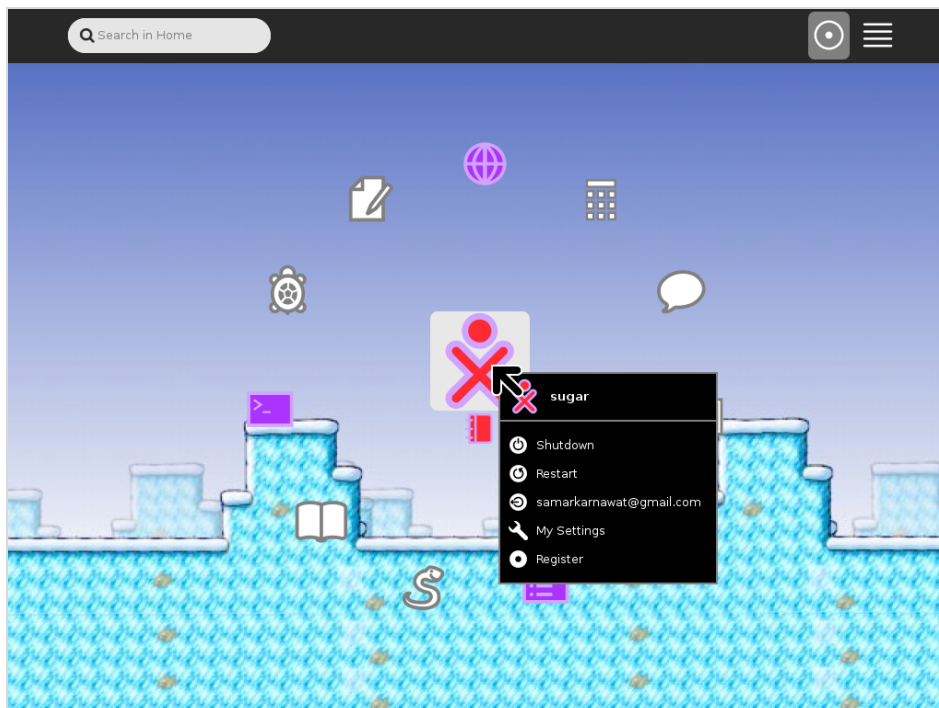
How do you propose you will be keeping the community informed of your progress and any problems or questions you might have over the course of the project?

I shall write a report in the form of a monthly blog and provide weekly updates to my mentor on my progress. When seeking consensus on a decision or when I have problems or questions, I shall use IRC or mailing list.

Miscellaneous

We want to make sure that you can set up a [development environment](#) before the summer starts. Please do the following task:

Send us a link to a screenshot of your Sugar development environment with the following modification: when you hover over the XO-person icon in the middle of the Home view, the drop-down text should have your email in place of "logout".



Describe a great learning experience you had as a child.

My first experience of solving a real life problem was when I was in VI standard. I participated in a competition along with some of my seniors from school. The problem statement was to design a parking system which takes up minimum space. The creative ideas that everyone proposed encouraged me to think of solutions never thought before. I learnt a lot from everyone. I had never thought that problem solving could be such an enjoyable experience.

Is there anything else we should have asked you or anything else that we should know that might make us like you or your project more?

What is your philosophy of a good application?

I believe that User Experience is the most important thing to be taken care of while making any application and in fact, any product. A good application solves the problems of the users in the best possible way and creates an engaging experience.