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Build Knowledgebase Application on CHAOSS Website

GSoC'22 Project Proposal for CHAOSS

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- **Microtasks**: https://github.com/yash2002109/gsoc_22-microtasks
- **Project Link**: https://github.com/chaoss/website/issues/708
- **Project Size:** 350 hours (Large)

Synopsis

The CHAOSS Project's website is an invaluable resource for newbies and core project members alike. The website is crucial in that it provides information that is necessary for the project's smooth running.

However, since the CHAOSS Project has grown in size over the years, one can wonder if the current design is too overwhelming. There is a need to reduce the burden of information from various individual sources.

The website, community handbook, documentation for initiative and software are all separate pieces of information that may be difficult to link together.

The knowledge base project is thus, critical to establishing a centralized platform for information sharing. The following is a brief list of possible knowledge base topics:

- Community Information
- Metrics
- Metric Models
- DEI Badging Initiative
- Software (Define clear paths for users and contributors).

Kevin Lumbard, Matt Germonprez, Elizabeth Barron, and **Ritik Malik** are the mentors for this project.

Benefits to the Community

As the CHAOSS Project advances, knowledge becomes increasingly dispersed across an increasing number of locations. Emails, social media engagements, Github issues, comments, and even individual brains can become clogged with information.

The user expects and needs convenient access to reliable information. And they are frequently unwilling to file a Github issue or send an email to do so. They require an immediate response. Having a sizable and comprehensive knowledge base is thus vital for any organization.

By consolidating information into a knowledge base, we can improve user experience, increase efficiency, foster collaboration, and spend significantly less time addressing the same questions.

Current Status of the Project

CHAOSS Project already has an existing website: https://chaoss.community/. Further work would be done on this website itself.

As informed by the mentors, the website will be undergoing some changes in design and structure during the summer. This gives me some leeway as to how the knowledge base can be integrated with the website.

I would like to focus on the aspect that we provide vital and necessary information on the website and through the knowledge-base.

Goals

Goal 1:

Reduce the burden of information on the community handbook, website, and individual repositories, making them easier to navigate.

Goal 2:

Create a one-stop solution for all kinds of users, whether new or old, to easily obtain information concerned with CHAOSS.

Goal 3:

Establish clear paths for users/contributors to follow in order to get started quickly, reducing the amount of time spent linking different pieces of information.

Stretch Goals:

- Implement tagging in the knowledge base articles to enhance the search experience
- Add a glossary to complement the knowledge base that could help find relevant articles and information on a particular topic.

Deliverables

I've included short and crisp deliverables below to assist mentors in assessing the project's status.

Deliverable 1: Identify information that is to be added to the knowledge base and its scope.

Expected by Evaluation 1

Deliverable 2: Design the knowledge base and create different categorization options that are suitable for the information being added. Implement styling that complements the CHAOSS website.

Expected by week 8-9 of the coding period

Deliverable 3: Create/Move the required articles for the knowledge base with the help of existing documentation and organize the information into respective categories and subcategories to facilitate easy navigation.

Expected by the end of the coding period

Expected Results

The main motive of this project is to have a unified platform where users of all types can access reliable information.

By the end of the project, the website would be equipped with a fully functional knowledge base that would allow users to search for information concerned with the CHAOSS Project.

The knowledge base would mainly have four high-level categories, or we can refer to four sub-knowledge-bases:

- Getting Started/Community Info
- Metrics
- Metrics Models

- Initiatives and Software

The above categorization is only tentative and may change depending on how the redesign of the website continues and mentors' opinions over the summer.

Further, each of these high-level categories would be populated with required information from the perspectives of a newcomer as well as the community members.

As CHAOSS's requirements continue to evolve, the knowledge base can also be enhanced. Maintaining the knowledge base would be a straightforward task, given that we already maintain a WordPress website.

Approach

Identification of information for the knowledge base and its scope.

The first and most critical step toward developing a knowledge base is determining its purpose. Having a knowledge base with an excessive amount of information may cause the knowledge base to reach its capacity and result in redundancy. As is the case, I believe it is preferable to follow the SSoT norm and pull/link the content from the original source rather than repeating it.

On the other hand, having insufficient information negates the very point of developing a knowledge base.

Upon consultation with the mentors, I have come up with the following categorization:

- ❖ Getting Started/Community Info
    - The section would contain any information that could help a newcomer get started with CHAOSS.
    - A newcomer could come in two capacities, either as a user or as a contributor. It is necessary to account for both of these categories of people.
    - The objective is not to provide the visitor with lots of information. Instead, it should be about guiding him with clear paths he could take as per his choice.

- ❖ Metrics
    - The categorization of metrics can be done in several ways. CHAOSS has identified around 70 metrics, and organizing them would be one of the major challenges of the project.

- The metrics are developed in working groups and categorized under focus areas. However, this may not be the way in which they are consumed.
- I will be working on creating different categorization options for the metrics that could help users.

❖ Metrics Models
- The metrics models are still in a very early stage of development; their implementations are still a work in progress.
- Including them in the knowledge base is essential as they help provide a deeper insight into an open-source project.

❖ Initiatives and Software
- CHAOSS has the DEI Badging initiative, Augur, and Grimiorelab that would be included in this section.
- The software has its own official documentation; thus I would suggest providing the visitor with an overview of the software and pointing him to the original documentation.
- For software, there could be two categories of people.
  - Users: People who are simply interested in using the software
  - Contributors: People who are interested in contributing to the development
- Thus, we need to be clear with the information and paths we provide to these categories of users.

Design the knowledge base and create different categorization options. Implement styling that complements the CHAOSS website.

Once we have an overview regarding the information that needs to be included in the knowledge base, further work can be done on actually implementing the knowledge base.

There are several knowledge base plugins available. For the purpose of microtasks, I have explored and tried out some of them. The ones used in the microtasks are

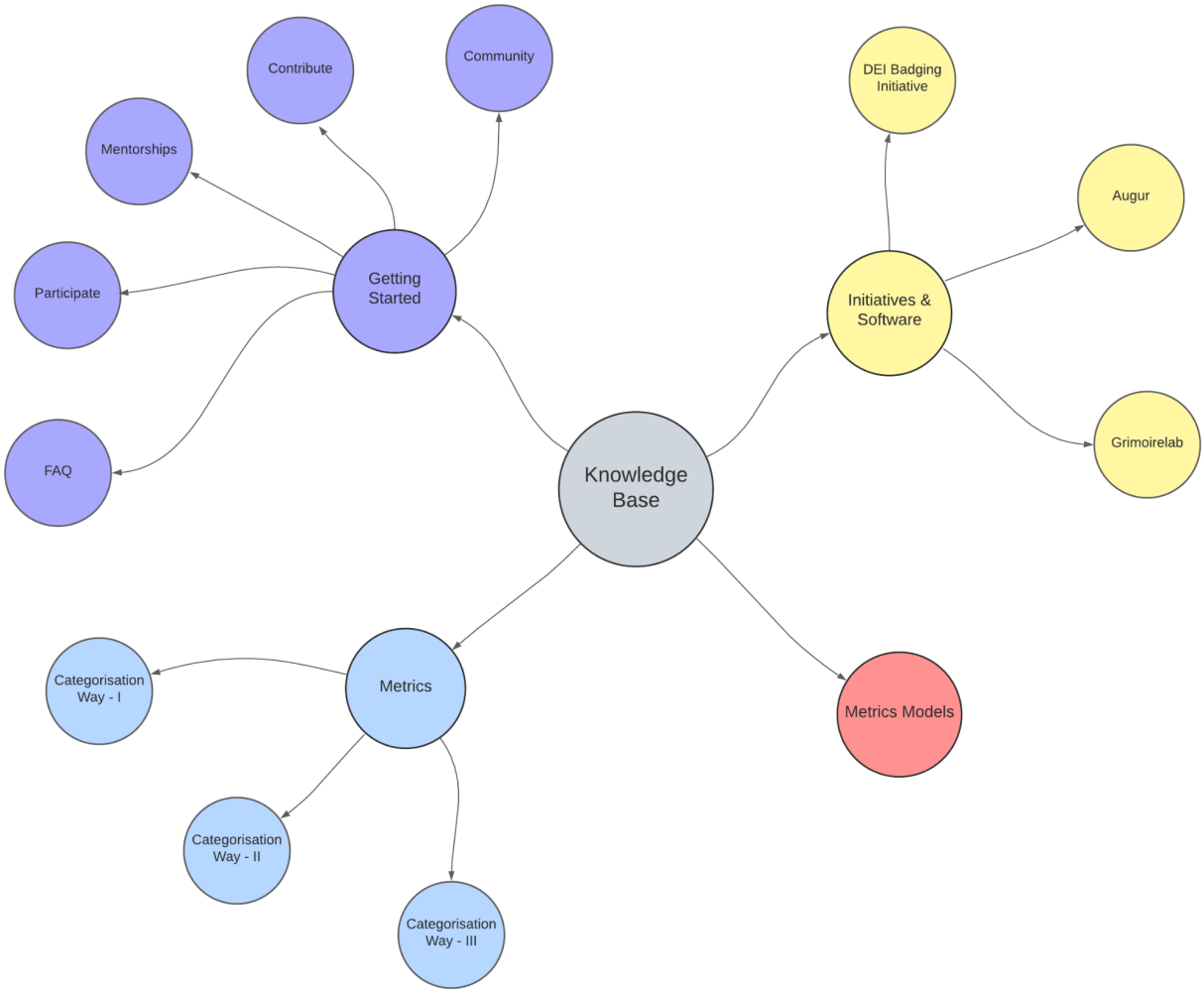
1. BetterDocs
2. Echo Knowledge Base

The information related to these plugins can be found in the microtasks repository.

I will also explore and implement more plugins that serve a similar purpose after the proposal submission period and during the community bonding period to determine the best choice.

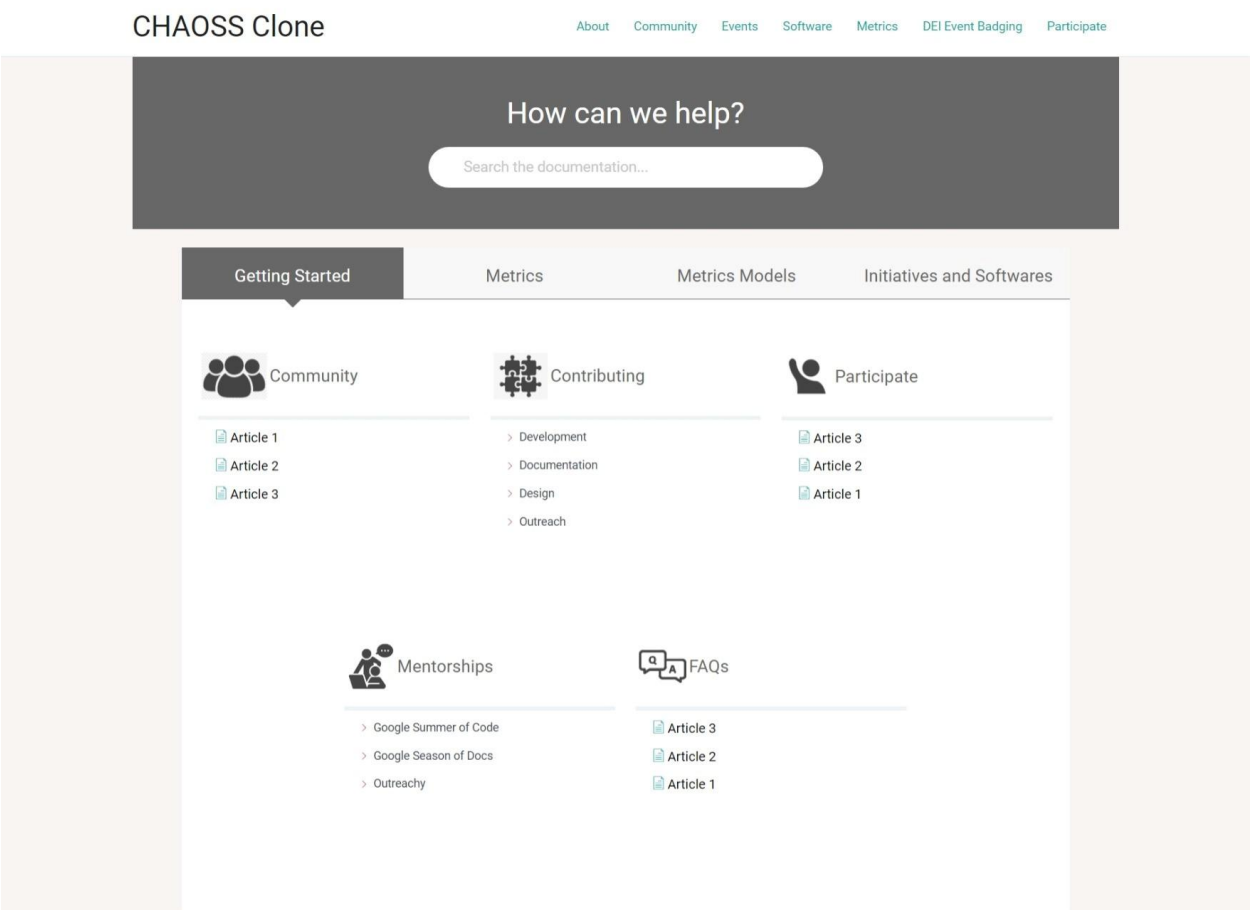
Personally, I support the creation of several sub-knowledge bases or the categorization of information on a higher level. This can assist the user in comprehending the CHAOSS Project's work and its involvements.

The following mindmap helps visualize the idea:



Mind Map for Knowledge Base
(Click here to view the enlarged image)

I was able to replicate the above visualization as a part of the microtasks - Implementation.



Prototype for Knowledge Base
(Click here to visit the prototype)

The actual categorization and articles may differ depending on how the project develops and on the plugin used for the knowledge base.

Further, I'll be coordinating with the website redesign team to make sure I am able to smoothly integrate the knowledge base with the website. The styling and customizations of the knowledge base can be based on the website.

Create the required articles and organize them into respective categories and subcategories.

After creating the knowledge base's foundation, I'll focus on determining which pieces of information are necessary from the standpoint of a knowledge base visitor.

This information may already exist in the community handbook, website, repositories, etc., and can either be moved or pulled from its origin. If the information does not exist, I'll try creating it with the help of existing documentation and mentors' guidance.

Each high-level classification would have further subcategories, as illustrated in the mind map above. The objective for each subcategory would be to determine the critical information that should be included in the knowledge base.

Additionally, a poll might be used to ascertain the information that the community anticipates finding in the knowledge base.

For example, the “Getting Started” section could have subcategories as:

- Community Information
    - This would house the information related to the CHAOSS community.
    - The community handbook would be a great resource while designing this section.
- Contributing
    - A person can contribute in a variety of ways, including development, design, documentation, and outreach.
    - Each of the subcategories above can be developed further by including pertinent articles and guidelines on contributing.
- Participate
    - The participate section would detail the various methods by which a candidate could get involved with the CHAOSS Project.
    - However, we must make sure that we do not duplicate the information from the “participate” page of the website.
- Mentorships
    - A significant portion of the CHAOSS Project’s work is accomplished through mentorship programs such as GSoC, GSoD, and Outreachy.
    - Students, in particular, who wish to apply to these programs may find the mentorship area quite resourceful.
    - The section will be structured in such a way that it addresses the most common queries by students/mentors about the programs and how CHAOSS operates these programs.
- FAQ
    - The FAQ section is quite essential and would answer the most common doubts people have.
    - For example, new contributors frequently face an issue with the DCO signoff. We could include an article for that or refer contributors to the appropriate page.

As done above, the same approach of determining the necessary information and applying it in an intelligible manner would apply to other sections as well.

Timeline

I will be following the order of work as specified in the approach section above and based on the mentors' recommendations.

The estimated working hours to complete the project is 350. Dividing 350 hours over 12 weeks could prove to be quite challenging over the summer. Fortunately, Google has added an option to extend the timeline this year in case the mentee and mentor feel they require additional time to complete the project. The timeline can be extended by up to 10 weeks, thus providing sufficient time to complete the project.

I have created the below tabularization based on estimated times to complete each task. The actual timeline may differ as the project progresses.

Time Period	Tasks
After proposal submission [April 19 - May 20]	● Continue contributions to the website and try to improve its workflow. ● Actively look for information that people regularly require across the organization. ● Investigate alternate methods for achieving the goals.
Community Bonding Period [May 20 – June 12]	● Discuss the proposal with mentors and apply their advice. ● Gain access to the CHAOSS website and try to understand more about its structure and workflow ● Research for more knowledge base plugins that could provide a better experience. ● Finalize the project approach.
Deliverables 1 and 2	**Identify information that is to be added to the knowledge base and its scope.** **Design the knowledge base and create different categorization options.**

Week 1 and 2 [June 13 – June 27]	● Identify information that would be added to the knowledge base. ● Coordinate with the website redesign team to keep up with the latest developments.
Week 3 and 4 [June 27 – July 11]	● Create different categorization options for information. ● Work on defining clear paths for visitors and ensure their needs are met.
Week 5 and 6 [July 11 – July 25]	● Implement the finalized KB plugin after discussion with the mentors. ● Create the foundation and wireframe of the knowledge base.
Week 7 and 8 [July 25 – August 8]	● Implement different categories and subcategories inside the knowledge base after consultation with mentors. ● Take a survey of the community and incorporate their opinion regarding the information to be provided in the knowledge-base
Deliverable 3	**Create/Move the required articles for the knowledge base with the help of existing documentation and organize the information into respective categories and subcategories to facilitate easy navigation.**
Week 9 and 10 [August 8 - August 22]	● Identify how information can be divided into categories and subcategories to allow easy access to the visitor. ● Start creating the required articles either by moving information or pulling from original sources (repositories).
Week 11 and 12 [August 22 – September 5]	● Make sure the information does not get lost while moving the articles. ● Verify the existing articles to make sure the information is valid and up to date. ● Schedule a review of articles by the mentors.

[End of Standard Coding Period]	**Note:-** September 5 would be the end of the standard coding period. However, I think the project might require some more weeks because creating the articles, getting them reviewed, and finalizing them could be a time-consuming task. The decision to extend the timeline can be taken as the project progresses.
Week 13 and 14 [September 5 – September 19]	● Create the articles which do not exist and are necessary for the knowledge base with the help of existing documentation
Week 15 and 16 [September 19 – October 3]	● Get the articles reviewed by the concerned groups to check for the veracity of the information. ● Finalize the information in the knowledge base.
Week 17-22 [October 3 –November 13]	● Review the final project. ● Try to implement feedback from mentors and other members of the CHAOSS community ● Test the knowledge base for any issues or bugs. ● Create any documentation that may be required for the understanding of the knowledge base. ● Work on stretch goals. ● Buffer period
	Submission of the work done
Submission Week [November 13 – November 21]	● Create and submit the final work report of the project.

I believe that the project might actually be completed earlier and would not stretch till November. As per the above estimates, the project may be finalized by week 17 or 18, if not earlier. However, I've reserved the remainder of the time as a buffer in case we run into any unforeseen difficulties.

About Me

I am Yash Prakash, a sophomore undergraduate student. I'm pursuing my Bachelor's in the field of Electrical Engineering from the Indian Institute of Technology, BHU (Varanasi). I've been a part of open-source communities for over a year and still continue to be fascinated by them.

I have significant experience writing Python, C, C++, and Javascript. I'm particularly interested in Web Development and have extensively worked with frontend frameworks such as Vue.js and React. For the purpose of completing the microtasks, I have gained familiarity with WordPress and am fairly confident with it. My resume includes detailed information about the projects I have worked on and my complete profile.

During my period of association with CHAOSS, I have worked on the MARS Project for the automated release of metrics. During the project last year, I coordinated with the release team, different working groups, and the translations team. This helped me gain a high-level understanding of the working of the CHAOSS Project, which I feel could be crucial in designing the knowledge base.

Post GSoC

- By the end of the project, I anticipate being fairly proficient in the field of information architecture and user interface/user experience design.
- I would also be interested in working further with the CHAOSS Project as a maintainer of the website and would like to continue contributing.
- Additionally, I'm willing to work on more new projects that could benefit the community.

Contributions

I have been associated with the CHAOSS Project for almost a year now. From my earliest contributions, which included correcting a typo and arranging the file structure, to contributing a whole piece of software, the path of contributions has been joyful, and I wish to continue ascending.

My contributions can be found in the final project report that was made at the completion of the MARS Project.

Apart from that, I've attended community call meetings and interacted quite freely with other community members. I have also attempted to assist with website-related concerns on a frequent basis.

Microtasks

Link to the Microtasks Repository

I have completed all four microtasks assigned, and I was pretty successful at achieving the required results.

Among the microtasks were hosting a WordPress site and experimenting with knowledge-base plugins. I've investigated several plugins and attempted to implement a few of the most popular ones. The plugins perform nicely and offer sufficient customizability to be connected seamlessly with a WordPress website.

Why CHAOSS?

The CHAOSS Project has been highly supportive of my contributions over the past year. CHAOSS provides me with an excellent platform to develop skills while remaining connected to a worldwide community. I've been interested in web development, and when I learned that CHAOSS would be undertaking a web-based project, I knew I had to apply for it.

Work Management and Communication

- I intend to contact mentors via Google Meet every two weeks to keep them updated on the project's progress. During that time, I will also explain my doubts and consider their suggestions.
- I will also be using emails and Slack to communicate with mentors to discuss the latest developments in the project.
- I also want to deliver an update to the CHAOSS community on a fortnightly basis by providing a quick summary of the project's status. This can be accomplished via the mailing list.

Availability and Other Commitments

- The late summer would be the on-campus internship season for me, wherein I would be applying to various companies. The examinations and interviews for that are expected to take place from mid-July to early August. During that time, it may be difficult for me to commit time to the project.

- This year GSoC has provided an option to take an extension in the timeline in the event that the project is not completed in the standard coding period. I plan to utilize the extension in the coding period after discussion with the mentors and as specified in the timeline.
- I plan to devote around 20-25 hours of my time to this project, per week, during the coding period. Depending on the project requirements, I'm prepared to devote more time to the project.

Note of Thanks

I would like to thank Kevin Lumbard, Matt Germonprez, Elizabeth Barron, and Ritik Malik for actively clearing my doubts regarding the project and their guidance. I'd also like to thank the CHAOSS community for fostering such a great atmosphere during their regular meetings, which are frequently the best part of the day.

More Information

For any further doubts or clarifications, please feel free to drop me a mail at yash2002109@gmail.com

References

- https://github.com/chaoss/website/issues/708
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