

J-033

The Design and Development of Romanized Myanmar Input System for Mobile Phones

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1. Introduction

In Myanmar, the number of mobile phone subscribers is increasing year by year. For GSM mobile phone users, the number hits 392,800 in 2008, up from 211,812 in 2007. Especially in rural areas with poor ICT infrastructure, mobile phone is the best communication tool because it can be recharged even from car battery and requires no wired connection. It is expected that the diffusion of the mobile phones will become faster than that of personal computers.

However, Myanmar language input methods implemented in mobile phone bear no commonness and pose difficulty for the user to memorize the character arrangement. As a result, more efficient input method, which is very easy to be used by user without IT knowledge, is necessary. This research introduces Romanized Myanmar language input system in which user type pronunciation of words with Roman script, instead of typing original Myanmar spelling of words [1]. This method is an interactive system and similar to Kana-Kanji conversion, through which user chooses the correct one from the list of candidates.

2. Romanization of Myanmar Language

It is very difficult to show accurate pronunciation of a word in Roman character. And there are many differently spelling by users of different sex, age, region, educational level and English proficiency. Transcription method (IPA) is used to make Myanmar word readable for non-native speaker but it is not widely used in daily life as many special symbols are introduced and the knowledge of phonetics is needed.

3. Concept and Design of the System

The concept of the system is to input the pronunciation of Myanmar syllable, that user is thinking in Roman script. The system will go and match the appropriate Myanmar syllable from the database. If the system finds out the corresponding syllable or syllables, it will show all the possible Myanmar syllables in the selection menu as a list of candidates. So that, user is able to select the right combination from the candidates appear on the selection menu as shown in the figure.1. The system is mainly composed of Input/Output, Database, Matching Process and Interface (mobile phone environment).

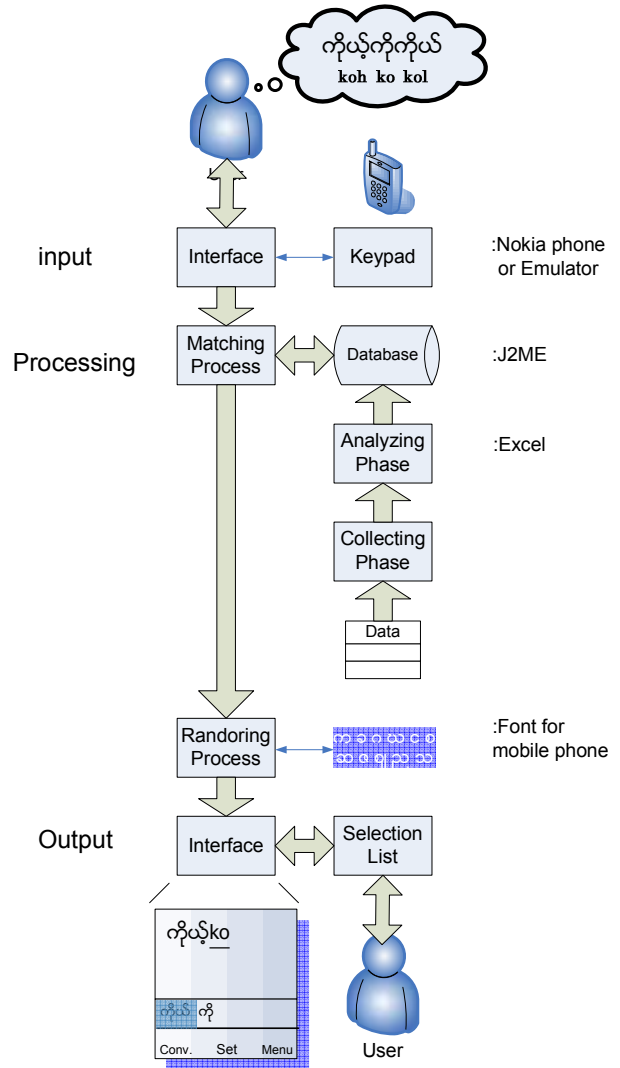


Fig.1 Design of Romanized Myanmar Input System

4. Database

As the Romanized spelling of Myanmar language varies by user, a survey on most frequently used Myanmar syllables is done by using the algorithm of Myanmar syllable breaking [2]. And the priority of the syllable candidates is decided by probabilistic method on collected data [1]. The syllables are stored in the database by order of bigger priority.

4.1 Improvement of Database Structure

As the database is based on top 300 frequently used Myanmar syllables, there are some syllables that

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cannot be input in this system. In order to solve this problem, syllables which are not included in the database are input by using the data from Romanized Myanmar table for consonant and Romanized Myanmar table for vowel as part of them shown in the table.2. They are created by dividing syllable into consonant part and vowel part.

Table.2 Table for consonants Romanization

Table of Consonants		Table of Vowels	
Roman	Myanmar	Roman	Myanmar
A	အ	a, ar	ာ
B	ဘဝ	aik	ိုက်
C	ခစဆ	aing	ိုင်
D	ဒဓပညသတ	an	.
Dh	ဗညသ	an	န်
G	ဂယတ	an	မ်

There are 27 pairs for table of consonants and 47 pairs for table of vowels. By using the data from the tables, we can create the syllables by using rule based conversion method covering most of the Myanmar syllables.

5. Prototype Development

We have developed simulation program coding with Java Platform Micro Edition Software Development Kit 3.0 (J2ME) [3]. There are many simulation platforms for mobile phone for instance Microsoft Visual Basic .Net, Android Software Development Kit and iPhone Software Development Kit. In this research, J2ME is used as it fully supports Symbian OS which is built in Nokia mobile phones which has the largest share of mobile phone in Myanmar.

5.1 Environment

In order to be appeared Myanmar font in emulator, Myanmar font has to be installed by editing properties file of appropriate emulator. In this prototype, MyaZedi Myanmar Unicode [4] which is available freely is used.

5.2 Process

As the system is in Romanized input, user has to select the input method to Roman characters from the Menu bar at the right bottom of the interface. Then input the pronunciation of Myanmar syllable and select “Convert” from the Menu bar. The screen shifts to the next and possible candidates are appeared in the list. User selects the right Myanmar syllable and it will be appeared in the textbox as shown in the figure 2.



Fig.2 Interface of the Prototype

6. Conclusion and Future Works

In this paper, we have created the simulator of the Romanized Myanmar input system for mobile phone based on J2ME environment. We can say that user only need to type in and select but not to memorize the key layout by using this input system. Evaluation and Comparison with other input systems are going to be done to know the merit and demerit of the system.

References

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