

Proposal For Google Summer Of Code 2012

My details:-

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Location (City, Country and/or Time Zone): Kolkata, India, GMT + 5hrs 30mins

Project Title:

New Visual Keyboard for Bengali

Synopsis:

Now-a-days many popular Bengali keyboards follow a non-visual style of typing. It means the way a character is typed on screen is not the exact way it is displaying on the output field. For example, if we need to write কি, we do not write it as ি and then ক. Rather we have to type it in as ক and then ি and then the rendering engine rules displays it as কি. There are many rules like this one. With the help of these rules and input methods, a new visual keyboard will be designed by me.

Motivation for this Proposal:

Since my mother tongue is Bengali, I have been into this language from birth, but it saddens me as to how this language is not known to many. By doing this project I want to make everyone aware of Bengali. Many people require writing in Bengali different things daily. To them it will be perfect. Just they need to use this keyboard to type in Bengali and bingo, they get it!!

How many hours per week can you commit to the project? Do you have other obligations between May and August ? Please note that we expect the Summer of Code to be a full time, 40 hour a week commitment:

Since my college will be off from 7th May to 23rd July, I will be staying at home and will be able to give my whole time to this project everyday i.e. from morning 0930 hrs to evening 0800 hrs if not more. And during my college hours I will be able for work from 1900 hrs to 0100 hrs every evening. So, I will be able to give plenty time to this project.

Are you comfortable with virtual communication using English as the primary language:

I am absolutely comfortable with virtual communication using English as primary language since I am a passed of a reputed English medium school. From my childhood days I have been conversing in English, though my mother tongue is Bengali.

Implementation details of the project:

Starting with the project I will design my input method first. I thought of making a 4 bit code/Unicode where I will make a table and store the key's in the table. While accessing the keys I will use the codes. For example, The smaller version of the table will look like this

ৱ 09E1	ঋ 09F1
৺ 09E2	঳ 09F2

Two columns are there, namely 09E and 09F. And, two rows are there, namely 1 and 2. All the vowels will be in 1 row or column depending on its use. These 09E2 etc. etc. will be used as codes for the key letters mentioned. Therefore all the keys in the keyboard layout will be mapped to it corresponding code and will be sent to the rendering engine for applying various rules. The rules would be implemented. There will be various rules. Firstly, I have thought of making a buffer/a passby safe to store codes which are, at that very instant, not necessary. Solving the ঙি thing, I thought of doing this. Whenever, we account for a consonant key, its code will be checked, and if comes out to be true, i.e. a consonant, it will be stored in a buffer. Now the next key will be accessed, if it's a vowel again, then first the vowel will be printed in the output stream i.e. ঙি and then the consonant will be printed, i.e. ঙক and it will be deleted from the buffer and stored in the copy buffer for checking of deletion or backspace key. Also in case of ঙ and ঙি vowels, we will print a new key as it will be printed across it.

Now for the juktakkhor thing, if two main consonants appear one after the other (main consonants I will store in a single column so that it's easier to check whether they are main consonants or not), the first key will get printed and then for the 2nd key different rules of printing will apply for different keys, possible identifying the juktakkhor by pressing the shift key or not.

Now, if we find a "." (full-stop) anywhere in the code the "।" (dari) key will be printed.

In this way, rules will be made. Another rule of backspacing and deleting, during storing the vowel or consonant in a copy buffer (another buffer for temporary storage when the key has been passed from the buffer to the output stream) I will check whether the user has pressed the key backspace or not. If yes, then the key from the copy buffer will be deleted and its copy from the output stream will be deleted alongside it. Similar will be the concept of delete key.

After designing all these algorithms for the rules, I will implement it in the actual code alongside the input methods of keys and codes and will test my code. And I will better the code during future use of the software.

Tentative Timeline/Phases/milestones (in weekly intervals until 2 weeks after the end of GSoC):

- April 23rd - May 21st (28 days) – Bonding with the community more and more. Going through the implementation details.
- May 21st – June 10th (20 days) – Designing the input details and drafting some rendering rules algorithms.
- June 10th – July 13th (33 days) – Designing the algorithm and coding the algorithms for implementation.
- July 13th – Mid Term Evaluation date.
- July 14th – July 29th (15 days) – Writing and completing the whole code base of the project.
- July 30th – August 20th (21 days) – Checking finer details. Fine tuning the code base. Documenting the whole project.
- August 20th – Pencil's down date.
- After that will check out the review from community members. Work on all the bugs they point out. Will continue to bond myself with the community and work further with this organization's projects.

Let us know who you are:

I am a student of 3rd year pursuing my B.Tech in the department of Computer Science and Engineering from National Institute of Technology, Durgapur. I am a pass out of Don Bosco School, Liluah. I am FOSS enthusiast and most of the times live in the open source world. In my college, I conducted FOSS festival named Mukti for 2 years bringing in some reputed speakers from many places to spread the message of FOSS and develop new things. This will be my first major experience in the open source world and I want to fully dedicate myself to it for the success of this project. I have a good knowledge of C/C++ as I am a CSE student. Also I have a fair knowledge of qt as I started learning it last year, but didn't implement it anywhere till date.