About the organization

Oppia is a free, online learning platform that aims to make quality education accessible for students around the world, especially those from under-resourced backgrounds. By creating a set of free, high-quality, demonstrably effective lessons with the help of educators from around the world, Oppia aims to provide students with quality education — regardless of where they are or what traditional resources they have access to.

The platform provides support for creating interactive lessons that are supplemented with translations and voiceovers in students' native languages, and that provide helpful guiding feedback based on students' answers to questions within the lessons. The team is also currently building an Android app that can be used by students who don't have good access to an Internet connection.

We have a large development community, and are committed to supporting new developers who are discovering open source for the first time. Since the project's inception in 2015, we've been fortunate to work with more than 400 contributors and help over 1.1 million users learn something new on the platform. The Oppia project was featured by Hacker Noon as one of the top 100 most valuable repositories on GitHub (out of around 96 million).

About the project

Problem statement

The Oppia project has a large technical community, comprising numerous open-source contributors from around the world. However, there are several development processes, principles, and practices that the team follows but which are not clearly documented anywhere. This can sometimes make it hard for newer contributors to the project to get started, since it results in their being unaware of these processes and practices, and sometimes lacking the necessary context to tackle issues successfully.

Currently, reviewers and mentors help/guide contributors with such questions. However, we do need to document these guidelines/principles in order to ensure that the project is welcoming and accessible for new contributors, and to help these developers contribute independently and effectively.

Project's scope

This project involves organizing the information architecture of the Oppia wiki. As part of this, several new additional short guides for Oppia developers in the form of "how-tos" will need to be written; these guides are intended to be helpful in addressing common questions asked by both new and experienced developers. The aim is to address all questions that Oppia developers regularly face in their work. This project would therefore include writing/updating documentation on the following topics:

1. How-to docs:
    - How to set-up the development environment in different text editors/IDEs [Sublime, VScode, Atom]
        - How to integrate third-party linters and register custom linters.
        - How to set up the IDE to quickly run tests.
        - How to set up the environment to support easy debugging.
    - How to write and test an Apache Beam job

    - How to write a new lint check
    - How to integrate and upgrade third-party libraries
    - How to write good end-to-end tests
2. Docs that explain various structures and processes:
    - How the various extension frameworks are structured
        - rich_text_components
        - interactions
        - visualizations
        - issues and actions
        - schema-based editors
        - object editors
        - schema validations
    - How Oppia's build process works
    - How Oppia compiles and uses protobuffers
    - How the codebase is structured (including frontend and backend), and how to write a simple full-stack change (i.e., explain how the different pieces fit together)
    - How Oppia's storage infrastructure works and how the different entities are connected to each other:
        - images
        - explorations, skills, questions, topic
        - feedback, suggestion
        - users

The Oppia Foundation and @DubeySandeep (the Development Workflow team lead) have committed to supporting the project. We estimate that this project will take a single technical writer four months to complete (assuming approximately 15 hours/week). We have not yet identified the technical writer whom we plan to work with.

We have worked successfully with technical writers in the past, and would be happy to support the selected person with the necessary guidance through regular meetings and informal chats (especially with the Developer Workflow and Welfare Team leads). Please note that, for this project, we would prefer technical writers who have some coding experience (ideally with Oppia, but it doesn't have to be a lot). This is because developers are the main audience for this project, and we believe that it would help the technical writer to have a first-hand understanding of common issues that new developers face in order to ensure that the project succeeds.

Measuring the success of the project

- The project aims to address the following issues:
    - Contributors find it hard to understand the structure of the codebase. This leads to their asking repeated questions to other contributors in order to try and understand the structure.
    - Contributors have trouble understanding the process of performing general tasks (e.g. writing lint checks or Beam jobs).

- Success metrics:
    - 100% of questions about the codebase structure that developers ask (on the Oppia community chat channels) should be resolvable with a link to the wiki.
    - 100% of "how-to" questions that developers ask (on the Oppia community chat channels) should be resolvable with a link to the wiki.

- Process for calculating metrics:
    - We will start by announcing the newly-created documents on the community channels and linking the documentation from the wiki sidebar and other existing related wiki pages. We will also ask the team lead/welfare team members to:
        - Redirect developers to the wiki page if they have questions about the structure of the project.
        - If you or any of your mentors have worked with technical writers before, or have developed documentation, mention thiNote down any questions that aren't addressed by the wiki, and work with the technical writer to fix the gaps.
    - Then, on a weekly basis, we would measure the following metrics:
        - "Codebase structure" questions (this information is gathered from team leads and members of the Oppia welfare team):
            - [T] Number of "explain codebase structure" type questions they received
            - [R] Number of "explain codebase structure" type questions they replied to with a wiki link
            - Calculation: [R / T] * 100
        - "How-to" questions (this information is gathered from analysis of the community chat channel's activity):
            - [T] Number of "how-to" questions asked
            - [O] Number of obsolete/stale "how-to" question threads (that are obsolete/stale due to a lack of response from the original asker)
            - [RWL] Number of "how-to" question threads that were resolved with a wiki link
            - Calculation: [RWL / (T - O)] * 100

  * Welfare team: The team which is active on the public channel to help/support developers with their questions.

Project budget

Item	Amount	Running Total	Notes/justifications
Technical writer charges for "Guide for Oppia developers" project for Oppia	$12,000	$12,000	20 subtasks @ $600 per task (on average).
Volunteer/Mentor stipends	$1,000	$13,000	2 * 500 (for 2 volunteers)
Total		$13,000	

Additional information

Oppia has actively participated in open-source programs like Google Summer of Code [5 times], Outreachy [3 times], Season of Docs [1 time], GHC Open Source Day [2 times], and Hacktoberfest [5 times]. Throughout these programs, we have mentored contributors through 27 successful projects (for GSoC), 1 successful project (for SoD), and 4 successful projects (for Outreachy). We plan to use the structures and

experience we've gained from mentoring contributors to these programs in order to work effectively with the technical writer during Season of Docs.

During Season of Docs 2019, we worked with a technical writer, Audrey Tavares, on the project "Beginners' guide to creating lessons and associated material on Oppia". During the program, Audrey initiated multiple pull requests in our creator-documentation repo on Github, which got thoroughly reviewed by the mentor and other team leads of the projects. She also created a video explaining how to use the features, which the creators and contributors found helpful for getting started with the platform. When the contributor dashboard project was launched, we were able to link to Audrey's documentation in order to provide help to users who were using the dashboard for the first time.

We had a great time working with Audrey and helping her complete her project. From our previous experience, we believe we now have a better framework for how to work with technical writers, and we have also developed a better setup and review process for onboarding new technical writers to the project.

References:

- Season of Docs report by Audrey Tavares
- Audrey's Season of Docs Story by Geri Ochoa, Google Cloud