Improve and maintain 15 Sugar activities

2021

Basic Details -

- **Full Name** – **A RAHUL**
- **Email** – f20191312@hyderabad.bits-pilani.ac.in
  rahularlagadda@gmail.com
- **GitHub Username** – **A-Rahul-535**
- **Languages** - Kannada, Telugu, Hindi and **English** (fluent in speaking).
- **Location** - Ballari, India || Hyderabad, India
- **Time zone** - Indian Standard Time (GMT+5:30)

Education Details -

- Currently pursuing **B.E. Computer Science** at **Birla Institute of Technology and Science, Pilani, Hyderabad Campus**.
- Year of Study: 2 (Sophomore Year)
- Languages comfortable: C, C++, Java and Python.

Previous Work -

I. Code

I have completed my first year working on my basic algorithm understanding skills. I had learnt C++ in my intermediate classes (11th and 12th). I had also done a small game in C++ using basic programming concepts.

II. Previous Projects

- ★ **Android Based Application in Android Studio [GroT (Grocery Tracker)]** - In my 2-1 sem, I have done an Android Based Application for tracking the groceries, tracking the bills and dues and maintaining a to-do list with a date and time alarm. The application was done in Java, Google Firebase and Cloud Store.
- ★ GitHub Link: https://github.com/A-Rahul-535/GroT-Grocery-Tracker-

- ★ **Database Project –** It is a database management project and I have chosen Hospital Management as my domain. Database backend is done using PHP MySQL and the GUI part is completely done in Java. The application has facilities of registering new doctors, nurse, receptionist and patients. It keeps track of all the patients and can make appointments for the patient ad doctor by matching the patient's problem and doctor's specialization.
- ★ GitHub Link: https://github.com/A-Rahul-535/Hospital-Management-System-Royal-Hospitals-

III. Previous work on Open-Source

In my freshman year, I got introduced to GitHub and a little Web Development. Since then, I kept myself involved in developing and learning about software. I made it a practice to regularly push my work to GitHub, the contribution map full of green dots really fascinated me and also helped me in reviewing and improving my code from my colleagues. I worked on some small-scale projects to get experience in version control.

Your Motivation -

➢ What is your motivation to take part in Google Summer of Code?

Being a software enthusiast from my freshman year, I always wanted to develop my ideas into applications. My interest in web development introduced me to git and GitHub and ultimately to open source.

In my 1st year in heard about Google Summer of Code from my seniors as many of them were contributing to different organizations. They shared their experiences with me.

In my personal opinion, Google Summer of Code is the best way to learn how to work in an Open-Source community when people from different parts of the world work and build code collaboratively. The remote working policy of GSoC makes it the best program for a student to perfectly spend quality time in his summer holidays.

➢ Why choose Sugar Labs?

Codebase: I am comfortable in working with Python and C++. So I started searching for the organizations having their codebases in these languages from previous GSoC organizations list and found SugarLabs and Chapel as the ones. So, I started going through the codebase of both the organizations and felt that SugarLabs is more suitable for me as the activities that we work on follow a similar fundamental code structure, adding complexity n the use of the activity. This helped me a lot in understanding and getting acquainting with the codebase of SugarLabs.

➢ Software for children

The great purpose of SugarLabs to provide a learning platform to children acts as a driving force for me to work. We feel good when we know that our contribution is for the good of the society. Personally, ours is a joint family with more kids in home, if I get selected for the project, I can proudly show them this platform and tell that I am also a part of this software.

➢ Great Mentors

We also have great mentors at SugarLabs, who are always willing to help to a great extent. Even though I personally don't have much interaction with my mentors, I have heard from my seniors and fellow friends that SugarLabs mentors are very helpful and always respond quickly.

➢ Respect

As I have heard from my seniors, at SugarLabs people discuss and develop as a team, everyone's opinion is given equal weightage irrespective of his/her contribution history.

For these reasons I chose Sugar Labs as he only mentoring organization for Google Summer of Code 2021.

Expectations from SugarLabs after completing the program -

Being my first big open-source project, it might be possible that I make mistakes and do things the wrong way, thus, I expect my mentos to correct me. My expectations are to complete this project successfully and collaboratively.

After the program, I am willing to further contribute to SugarLabs to other project s like Music Blocks and other tasks. So, what I expect is support and collaboration from the community members.

Things I will take into point if I get selected for the program –

- ✓ Be patient to apply every suggestion during a pull request review.
- ✓ Don't just say yes and do something because a mentor says so.
- ✓ My conversation with the team is more than the topic working on, but flows naturally to any topic.
- ✓ Care about the project beyond the specific task you are working on.
- ✓ Care about changes to documentation, tests, releases and issues.
- ✓ Work on a project our community needs, regardless of your personal interests.
- ✓ Don't just fix issues, but also get involved in other people's work.

✓ Don't remain ignorant of our software or what our project does.	I have been working on JAMath activity recently. Moreover, I understand that for SugarLabs to extend support globally, it is important to add good README files even though it seems like a bit boring. Also, I feel testing is an important step to make sure sugar is usable by children, without interruption and errors.
✓ Interested in our community and follow our code of conduct and guidelines. ✓ Never write to a mentor in private unless the mentor has asked for that.	Mailing an entire list of people was surely a new thing for me. I have made sure to reply all when replying to mails. I understand that asking questions on the mailing list is a better idea as it benefits all who might have similar doubts.
✓ Keep working with our community even if you are not accepted. ✓ Don't ask for help to write a proposal.	I really do hope I get an opportunity to be a GSoC participant at SugarLabs. Nonetheless, SugarLabs is a great community to work with. I have become familiar with SugarLabs codebase and look forward to contributing more. It is now easier to contribute, given the familiarity

	with its code and packages.

Note: As I was involved in another project for the past 2 weeks, I wasn't able to completely focus on SugarLabs due to which my PRs are quite less in number but I have gone through the SugarLabs codebase before. My project ends by 1st week of May and from then, I will completely dedicate my time for SugarLabs maintenance and improvisation.

Project Details -

➢ What are you making?

The aim of this project is to Improve and Maintain 15 Sugar activities. Preparing the activities for release, and adding new translations.

➢ Plan for porting the activities to Python3

Steps followed to port activities to Python3-

i. Check if the chosen activity is ported to Gtk+3.
ii. Check if it has been ported to python 3
    - Yes- then make sure "exec = sugar-activity " is changed to "exec = sugar-activity3"
iii. The activity needs to be ported to python 3
iv. First test if the activity is working as expected
    - ❖ Test if all the features in the activity are working as expected. If not, try fixing them before the port to python 3 to ensure that the issue is not due to the python3 port.
    - ❖ Check for errors
    - ❖ Check for noise in the log
    - ❖ Next, check collaboration:
        - The joiner can join with no errors in the log.
        - The activity can be seen as a shared instance in the journal.
        - Check if the same game board is shared and any moves on one game board are reflected in the other.
        - If collaboration between 2 works as expected, test for 3. (optional)
        - If the activity uses collabwrapper, then update collabwrapper with latest changes and then test collaboration again.
    - ❖ Check for Tracebacks and errors or warnings in the logs. If there are, fix them before port.
    - ❖ If it has a collaboration method that uses ExportedGObject then port to collabwrapper before porting to python3.

v. Now check for all other points mentioned in Python-porting-guide
vi. Once complete, retest all the points which were tested for the python2 branch.
vii. Additional Check points:
- ❏ Check for any differences in the display, mostly display shifts or distortions are caused by the differences in how '/' works in Python2 vs Python3. i.e., Check for integer divisions that have become floating points. Other differences in button press and release may also be caused due to this.
- ❏ Check for other changes observed (compare test python2 branch to test python3 branch)

➢ Plan for porting the activities to Gtk+3

Steps I will follow to port activities to Gtk+3-

1. Check if the chosen activity is ported to Gtk+3.
2. If No- follow a test plan to check how the activities are working before the port.
3. Port activities to Gtk +3 by running the pygi-convert.sh bash
4. Fix PyGIWarnings.
5. Check if there are errors by running the activity as sugar-activity. (Most activities which haven't been ported to Gtk+3 is still in python3.
6. After fixing errors, test coverage.
7. Check if there are differences before and after porting.

➢ Plan for updating README.md files -

- Many activities just have a small explanation in their README files, which aren't enough for the new contributors.
- I would like to briefly explain about the activity with images on the activities I would be working so that there is a clear-cut understanding for the outsiders or newcomers when they see the activity for the first time.

➢ Plan for adding more translations (If time permits)-

1. I plan to add as many translations as possible for the languages-
2. Submit translations to https://translate.sugarlabs.org/- English, Kannada and Telugu.
3. Refresh pot file, remove empty .po files and fetch new translations from https://translate.sugarlabs.org/
4. Create a PR and merge.
   - ★ Add translations to those activities first which are ready for release.

How will it impact SugarLabs -

It is very important for SugarLabs to have fully functional and well-maintained activities. This project will provide SugarLabs with 15 well functional activities whose latest version can be released in the SugarLabs organization webpage.

Technologies (languages) you will be using -

Major part of the program will include coding in **Python** and use of **sugar-toolkot-gtk3**, **Pygame** and **Sugargame**.

Development Environment -

- Operating System – Ubuntu Groovy Gorilla 20.10
- Sugar Desktop – Version 0.117
- Version Control – git
- IDE – Visual Studio Code

Activities Selection -

I prefer selecting the exact activities by open discussions on sugar-devel mailing list or discussing with mentors. Since SugarLabs does not maintain any popular activity stats, I prefer selecting activities which have a high pedagogical value. I would put up the activities I think have a high pedagogical value and need to be released as soon as possible on the sugar-devel mailing list. I think taking responses and reviews from people on the mailing list will be more helpful and effective. It is easier to work when the activities which need work are known.

Note: It is difficult to estimate the time needed for activities. Different activities demand different amounts of time and priority to be ported first.

The picture is a screenshot of an excel file which is a sample of how I will be updating my progress. I would like to thank @JuiP for giving this excel sheet idea.

Key: Green- Work completed. Red- Work not done Yellow- Open PRs, to be reviewed, Tested and merged. Blue- Readme does not use markdown.

ACTIVITY	PYTHON3	README	COLLABWRAPPER	GTK+3
Activity 1				
Activity 2				
Activity 3				
Activity 4				
Activity 5				
Activity 6				
Activity 7				
Activity 8				
Activity 9				
Activity 10				
Activity 11				
Activity 12				
Activity 13				
Activity 14				
Activity 15				

My work on all the selected activities will involve solving the following issues:

- Update sugargame
- Port to Python 3
- Port to TelepathyGLib and Collabwrapper
- Add translations
- Port from GObject to GLib
- Activity related bug fixes
- Port from GStreamer Gst.Message.structure to get_structure()
- Address any open PRs

15 Activities which I will be working on will be chosen according to the Timeline (Refer to the Timeline), I prefer not choosing specific activities as the issues and problems which may seem relevant at the moment, might have been fixed later.

Hence, choosing specific activity related issues and planning the work accordingly is a futile task.

Timeline -

17 May, 2021 to 7 June, 2021	• **Review code of activities, keep contributing to SugarLabs, fixing as many issues as possible** • **Have discussion regarding first 8 Activities to be worked on (with mentors on GitHub and on the sugar-devel mailing list)** • **Also, go through the merged and in-progress port pr's to have a better understanding and discuss doubts related to it with mentors.** • **Also go through the comments on merged/closed PRs as the discussions might be relevant and helpful.**
8 June, 2021 to 20 June, 2021	• **Update activities and work on the first 4 (1,2,3,4) activities selected.**
21 June, 2021 to 25 June, 2021	• **Test and fix the errors (First 4 activities)** • **Apply suggestions if required on the PRs opened during 8 June to 20 June**
26 June, 2021 to 7 July, 2021	• **Begin working on the next 4 (5,6,7,8) activities**
8 July, 2021 to 10 July, 2021	• **Test and fix the errors (5,6,7,8)** • **Apply suggestions if required on the PRs opened during 26 June to 7 July**
11 July, 2021 to 15 July, 2021	• **Discussing changes with mentors before evaluations period.** • **Deliverables- 8 release ready activities (1-8)**

--Initial Evaluation (deadline- July 15)

16 July, 2021 to 21 July, 2021	• **Have discussion regarding next 7 (9-15) Activities to be worked on (with mentors on GitHub and on the sugar-devel mailing list)** • **Also, buffer time to complete the work on previous activities (7or8) - if not done before**

	evaluations period.
22 July, 2021 to 2 Aug, 2021	• **Update activities and work on the next 4 (9,10,11,12) activities selected.**
3 Aug, 2021 to 14 Aug, 2021	• **Test the last 3 activities (13,14,15) and apply the required changes** • **Make these activities release ready.** • **Review the entire work done during summers and make necessary documentation.** • **Release activities.** • **Improvements to sugar docs (README files).**
15 Aug, 2021 to 22 Aug, 2021	**Make final submission and discuss future aspects with mentors and the community, which will include:** • **Discussion on porting work remaining to be done other than this project.** • **Reviews from the entire community regarding the impact of this project, for drafting better instances, if required in the future.** **Final Project Deliverables- 15 Fully Functional and Improvised activities.**

--Final Evaluation (deadline- August 22)

If targets mentioned in the timeline are completed before or the timeline leaves me with some free time for some reasons then I will involve myself in:

- Solving general small-scale issues and clearing doubts of newcomers.
- Testing Sugar activities.
- Addressing open PRs by other contributors- testing and reviewing code.
- Porting few other activities to Python3.

Working Schedules -

Due to the COVID-19 situation in India, I'm not sure when my college resumes. As per my college course structure, I will be having my Practice School (Online mode) in summer which is not much a time taking job and thus I would be comfortable to work 5-7 hours per day (for compensating I may also work more like 8-9 hours some days). I want to finish the work before starting of my next sem which will be in the mid-August and start preparing for my Internship Drives and Placements.

Reporting Progress between evaluations -

I would be reporting task related progress via mail or as comments on the PR in GitHub I am working in.

Post GSoC plans -

I am planning to continue working on the project even after the program ends.

I also look forward to writing new Sugar activities.