

SMSing Software for Nepali

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Abstract

This document is a research report on the SMSing software for Nepal conducted by Madan Puraskar Pustakalaya in collaboration with Kathmandu University. The whole localization process had been divided into two phases, research and development. This document provides an overview of the activities conducted in the two phase thus giving a broader picture of the SMSing software development.

1. Introduction

Localization has been a popular movement in Nepal lately from the software development perspective. With the localization of the operating systems for PCs, now the focus is on localizing handheld devices like the PDA and the mobile devices. The research and development of the SMSing software for Nepali is an attempt in this direction. As with any research and development projects, the development of the software has been fully guided by research, exploring different existing approaches, switching to one approach followed by another as per need. In the following sections of the document, we would be briefly summarizing the different approaches and research work conducted.

2. Different Approaches used in Nepali SMSing Software Development

Three different approaches were used in Nepali SMSing software developed. An overview of each of the approaches is presented below:

2.1. Bitmap font approach

The first approach used for Nepali SMSing software development was the bitmap font approach. Under this approach, J2ME polish was used to create bitmap font via true type font. Preeti font was used for referencing the glyph set for Nepali characters. Since this first approach was basically intended to develop

and store messages, thus "pre-stored messages" which would be sent at a later time and date, the most commonly used characters in the most commonly exchanged messages like good wishes, festival greetings and so on were analyzed. Later as individual images of these characters were developed, the images were matched to certain English characters. The greatest limitation of this approach was the possibility to just send pre-stored images and not facilitating real time composition and sending the messages.

2.2. Unicode based approach

Rather than being able to send just the pre-stored messages, the unicode based approach for the development of the SMSing software for Nepali provided the additional facility of real time composing and sending messages. The Unicode support in JAVA and the support for Unicode characters in J2ME platform was utilized in following this approach. Each of the keys in the mobile was mapped with a certain Nepali Unicode character. If a key is pressed then it displays a Nepali character. And a fixed time interval (1500ms) has been set within which if the same key is pressed then another character is displayed in accordance to the key mapping. Since such a single key gives the instance of different characters, this is exactly similar to the procedure of typing in English. For the utility convenience, each five Nepali Unicode characters, in a chronological order, was mapped with a particular key.

The major drawback using this approach was that while testing the application on real mobile device, Nepali characters were not displayed.

The real mobile device can take single type of font by default. If Unicode is used, then Unicode has to be converted into GDR font first if font rasterizer for given font if not present] before uploading it in mobile. But due to the unavailability of such system for converting Unicode into GDR font, the approach was left although the preliminary results of testing in emulators were encouraging.

2.3. Drawing Text Approach

The third approach or the drawing text approach makes use of the technique of trying to make the SMSing software, mobile independent. Since this approach initially draws the glyph of each Nepali character, then after displays on pressing a particular key, the initial requirements as required in other two approaches like Unicode support, high memory for storing the glyphs etc. are not required. The only thing that it would require is JAVA support in the particular mobile device.

In this approach, we used canvas to draw the Nepali characters. Each Nepali character, drawn, is mapped with a certain key on mobile device. For simplicity, each five Nepali character has been mapped with a single key (for now) and a fixed time interval (1500ms) has been set within which if same key is pressed then another character is displayed in accordance to the mapped key. The memory required to store the glyph of each possible Nepali character is at most 130 bytes whereas in the case of bitmap fonts, for just about 30 glyphs, about 40KB was required.

Keeping into consideration the wide possibility of installability of the software in mobiles of different platforms with Java support (MIDP 2.0 CLCD 1.1, 1.0), a more user-oriented set of features have been developed for the proposed SMSing software for Nepali. These include:

- Storing typed messages in outbox and sending it at some later time.
- Saving the incoming messages in inbox.
- Adding templates in messages.

3. Testing of the Software

Testing of the software has been basically done in the available emulators of mobile having JAVA support. Details on the testing would be covered in the test document. Besides, testing on emulators, real mobile device testing also has been tried for instance with Nokia 6600. Testing on other models of mobiles with JAVA support is yet to be done.

4. Conclusion

The research and development of the SMSing software has been purely research based which is justified by the exploration of different approaches and finally deciding to the one with wide application coverage. The software developed has big perspective from the view of mobile localization.

5. References

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