College of Engineering, Pune - 5

Dept. of Computer Engineering and IT

B.Tech. Project: VII Semester - Progress Report

Localization of linux

Deepti Agrawal
Computer Engineering
deeptiagrawa@gmail.com
Roll no: 702001

Pradnya Gudikandula
Computer Engineering
gpradnya320@gmail.com
Roll No: 702021

Ankit Gupta
Computer Engineering
ankitgupta191@gmail.com
Roll No: 702023

Faculty Advisor: Prof. Abhijeet A.M.

Abstract

The main idea of the project is localization of linux in Marathi. Computer users may or may not know the English language. So there is need of adapting the computer softwares to local languages and also to make changes to the applications where there is no local language support. The main purpose of the project is to study and make changes in the softwares which do not have local language support. The main concern in localization of linux today is the available standard keyboard layout. Many users find it difficult to get used to the layout available. Hence we are currently working on the dynamic keyboard layout. It helps the user to assign the devanagari letters to the available US keyboard layout and use it as per their convenience. It also uses various combination of functional keys to get all the possible devanagari letters.

1 Introduction

Many people in India are currently excluded from computer use, the Internet, and the World Wide Web by absence of software in the language, which majority of Indians speak. Availability of local language software will play a crucial role in the process of taking the benefits of Information Revolution to the local community. In this way we can also prevent the restriction of resource usage. Developing a local language interface at an operating system level is considered better than developing it at an application level as the former enables us all the applications running on the top of the operating system to inherit the interface. In the recent years there has been lot of development going on for the Localization of Linux software. For languages like Malayalam there is much work done and going on too. We feel that there are some improvements and contributions that

can be done to software for porting it to Marathi. Taking into account the development being done in the Indic Language Support for Linux, we feel that there is something which we can contribute. So we are going to work on the keyboard Layout Manager. The problem that is being faced by people in the use of these applications is that we are not able to render complex scripts like Devanagari in the proper way. This is one of the tasks of our project. Later we also plan to develop more support for Devanagari script in Linux. [1, 2].

2 Motivation

The main motivation behind this project is to contribute towards development and spread of Open Source. There is no support for the local Indian languages like Hindi and Marathi in common Linux applications like gnome-terminal and vim-editor. Also there is no user friendly open-source keyboard layout manager for indic languages available today. We were also inspired by the fact that by doing our part we will make it more user-friendly and useful for community as a whole.

3 Literature Study

Developing a local language interface at an operating system level in a project titled Localization of Linux Operating System was initiated at CDAC, Mumbai (formerly NCST, mumbai) under the TDIL Programme with the following objectives: 1. To enable Hindi at system level using Unicode encoding and Open Type font technology in X Window system -a dominant GUI on Linux. 2. To enable Hindi in various existing applications which are distributed in standard linux distributions. 3. To create Hindi locale in X Window system with Unicode support. 4. To enable Hindi in standard utilities like editors and browsers. 5. To develop an Indic Script Shaping library to enable script shaping for Hindi. The main objective of this project is to design a localized user friendly interface at the system level, which look more natural to the local user and also to localize suitable components within Linux OS (like GNOME desktop environment) to enable applications to create, edit and display contents in Indian Language.

4 Approach

We have thought of creating a dynamic devanagari keyboard layout using python. Though devanagari keyboard layout is currently available but is not standardized and hence very cumbersome to use as different applications use different layout such as bolnagari or devanagari. Hence users can make their own layout as per their convenience and use it efficiently with all the applications. This can also increase the number of people who don't know english but only their local language. 1. Assigning devnagri letters to keys available on keyboard and to combination of keys as per users requirements. 2. Assigning key codes to the keys as per particular devnagri letters assigned by a user. 3. Saving keyboard layout for future use.

5   Work Progress Report

A basic tool has been developed which displays a GUI which has two combo boxes and four check boxes and a submit button. 1. Out of the two combo boxes one box is for key as shown on the keyboard and the other box is for selecting the devangari letter. 2. By clicking any of the checkboxes we can have a particular key combination of that functional key and the key selected in the combo box. 3. After assigning all the keys with the corresponding required devangari letter we can click the submit button. 4. After doing that it will create a file named in which can be put in the /usr/share/xkb/X11/symbols directory which contains all the other available layouts 5. After this the user is asked to restart the machine after which will enable the required layout.

6   Conclusion

After successful implementation of our objective we will be able to create a very user friendly keyboard layout manager for devnagri script. This will increase the usability of these applications in India among people who are not well versed in English. Also this will help other developers who are working on internationalization of Linux into other complex languages.

References

[1] http://ubuntuforums.org/.

[2] http://indlinux.org/.