



a) System Software

5.5.1 An Architecture For The Shaping Of Indic Texts

S.P. Mudur, Niranjana Nayak, Shrinath Shanbhag, R.K. Joshi, *Conference/Journal Computers & Graphics Vol. 23, Number 1, February 1999*

Abstract

This paper is primarily concerned with the shaping process needed at the kernel level of the operating system so that software systems can include support for enabling Indic scripts. The shaping architecture and computational process described are based on over two decades of work in trying to build basic support for Indian languages in computer systems. We first present the basic phonetic nature of Indian scripts and the unique characteristic nature of writing in Indian languages. Next the computational process of shaping and a general architecture for its implementation are described. Finally the specific implementation for Unicode encoded texts displayed using TrueType Open fonts is briefly presented.

5.5.2 Evolution Of Indian Language Localisation Support In Linux

S.P. Mudur, Vinod Kumar, Keyur Shroff.

Abstract

In this paper, we present a case study of the process adopted to evolve open source software for providing Indian language localisation support in the Linux environment. The paper first presents briefly the localisation problem and the requirements for handling Indian languages. This is followed by short descriptions of the software development process, architecture, design, review, testing and release procedures that have been used.

5.5.3 Indic Script Processing Under X11

S.P. Mudur, Keyur Shroff, Rekha Gaur, Vinod Kumar, Yogesh Ketkar, *Conference/Journal Symposium on Translation Support System (STRANS-2001), February 16-17, 2001, Kanpur, India.*

Abstract

The processing required to display Indic scripts has been shown to differ significantly from that for the English language. Mudur et al. have recommended an architecture for handling Indic scripts. X11 has a client and server architecture with functionality and state distributed between them in such a fashion that the user gets a good response with minimal network traffic. The X11 architecture is in sharp contrast with the Microsoft Windows architecture where the client server separation of the GUI is absent. When the Indic script processing architecture is merged into the X11 architecture, the philosophy of X11 suggests that the architectural blocks including state and processing

be migrated to the most appropriate point close to the server input output or to the client's processing program. We carry out this design exercise for the Indic architecture on X11. We also describe the implementation which is at an advanced stage.

5.5.4 An Integrated Software Environment For Localization

Rekha Sharma, Keyur Shroff, S.P. Mudur, Parvati Rajan., *Conference/Journal International Conference on Computer and Communication (ICCC-2002), August 12-14, 2002, Mumbai, India.*

Abstract

A major factor impeding localization is the less known fact that much like software development, localization is a very human intensive task covering the entire life-cycle of a digital system - from conception to retirement. The primary contribution of this research is the design of an integrated environment that will help ease this problem to a reasonable extent. This paper first presents the localization problem showing why it is human effort intensive. The localization process is then sketched. This is followed by a description of the integrated localization environment, including tools and activities covering the localized product life cycle. The paper concludes describing the efforts in progress towards the creation of such an environment within the Linux platform, including a brief description of sample tools developed by the authors as part of this development - OS level support for enabling Indic scripts and an electronic glossary of GUI terms that can assist in the automation of localization.

5.5.5 Development Of A Bilingual Electronic Glossary For Automated Assistance

Rekha Sharma, Keyur Shroff, S.P. Mudur, Parvati Rajan, *Conference/Journal Symposium on Translation Support System (STRANS-2002), March 15-17, 2002, Kanpur, India.*

Abstract

An important aspect of localizing the user interface of any interactive application in a computer system is the translation of a large amount of text, usually English language text, consisting of words, phrases and sentences that occur as part of the interaction. Automated assistance in the generation/translation of these text items would enable and encourage more localization efforts. In this paper, the authors describe a bi-lingual English-Hindi electronic glossary that can be used to provide such automated assistance. The glossary has been derived by sifting through the user interface resource files in the Linux platform and a number of common desktop applications operating on a number of GUI systems. A simple text generation scheme is embedded into the glossary making it simple to use, extensible and scalable to other languages as well.