

Java-based Tamil User Interface for Mobile Devices

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1. INTRODUCTION

This paper presents a Java-based tool(J2ME - Java 2 platform, Micro Edition) namely 'Tamil User Interface for Mobile Devices'. This tool supports using Tamil text in Java-enabled mobile devices.

It has the following features:

The tool makes it possible to use Tamil in mobile devices without the need to download the fonts or plugins or software to the device. This tool is developed for interactive web applications (Messaging & Mobile commerce) in Tamil for mobile devices. This supports Tamil text input & display in any java-enabled mobile device.

2. IMPLEMENTATION DETAILS

The development of this tool is based on Java 2 Platform Micro Edition(J2ME) and the MIDP/CLDC specifications.

Connected Limited Device Configuration(CLDC) outlines the most basic set of libraries and Java virtual machine features that must be present in each implementation of a Java 2 Platform Micro Edition(J2ME) environment on highly constrained devices.

The Mobile Information Device Profile (MIDP) is a set of Java™ APIs which, together with the (CLDC), provides a complete J2ME application runtime environment targeted at mobile information devices, such as cellular phones and two-way pagers. The MIDP specification addresses issues such as user interface, persistence storage, networking, and application model.

The MID Profile provides a standard runtime environment that allows new applications and services to be dynamically deployed on the end user devices.

Since the Tamil User interface tool presented is developed based on J2ME specification, it will work on smaller handheld & highly constrained devices having the following characteristics :

- battery operation
- very constrained memory
- limited processing power
- low bandwidth, high-latency network connections

3. SYSTEM OVERVIEW

The system consists of 2 components:

1. Font Renderer
2. Java Tamil Text components

Tamil text components calls the font renderer to render the Tamil text. The font renderer downloads the the font resources from the server and displays the tamil text as per the component's request. The font renderer has a built-in memory cache which is used for storing the fonts locally. This also makes sure that fonts are downloaded only once per session.

4. FEATURES

(i). The tool ensures that Tamil text can be correctly viewed by anyone, anywhere, irrespective of the mobile device type and the microbrowser.

(ii). Remote Font Delivery Mechanism

Fonts are encapsulated with small memory foot print, allowing them to be shipped over the network in the minimum amount of time using the standard network utilities and protocols.

(iii). Users can view the Tamil text without installing any addon's in their devices.

(iv). The system is optimized for memory and performance to satisfy constraints of the local system.

(v). The tool uses the Tamilnet-99 bilingual standard fonts.

5. CONCLUSION

This tool is targeted for J2ME/MIDP 1.0 compatible devices such as Motorola iDen i85s, Motorola Accompli 008, and future Siemens and Nokia models which are announced as MIDP compatible.