GSoC 2020 Project Proposal

Improve & maintain 25 Sugar activities

Basic Details

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University: Indian Institute of Technology, Roorkee

Field of Study: B.Tech in Electronics (Batch of 2021)

Your first language: Hindi but equally comfortable with English.

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Timezone: UTC +5:30 India Time Zone

Share links, if any, of your previous work on open source projects?

After finishing high school, I explored the field of programming and software development, since then I have developed a passion for it especially in the field of web development. In the first semester of my college, experienced seniors advised me to push small personal projects I developed while learning to open source platforms like GitHub. That's how I got introduced to a version control system like Git and since then I have been constantly involved in reading and writing software on GitHub.

I have been programming in **Python** and Javascript (**React.js**) for the last 2 years, I have done a lot of small scale projects which are available on my GitHub handle.

Following are some of my other **past major projects** in the field of development:

Online Bonafide Certificate Generation System

- Established a user-friendly environment for students of IIT Roorkee to get certificates like bonafide online.
- Tech Stack: Django, SQLite

Official Alumni Portal

- Developed the front-end of new official alumni website of IIT Roorkee
- Tech Stack: React, Redux

Convince us that you will be a good fit for this project, by sharing links to your contribution to Sugar Labs

I believe I have enough fuel to get started on my goals - as a result of my involvement with the sugarlabs in the past few months.

I have been actively involved in Sugar Labs for the past four months, contributing to such a big open source community really excites me. The last four months have been a great learning experience for me. Knowing that your work is going to contribute to a social cause and will impact society in a positive manner makes working all the more fulfilling.

The activities that we work on follow a similar fundamental code structure, adding further complexity depending on the use case of the activity. This helped me a lot in understanding and getting acquainted with the codebase in much less time.

The following are **some of my contributions to Sugar Labs** that include PRs for bug fixes, porting the codebase, etc.

- #13 in Calendario
- #21 in Make-them-fall-activity
- #22 in Across-and-down
- #11 in TurtlePond
- #24 in Finance
- #3 , #5 , #2 in I Know Activities

With more than **45 pull requests** made and nearly **60 commits** in the code base of Sugar Labs, I am now quite familiar with the Sugar Desktop, Development Environment and its working. This would turn out to be a great help to me in completing the task.

All my contributions to Sugarlabs can be found here: **Link**

These are some of my **pull requests** which I **intend to complete** before the project period starts i.e. in the month of **April**

- #1 in PyCut
- #4 in ayni-activity
- #10 in pukllanapac
- #6 in cuidarme
- #13 in activity-erikos

Why do I want to take part in Google Summer of Code under Sugar Labs?

Google Summer of Code is a great program for introducing organizations with prospective contributors. I have worked previously on various projects but never in a big project with a real-world impact. This prospect is very exciting for me. GSoC is the best way to learn how to work in an open-source community where you have a number of people from different parts of the world working and building code collaboratively. It provides a platform for college students like us to get to add various skill sets while developing under the guidance of big organizations and experienced mentors.

Sugar Labs has some really good mentors, be it **@quozl** or **@srevinsaju**, they both are always willing to help me to the greatest extent they can. Especially **@quozl**, his daily review, and quick responses encourage me and give me opportunities to learn more and more.

The ultimate aim of the Sugar Labs community(and OLPC) is to provide education to children. When developers see the impact of the software they work on, they 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 software for children.

After considering these many factors, It was a very easy decision to choose **Sugar Labs as my only mentoring organization** for Google Summer of Code 2020.

Project Details

What are you making?

Sugar has a lot of activities, with 250+ on GitHub, and more elsewhere. These activities have scope for improvement including bug fixes, features, update human translations, and release. The aim of the project is to improve and look after the maintenance of at least 25 sugar activities. The project also involves selecting 25 activities that are either a part of Fructose or have strong pedagogical value, working on and releasing them.

I will be following all the steps necessary before releasing an activity, i.e. maintaining NEWS file, refreshing pot files, reviewing all pending pull requests.

Activities were selected on the following grounds:

- Either a part of Fructose or have a strong pedagogical basis
- Popular on activities.sugarlabs.org
- I have previously worked on
- Are games great for learning
- only those activities which are on **GitHub**

Note: *Issues and features I am mentioning against the activities are those on which I will work upon OR which should be resolved before their release. There will be many activities that will involve working on other related issues as suggested by the mentor.*

Activity	Issues / Features to work on
Terminal-activity	❏ Scripted demonstration in the help window like Implode ❏ Port GObject based methods to GLib ❏ Add ctrl+q and escape accelerator to help window
Chart	❏ Separate expression parser file similar to finance ❏ Port GObject based methods to GLib ❏ Add test to the parser ❏ Fix translate.sugarlabs.org regressions
Pippy	❏ Undo Redo button remains sensitive ❏ Avoid imports from Sugar Shell ❏ No source tab on the resume of empty file

Write-activity	❏ Add word & character count in viewToolbar ❏ Error on clicking ‘Save as Hypertext’
Numbers	❏ Fix ValueError mentioned here #5 ❏ Fix failing during resize ❏ Port to Python 3 ❏ Refresh POT files
Turtlepond	❏ Fix source_remove warnings ❏ Fix turtle dance animation stutter
Dasher-activity	❏ Merge changes made by me from the upstream repository maintained by **cristian99garcia** ❏ Port setup.py ❏ Labels missing on some keys ❏ Shift to GLib ❏ Missing summary
Block-party-activity	❏ Add Toolbar ❏ Port GObject to GLib ❏ Missing Documentation
Falabracman-activity	❏ Version in the repository is not published ❏ Remove PyGI warnings ❏ Write user documentation to help ❏ Add screenshots
iknowSriLanka	❏ Add to help activity ❏ Flake8 opportunities (824 in Total) ❏ Allow sugar toolkit to clean up while quitting ❏ Update translations from translate.sugarlabs.org ❏ Release bundles
Simulate-activity	❏ Update sugargame to v1.3 ❏ Port to Python 3 ❏ Missing license, summary ❏ Refresh PO files
Flappy-birds-activity	❏ Does not work when installed on a system ❏ Empty event queue crashing the activity ❏ Add spacebar key along with upper arrow key for bird control ❏ Proper handling of keypress events(some keys are missed) ❏ Doesn’t allow Sugar Toolkit to clean up (calling sys.exit)

Letters	❏ Fix #9 ❏ No instructions for a user
Calendario	❏ Highlight the date selected ❏ Pot file already refreshed, only release remaining ❏ Close #7
Triples	❏ Fix recursion during resize ❏ Instructions on how to play using a help button in the toolbar ❏ Shift documentation to help entry
XOlympics	❏ Replace box2D binaries with Box2D upstream ❏ Update sugargame to v1.3 ❏ Port to Python 3
iknowRwanda	❏ Avoid sys.exit ❏ Add to help activity ❏ Flake8 opportunities (572 in Total) ❏ Update translations from translate.sugarlabs.org ❏ Release bundles
Lemonade	❏ Port setup.py ❏ Finish python3 port ❏ Version problem ❏ Move documentation
Mateton-activity	❏ Maintenance plan as discussed here **#1**

These are some activities which I am already maintaining and will be in a release-ready state very soon:

CowBulls-activity **PR: #15** Reviewers: Srevin, James	✓ Fix black screen on pressing buttons ✓ Fix Force redraw for play and next round button ✓ Add icon for the restart button ✓ Manage the frame rate during redraw ✓ Fix video resize event handling ✓ Update sugargame to v1.3 ❏ Add help button for users on how to play ❏ Number entry doesn't fit on display (1024*768) on hard level ❏ Port to Python 3

Across-and-down **PR: #22** Reviewers: James, Srevin	✓ Fix NameError for 'GRID_CELL_SIZE' ✓ Remove undefined function calls ❏ Remove recursion on activity resize ❏ Flake8 opportunities (Too many: 1616 in total)
NumberRush-activity **PR: #1** Reviewers: Aniket, Srevin, James	✓ Fix activity not terminating properly ✓ Fix event handling during animations ✓ Fix heavy CPU usage problem ✓ Add gitignore, readme ✓ Update sugargame to v1.3 ✓ Port to Python 3 ❏ Add score.pkl for keeping a high score ❏ Control falling speed of numbers ❏ Fix issues when using the non-activity mode ❏ Flake8 for NumRush.py
Reflect **PR: #14** Reviewers: Chimosky, James	✓ Port GConf to Gio.Settings ✓ Port to TelepathyGLib ✓ Update collabwrapper ✓ Port statvfs to os module ❏ Avoid Imports of jarabe ❏ Port to Python 3 ❏ Other bug fixes before release as suggested by quozl

How will it impact Sugar Labs?

This project is important to the Sugar Labs community because through this project we ensure the continuation and proper functioning of activities in the Sugar environment. It is really important for Sugar Labs to have well functional and maintained activities, as these activities are used by teachers and children. Activities that I have selected need maintenance and release. This project will provide Sugar Labs with 25 well functional activities, the latest version of those will be released on **activities.sugarlabs.org**.

This project will also work in coordination with the **Port to Python 3** project. The fact that the support for Python 2 has been dropped and no more bugs/security fixes go on to prove the importance of this project. With the help of this project, our aim to provide long term support to Sugar activities will actually be fulfilled.

Project completion will result in:

- 25 well-maintained activities with all its dependencies upgraded to the latest version and release-ready states.
- A newly released version of those on activities.sugarlabs.org

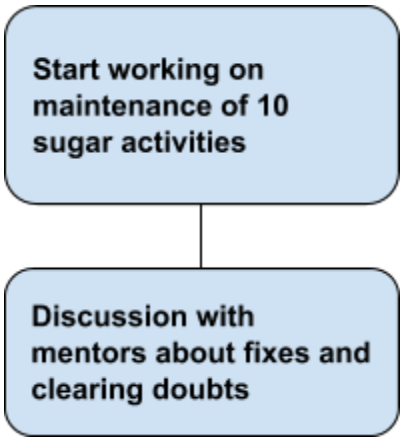
What technologies (programming languages, etc.) will you be using?

Most parts of the project will involve coding in **Python** and the use of GTK+3 libraries, sugar-toolkit-gtk3, Pygame and Sugargame modules as well. I can also use other libraries to implement a particular fix or a feature.

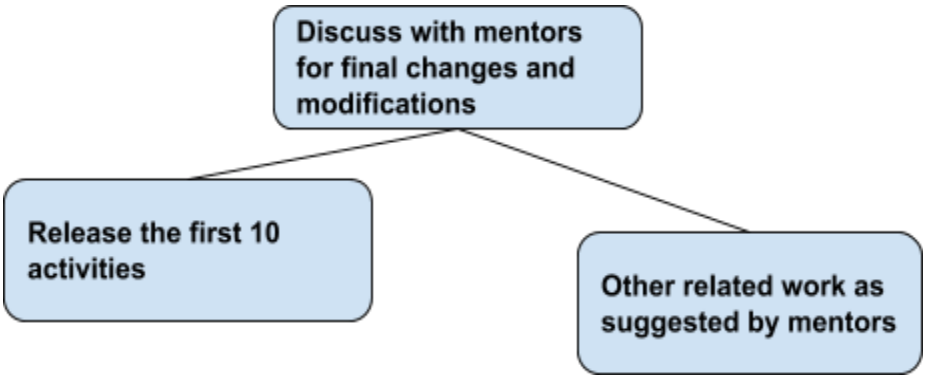
Timeline

*This is just a proposed timeline. I have tried to make my timeline flexible so if the targets mentioned are completed before or the timeline leaves with some **free time**, then I will first discuss with my mentors and will involve myself in solving **general issues** and keep contributing to the codebase as I was doing before this 3-month period.*

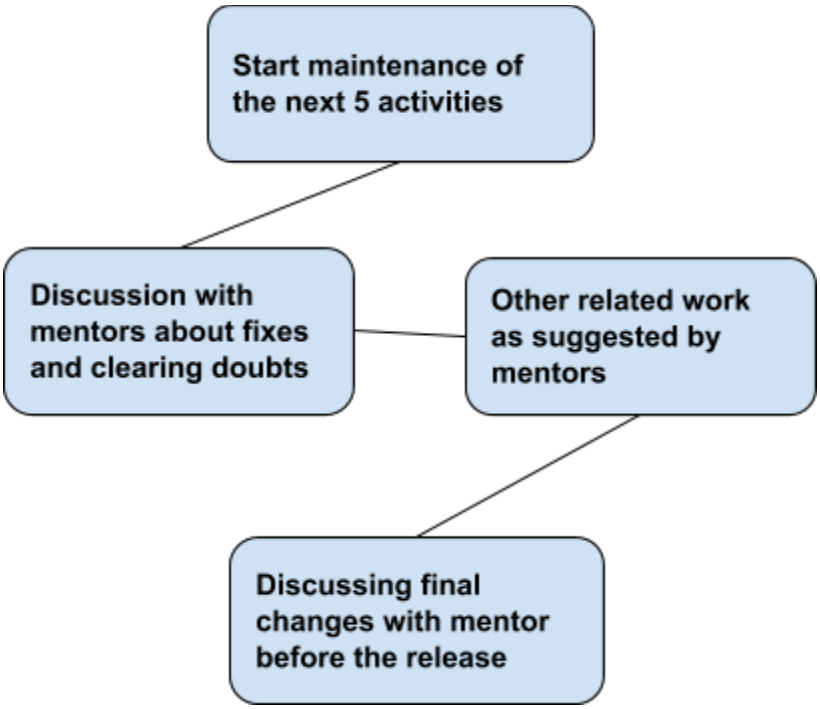
18th May to 30th May - Coding officially begins



30th May to 10th June



11th June to 19th June

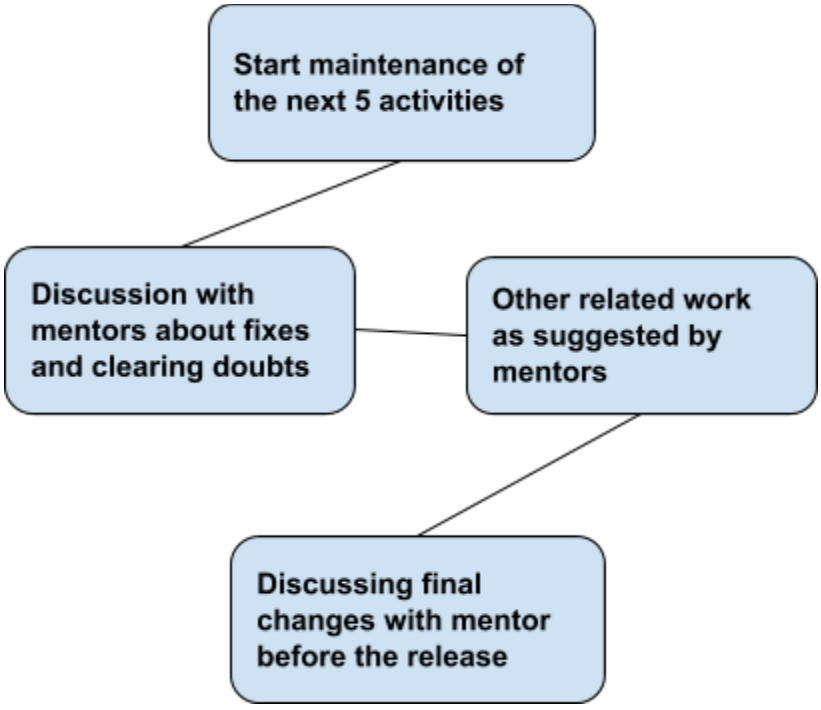


19th June: Phase one evaluation

20th June to 25th June

Release the 5 activities maintained in phase one

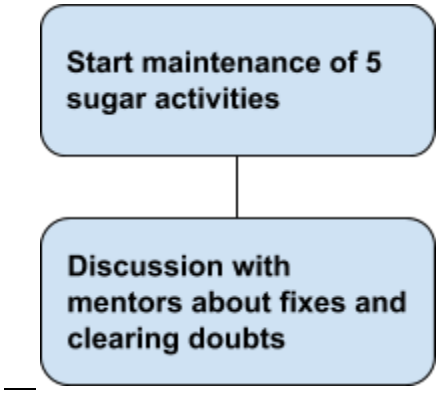
26th June to 5th July



6th July to 10th July

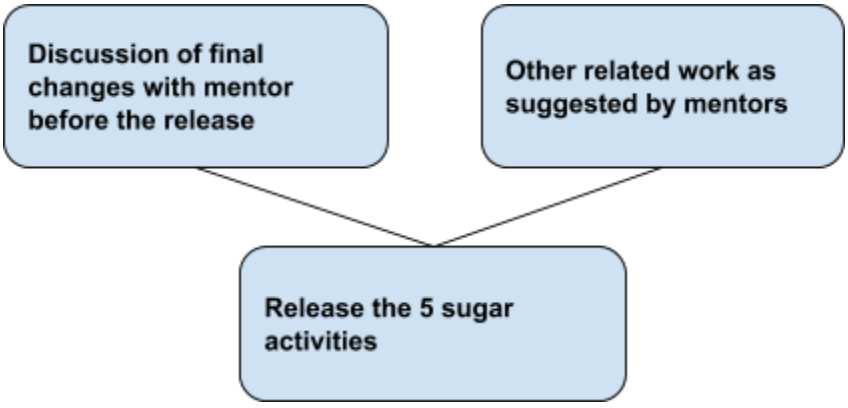
Release the 5 maintained sugar activities

11th July to 17th July

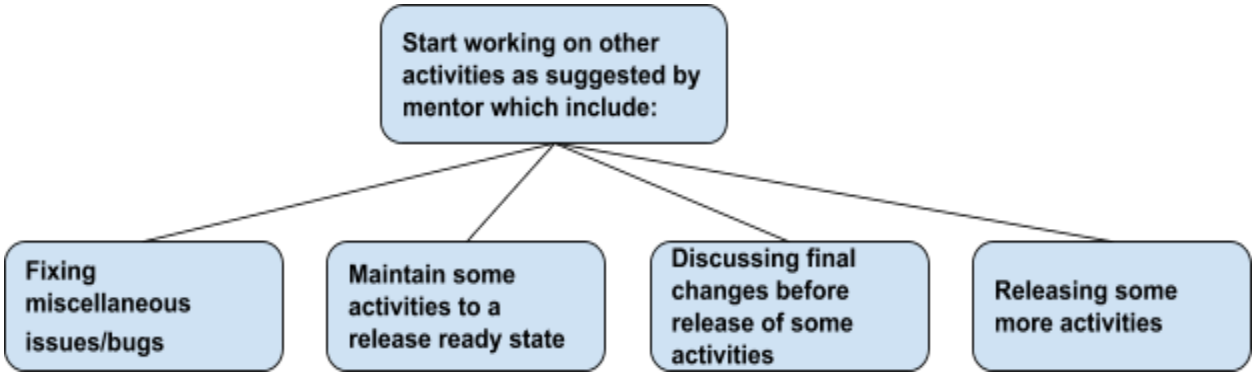


17th July: Phase two evaluation

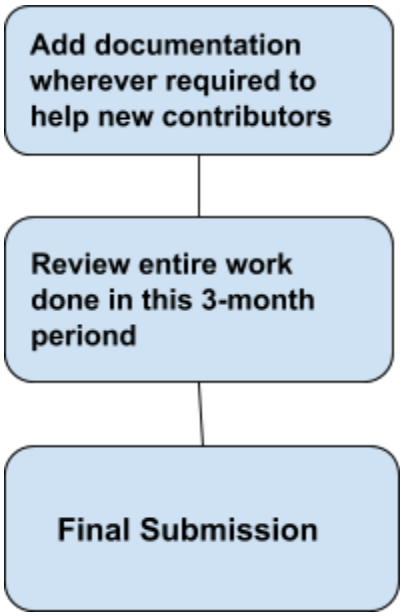
18th July to 30th July



31st July to 9th August: BUFFER PERIOD



10th August to 17th August: Final Week



Final evaluation

After my final submission, I will:

- Discuss my future aspects with sugar labs.
- Discuss future prospects of the activities I have worked on with mentors as well as the community.
- Review from the community regarding the impact of the project.
- Open issues in other activities, on which I will personally work one by one gradually **after gsoc ends**.

Reviewing:

I plan to write weekly blogs about the activity that I have improved and keep the Sugar community updated by posting it on the sugar-devel mailing list. There is also a 10 day buffer period for all those activities which were not released because of testing delay or any difficult bug to solve.

How many hours will you spend each week on your project?

I have my summer vacations starting from 5th May to 15th July, in that period I can easily give more than **45 hours** per week and after college restarts, I will be able to manage at least **35 hours** a week. 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.

Discuss your post-GSoC plans. Will you continue contributing to Sugar Labs after GSOC ends?

As I have already mentioned above about my post-GSoC plans, I will continue to contribute to sugar labs which include maintenance of other activities as the project is only covering 25 activities and there is a lot more to do than that.

I wish to become a member of Sugar Labs and want to attend sugar development team meetings. This way I can contribute here in a much more effective manner and it also gives a sense of belonging to a community.

I also wish to mentor some open-source programs like Google Code-In for Sugar Labs in the future.

References:

- github.com/sugarlabs
- Activities.sugarlabs.org
- wiki.sugarlabs.org/go/Activities
- Help.sugarlabs.org
- Translate.sugarlabs.org
- Bugs.sugarlabs.org