



Music Block Widget Framework

About Me

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Why SugarLabs?

I am looking for challenging coding opportunities so that my skills can get enhanced and my work impacts the betterment of society. Google Summer of Code 2022 provides the perfect opportunity. After going through the organization list of GSOC 2022, SugarLabs MusicBlocks is a perfect match for me. I have explored other open-source organizations and successfully set up them; however, after reviewing their project ideas and their wonderful community, I decided that I should focus on the SugarLabs project. Once this decision was made and after reaching out to the SugarLabs community, it proved to be a good fit for reaching my project goals. Becoming a part of this fantastic community not only for GSOC but, in the future, is planned. While being very well versed with the application stack that SugarLabs employs will give me a head start in the learning curve, I am also impressed by the sugar work which is dedicated to the children and promotes collaborative learning through various sugar activities and developing their mindset in a fun way.

The Project - Music Block Widget Framework

Synopsis-

In Music Blocks, Widgets are powerful tools that enable users to explore and understand concepts in music, such as rhythm, mode,



temperament, etc. The goal of this project is to develop a new version of Music Blocks (v4) that includes a new and improved Widget Framework. The new framework will be designed to make Widgets more modular, flexible, and easier to develop, and it will be integrated with the Singer API to enable seamless communication between Widgets and the main application.

What it means to accomplish-

1. Develop a Widget Framework that is more modular, flexible, and easier to develop for the upcoming versions of Music Blocks
2. Integrate the Widget Framework with the Singer API to enable seamless communication between Widgets and the main application.
3. Develop a Rhythm Maker Widget that enables users to create complex rhythms.
4. Develop a Musical Mode Widget that enables users to explore different musical modes.
5. Develop a Phrase Maker Widget that enables users to generate musical phrases.
6. Improve documentation and tutorials for Widget development in Music Blocks.
7. Making widgets responsive for all kinds of devices with proper styling

Timeline-

Before the Community Bonding Period(April 4- May 4)

- Contribute in general to SugarLabs.
- Fixing the widget styling and bugs
- Discuss different possible approaches for the project with the mentors.
- Learn More about the technologies used for the Project.

Community Bonding Period (May 4 - May 29)

- Introduce myself to everybody.
- Explore the codeBase and the discussion with the mentors about the enhancement and addition of the new features
- Participating in Sugar activities and meetings
- Identify the issues and discuss them with the mentors

Coding Period

May 29 to July 10	
May 24 to June 1	<ul style="list-style-type: none"> • Refactoring the Existence Implementation • Develop a plan for integrating the new

	framework with the Singer API.
June 1 to June 20	<ul style="list-style-type: none"> ● Implement the new Widget Framework in Music Blocks v4. ● Develop the main Widget window ● Develop a set of example Widgets that demonstrate the capabilities of the new Widget Framework.
June 20 to July 10	<ul style="list-style-type: none"> ● Integrate the new Widget Framework with the Singer API. ● Develop the Rhythm Maker Widget. ● Test and debug the Rhythm Maker Widget.

July 14 to August 15

July 14 to July 25	<ul style="list-style-type: none"> ● Implementing sub-micro components of widgets and testing them ● Develop the Musical Mode Widget. ● Test and debug the Musical Mode Widget.
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July 26 to August 5	<ul style="list-style-type: none">● Develop the Phrase Maker Widget.● Test and debug the Phrase Maker Widget.
August 6 to August 15	<ul style="list-style-type: none">● Fixing Bugs for newly added features● Adding some animation-like features● Working on Final Documentation

Buffer Period - August 15 to August 25

This period is allotted for the finishing of the webpage and in case given tasks are not completed according to the timeline then this time will be utilized in finishing them.

Final Submission-

After the project, a new set of Widgets and a more flexible and easy-to-use Widget Framework for Music Blocks v4, will provide users with powerful tools for exploring and understanding music concepts. The new Widgets will enable users to create complex rhythms, explore different musical modes, and generate musical phrases. The new Widget Framework will make Widget development easier and more accessible, and the integration with the Singer API will enable seamless communication between Widgets and the main application. The project will be completed with testing and debugging occurring throughout the development process and with the proper documentation.

PerExpectation From Mentors


- Help me understand the existing code of Sugar whenever I am incapable of doing so on my own.
- Suggest me some study material to have a clearer view of how things are done ideally.
- Help me come to a decision when I have more than one way of doing things and tell me why that is the best option.
- Take time to review my work and provide timely insight.

Commitments

I will be having my college summer vacation during the GSoC period. So, I can commit more than 35 hours a week which is more than the requirement that Google has suggested. Since I am already familiar with contributing to Sugar and had spent months understanding the codebase, I won't take much time initially to understand the practices and understand the quality of code and work that is needed. The later weeks would be more coding intensive. The plan is detailed enough to allow for any backlogs, especially in the last two weeks

After GSoC,

I would like to keep contributing to SugarLabs and will be available to resolve issues and manage to pull requests. Even if I am not selected this 'year, I would like to help this project by resolving issues, suggesting



new ideas, and participating in discussions. I usually help out people with code and will love to mentor some young coders

Introduction

I am in the third year of my Bachelor in Computer Science Engineering course. Computers especially software part have always interested me. I find myself as a coding enthusiast who is on a journey of learning something new each day of my life and a future full-stack developer. I have always loved working on algorithms and their visualizations emphasizing writing readable code. It has been 3 years since I started programming. I am very comfortable with, Frontend technologies like HTML, CSS, JavaScript as well TypeScript, and also learning ReactJS and in Backend -NodeJs, ExpressJs as well MongoDB for Databases and have also experience in C/C++ and Python. I also have good experience in Git, Javascript, MySQL, and other technologies, and also worked on developing RESTful APIs. My major interest is in Data Structures and Algorithm Design and practicing my coding skills on HackerRank and CodeChef-like platforms. I have also written web application programs and developed websites that are available on my GitHub account. I developed the habit of reading the readme Files and writing code first on paper to improve the efficiency of my work and hence I can write clean and efficient codes. I am looking forward to the challenges awaiting me. In my opinion, the main objective of GSoC is to learn and gain experience, I hope to accomplish that.

Projects And Participations

Schedule Manager

Tech stack- HTML, CSS, JavaScript, NodeJS, MongoDB

A website that helps to make a to-do list

GitHub-<https://github.com/MohitGupta14/TODOList.git>

Unstop Hackathon

Made a Website for DaretoCompete in which users can register themselves in a Particular course of their choice.

Tech stack- HTML, CSS, EJS, JavaScript, NodeJS, MongoDB, ExpressJS

URL- <https://codevita1.herokuapp.com/>

GitHub-<https://github.com/MohitGupta14/codevitaHackathon>

Devpost Hackathon

This project is a part of the Hackathon event organized by devpost which is about the demonstration of the usage of the courier. We have incorporated the courier API and tried to give an easy and single-page approach to sending emails with templates to the desired person using courier API.

Tech stack- HTML, CSS, JavaScript, ReactJS, NodeJS, MongoDB, ExpressJS

Github-<https://github.com/MohitGupta14/Courier-Hacks>

Contributions

Merged PR with Sugar(MusicBlocks) -

- [#3229](#) - Making Take a Tour section Responsive for all types of devices
- [#3237](#) - Fixing the image issue and the functionality of the Movable Do block

Open PR with Sugar(MusicBlocks)

- [#3250](#) (approved) - Implemented Recording Feature
- [#3252](#) (approved)- Implemented Full-Screen Mode

Issues with Sugar(MusicBlocks) -

- [#3233](#) (working) - Fixing buttons in the firefox browser(smartphones)
- [#3255](#)(working)- Working on the implementation of a sound bar to control the audio output

Other - [All Pull Requests](#)



References-

<https://www.sugarlabs.org/>

<https://www.sugarlabs.org/music-blocks/>

<https://github.com/sugarlabs/musicblocks/issues>

This proposal is my second preference