

GSoC Project Proposal

Organisation : Digital Impact Alliance

Sub-Organisation : Humanitarian Openstreetmap Team

Project : Team management module for Map-Campaigner

Student's Information

Name and Contact Information

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Blog URL : [God A Myth or Reality](#)

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Resume : [Link](#)

Education

University : Indian Institute of Technology, Roorkee

Major : Electronics and Communication (Batch of 2020)

Current year : Second

Degree : Bachelors in Technology (B.Tech)

Additional

Homepage : [Homepage](#)

HOTOSM - Slack Handle : Surya Saini

Twitter : [Surya Saini](#)

LinkedIn : [LinkedIn profile](#)

Coding Skills

I am comfortable with all the technologies used in the development of this project. I have a strong background in web development, with proficient knowledge in version control system (like git), MTV and MVC architectures. I can write (in order of proficiency)

- ❖ Python : programming in python, Flask web framework, Django framework, Django Rest framework
- ❖ Javascript : JQuery, Vanilla JS, AngularJS, Angular 5
- ❖ Design : Adobe Illustrator, Adobe photoshop

About Me

I am a 19 year old sophomore, currently enrolled in Electronics and Communication engineering at IIT Roorkee. I developed a passion for programming, web development in my freshmen year and from then most of my time goes into reading about new technologies and developing softwares. I have been contributing to open source regularly since about six months now - looking over repositories of the products I use/like, trying to give back my part of contribution back to the organisation.

I have an experience of working closely with a team as I am an active member of [Information Management Group](#) at IIT Roorkee, a bunch of passionate enthusiasts who manage the [institute main website](#), internet and intranet activities of the institute.

Project

Rtograph -

Build with an aim to help the students of the campus, the app brings all the information of the university and graphically displays it on a map overlay. It helps students to search for almost any information with a single query. Rtograph can be aptly called with graphical wiki of IIT Roorkee.

The app is build with Django Rest as backend and has a frontend developed on Angular 5 framework. A lot of challenges were solved in the development of the app. Handling a large data and displaying it on the map, making it look good and having a great UX at the same time.

Save The Clash

Using state of the art object detection, segmentation and monocular depth estimation networks, developed an app to help the visually impaired navigate in an unknown environment. Providing them with a sense of digital vision.

Pre GSoC Involvements

HOTOSM/Field-Campaigner:

#416 (merged)	Fixed typographical errors in README
#419 (mergeable)	Improved UX for campaign view
#420 (mergeable)	Add real time user location on map
#417 (issue)	Deploy the application in development mode.

#110(issue)	Provided a workflow for adding Export File
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Apart from HOTOSM, I have been regularly contributing to other open source organisations too.

Fossasia:

#310(merged)	Added exception handling for "Ask.com" web-scrape
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Aima-javascript:

#133(mergeable)	Add performance measure for simple logical agents
#138(merged)	Fix issue link for A* search
#136(mergeable)	Add Min-Conflict Visualization
#153(mergeable)	Add visualization for Expectiminimax search

Aima-python :

#665(merged)	Fixed typographical errors in agents.py and agents.ipynb
#669(merged)	Updated README
#685(merged)	Added heuristics for A* function
#689(merged)	Solved issue of loading search.ipynb
#697(mergeable)	Added example for hill climb search

Aima-exercises:

#6(merged)	Added file lookup-table in README
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Aima-glossary:

#4(merged)	Added glossary terms
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Aima-data:

#13(mergeable)	Added quadragram file for hill climb search
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Project

Team management module for Map-Campaigner

Motivation

For a successful and fruitful completion of a campaign, it is necessary that there is a proper management in a team. The admins should be able to guide the team members and review their performances, the team members shall contact the admin in case of any discrepancy and work together to solve any issue that arises.

So I would like to work on the project **"Team Management Module for Map-Campaigner"**.

My motivation for GSoC this year is to get started with open source. GSoC is a great program for introducing organisations with prospective contributors. The main reason I wish to work with HOTOSM is to provide my share of contributions towards their greater cause of helping the society.

Deliverables

For proper team management, I believe the following team management components should be worked upon.

- User friendly portal to create team. This would include a portal where the admin can easily create a team, assign the team to particular area of the map where they need to survey.
- A view to allow transparency to the work done by a team. This would allow the admin to look and analyze the work done by a team, connect with them.
- A feature to allow admin to set reminders for team and team members can set reminders for themselves.

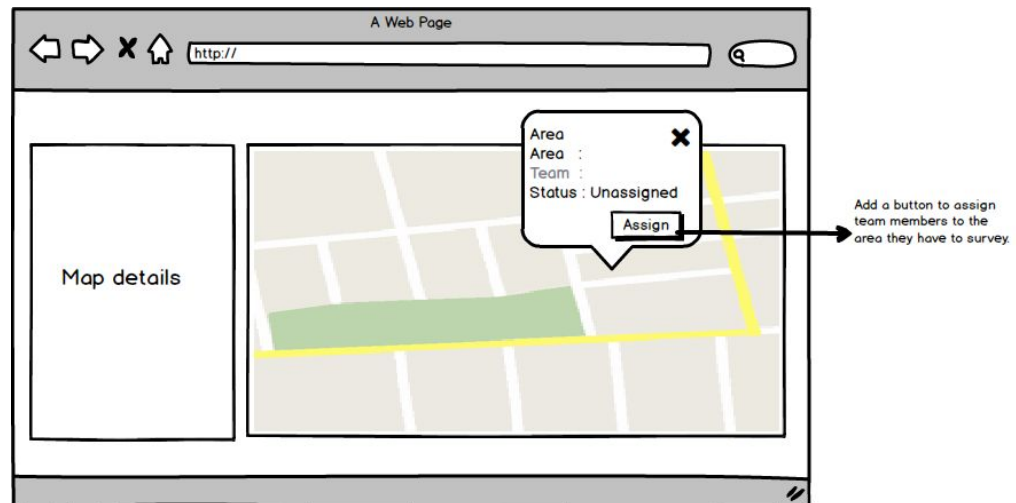
As a part of GSoC, I would work on the above mentioned and add some more features to make the map-campaigner better.

Phase 1 -

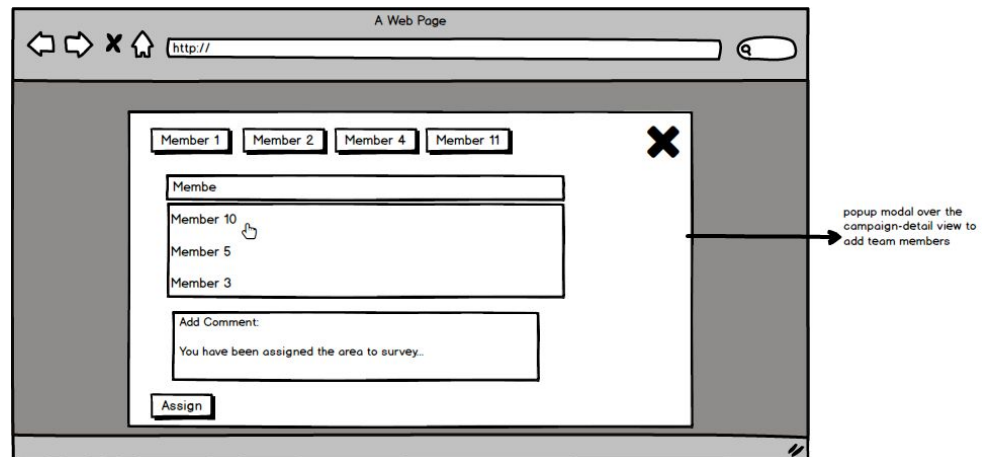
- **Implement Elasticsearch in the DataBase :** Map-campaigner is an application that deals with a large dataset and simple queries by SQLAlchemy takes longer to process and give result. This is highlighted in loading of the data in the views. By implementing elasticsearch, the queries will be faster which in turn will help in faster loading and display of data and a better UX.
- **Show/link data collectors to the area they are assigned [Issue #306](#) :** This would be the first part of the team management components, creating a portal to allow the admin to create a team. The admin can just click on the sub-area of the map where he wants to assign the team and a popup will allow him to select the members for the campaign. The selected members will receive a mail of confirmation. Confirming will lead them to the map with a marker placed at the position they need to survey.

- **Create and implement mockups for the team-creation portal:**

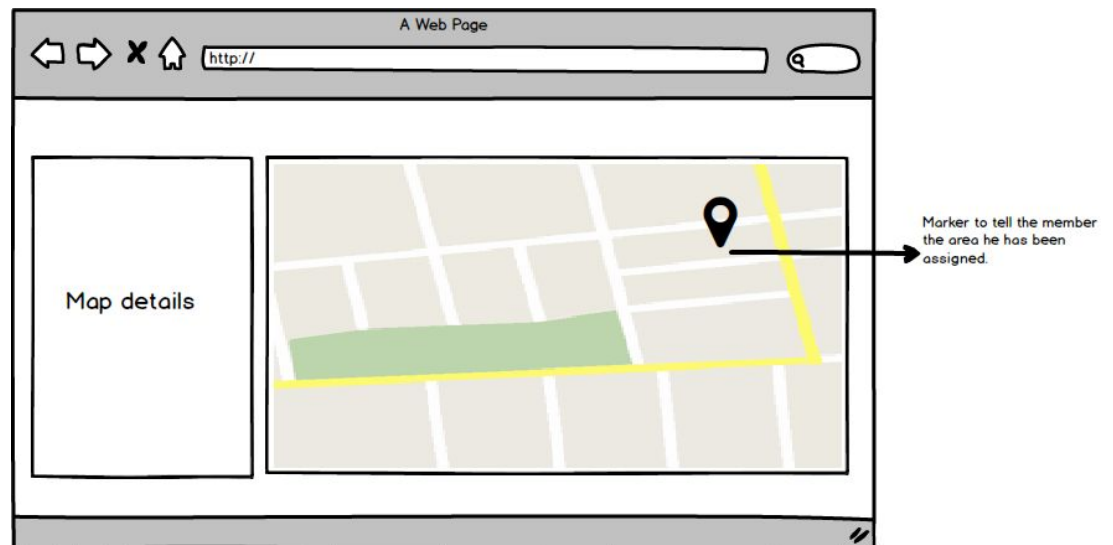
1.) Assign new team members to the area they have to cover :



2.) Add new team members :



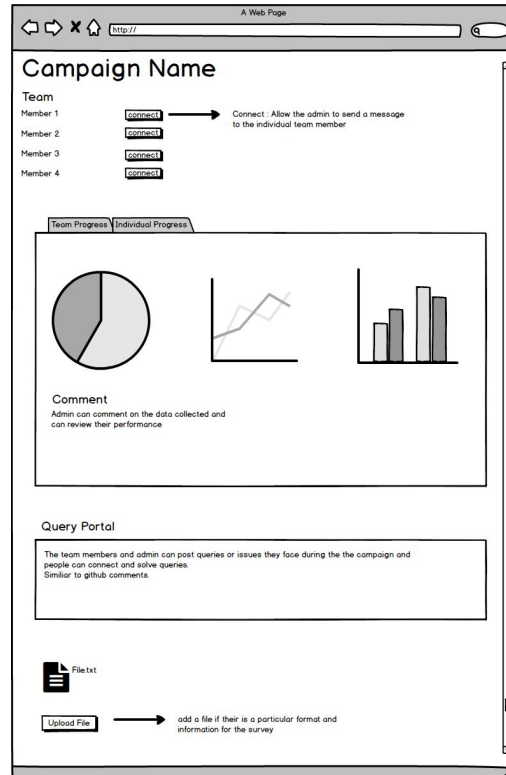
3.) Link him to the sub-area he is assigned to (instead of the entire map) :



- **Add resource page** : The resource page is presently empty, I will try to add a proper implementation to it (if the presents PR's are not merged before GSoC)
- **Add Export File import button** : Solve [issue 110](#). Providing a connection between Field Campaigner and Export Data tool allowing the user to export data in the desired format directly from Map-Campaigner. This would comprise of using the JOSM file created and converting it to GeoJSON and using it to get the required format data from the export tool.

Phase 2 -

- **Implement view to see team progress** : This view aims at providing the transparency to the work done by a team during a survey. The view will contain graphical representation of the work done by individual team member and the complete team (presently only the entire survey progress is depicted graphically). This view will also include the a feature of individual as well as team communication where the admin can comment on the work of team, analyze and plan their future approach. Similar to github issue tracker, a part of the view will be dedicated to solve the issues the members face during the campaign. They can post their queries in this section and the admins and other team members can help solve the issue.
The team progress (admin view)



- **Add data upload feature in the organizer view** : The team members will have access to this component of the organizer view where they can upload their current status and the data they have collected.
- **Implement FAQ section** : In case of queries the viewers or users can post it and people can answer. This would make the whole app more open to the people.

I can think of 2 types of use cases :

- FAQ for the index page, where in general questions can be answered that resource page is unable to convey to the viewers or users.
 - FAQ for individual map campaigns, this way people can ask questions about the status of the campaign. These questions would be directed towards to the campaign admin and will show in his notifications.
- **Add Reminder feature** : Allowing admin the ability to set reminders for the team, e.g. usage set a deadline. Like a normal reminder they can set the time at when the reminder will be active.

Phase 3 -

- **Design and Implement view for team member** : This view will help the user to navigate between their roles team members or admin(of some other campaigns).
- **Add notifications to the landing page** : Allow both the admins and team members to see updates of the campaign they are a part of. This will be active if someone posts on the their queries, they admin comments on the work or external viewer asks a FAQ related to the campaign, specifically addressing them.
- **Improve and work upon other features** : This would include working on features that are essential for the map-campaigner as a whole, instead of team management.
 - **Implement AJAX on search such as add team members, Add extra campaign admins.**
 - **Improve the docker management file** [#issue 417](#)
 - **Work on UI/UX improvements similar to** [#issue 418](#)

Proposed Timeline

Community Bonding Period(23 April - 14 May)

I will utilise this time to get more familiarized with flask, docker, read the documentation, discuss upon the techstack, plugins to be used and get to know my mentor and other fellow community members so that we can work together with an amplified efficiency.

Week 1-2 (May 14th - May 27th)

Make the Database elastic. This would include rewriting all the queries in elasticsearch convention.

Week 3 (May 28 - June 3)

Design and implement Team creation view. Search for the suitable plugin to for email verification in flask.

Week 4 (June 4 - June 10)

Implement the remaining portion of the team creation view and add content to Resources page.

Phase 1 evaluation submission**Week 5-6 (June 11 - June 27)**

Implement Team progress view.

Week 7-8 (June 28 - July 15)

Add FAQ feature, Implement data upload and download, implement AJAX search for all input components in the map-campaigner.

Phase 2 evaluation submission**Week 9-10 (July 16 - August 1)**

Design and implement view for team member, add notification features

Week 11-12 (August 2 - August 14)

Clean and improve the docker file, work on solving the pre-existing issues and enhance UI/UX components of map-campaigner.

Week 13 (Conclusion) :

Create documentation for map-campaigner and add blog for GSoC experience.

Notes

I do not have any other commitment during GSoC period. During this time period I'll be able devote 40-50 hours a week till my college reopens and 30-35 hours per week after that. I am free on weekends.

I have my exams from 26 April - 4 May (Community bonding period). I will utilize this time to get to know my mentor and decide the workflow to be followed. My university will reopen around Week 9 i.e. July 15, from then I will try to devote 30-35 hours per

week. I will be free on weekends I will devote more time towards completion of the project.

I believe I have enough fuel to get started on my goals, I plan to devote my entire summer for the completion of the project.