



Project WikiLoop

Google Summer of Code Program 2021 Project Proposal

Personal Details

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University : [Indian Institute of Technology\(BHU\), Varanasi](#)

Country of Residence : India

Timezone : [Indian Standard Time \(UTC +05:30\)](#)

Typical Working Hours : 11:00-13:30, 15:00-20:00, 22:00-02:00
(IST)

5:30-8:00, 9:30-14:30, 16:30-20:30(UTC)

Primary language : English, Hindi

Project Proposal

Title:

Adding Tibetan Calendar in Unicode Common Locale Data Repository (CLDR) and International Components for Unicode (ICU) library

Mentors :

- Elie Roux (Primary mentor)
- Forest Rui Jiang

Primary goals :

1. To create some code for International Components for Unicode ([ICU4C](#) and [ICU4X](#)) Libraries that compute dates in Tibetan calendar.
2. To create a new locale and add some metadata to Unicode Common Locale Data Repository([CLDR](#)) to ensure that CLDR can represent the Tibetan calendars and dates.

During the course of the project our primary focus will be on the two widespread types of Tibetan calendar calculations, [Phugpa](#) and [Tsurphu](#).

Future Goals :

1. To build a polyfill for JavaScript's Intl.DateTimeFormat by converting Tibetan calendar's C Module to WebAssembly using "emscripten", that can directly be used by websites.
2. To add other calendar calculations (References-[link](#)) :-
 - Calculations using modern astronomy.
 - Calendars from Amdo using astronomical calculations from Kepler.
 - Sherab Ling methods
 - Zhonnu Pal's corrected calculations.

Benefits of the project :

- It will provide bo_IN and bo_CN locales with an option to display dates using the traditional Tibetan calendar instead of the Tibetan translation of the Gregorian date as it presently is.
- It will enable the Tibetan calendar to many operating systems, application software and products worldwide, such as Google

Calendar, etc.

Schedule of Deliverables :

I think getting into this program will be a lifetime experience. So, I want to utilize every moment of this program that's why I would like to start working on this project from day one itself. I will be dedicating about 5-6 hours a day and on some days I can even contribute 6-8 hours. I mostly work in odd hours of my time zone, I think this will be beneficial for both of us, as my time of work will match with your time of work.

Project specifications and references : [LINK](#)

Proposed Timeline :

- **May 17- June 7 (Community Bonding):**

During this period, I will remain in constant touch with my mentor. I'll stay active on Slack to discuss and finalize any revisions to the idea.

Thus, with the help of my mentors, I will become absolutely clear about all the goals.

Also, This time will be utilised for:

- Studying extensively about the Tibetan calendar calculations.
- To get familiar with ICU4X and ICU4C dev framework and also to learn to run tests.
- Learn Rust.

- **June 7 - 13 (Week-1):**

This is the first week of the coding period. This week I will start working on the C code. I will extract some code that is important for the date calculation from [here](#) and remove the parts that are used for astrological or astronomical calculations (such as the position of planets, eclipses, etc.) which are not required for this project.

- **June 14 - 20 (Week-2):**

This week will be used to complete the remaining work from week 1 and to organize the code. I am hopeful that by the end of the week we will have completed the C implementation.

- **June 21 - 27 (Week-3):**

This week I'll be testing the C implementation and also I'm going to start working on the Rust implementation of the Tibetan calendar for the ICU4X.

- **June 28 - July 4 (Week-4):**

This week will be used for the completion of the remaining part of the rust implementation. By the end of this week our Rust implementation will be completed as well.

- **July 5 - 11 (Week-5):**

This week will be used to test the Rust implementation as well as to document the testing process.

- **July 12 - 16 (Evaluations):**

- This period will be used to review and discuss project progress with the mentor.
- Prepare a project report on the work done thus far.

- **July 17 - August 1 (Week-7 and Week-8):**

This period will be used to integrate both the C and the Rust implementation of the Tibetan calendar to ICU4C and ICU4X and also for running tests.

- **August 2 - 8 (Week-9):**

This week will be used for creating new locale and for adding metadata to the Unicode Common Locale Data Repository(CLDL). The project will be completed at this time, except for testing and documentation.

- **August 9 - 15 (Week-10):**

A Buffer of one week is kept for any unpredictable delay. In this period first I will make sure that I have completed all the previous milestones and then add documentation for the things added to help new contributors to contribute to the project.

- **August 16 - 23 (Final Evaluations):**

Submit the code for final evaluation with project summary. Discuss future prospects with the mentors.

Continued Involvement :

- I will continue supporting and maintaining the project and also to continue my learning process, I would like to work on other calendar calculations in the future.

Other Commitments :

- I have no commitments in the summer. I'll be staying back home for the most part of it. If I'm selected for GSoC, it will be my only job this summer.
- If I complete this project early. I would be available for any voluntary work that WikiLoop wants me to do.

Academic Experience :

- I am a 2nd year Computer Science and Engineering student at the Indian Institute of Technology (BHU), Varanasi. I am a competitive programmer with a strong knowledge of C, C++, Python. I am also well acquainted with the NLP and Deep Learning .So far, my core subjects have been : -
 - Languages like Python, C, C++
 - Data Structures
 - Design and Analysis of Algorithms
 - Artificial Intelligence
 - Operating Systems
 - Django, SQL and Socket Programming
- My Resume :- [LINK](#)

Will I submit a proposal to another Organization?

No, I will only submit a proposal to this Organization.

Why Me :

- I am a Computer Science undergraduate. My academic curriculum and my personal experiences makes me more fit for the project.
- I think I have the necessary skills required to complete the project.
- Also, I have a good understanding of the project. It is because of the time I have put in it. I can complete the project in a given time.
- I would love to be an active contributor and be a part of the Project WikiLoop community after the GSoC period also.

Why Project-WikiLoop :

- The main reasons why I was attracted to this organization are its motto of helping knowledge institutions preserve their precious knowledge and the Tibetan Initiative of the Organization for the Preservation of Valuable Tibetan Literature and Buddhist Heritage.
- Also, because of the efforts that the organization makes to advance the Tibetan language NLP to assist millions of Tibetan speakers worldwide.

Thanks for reading! :-)