# Project Proposal:
# Developing an Omega Package for Malayalam

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## 1 Developer

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## 2 Scope of the Project

Malayalam is one of the oldest languages in the world. This project aims to develop a complete package for Malayalam typesetting with the "Omega" system developed by John Plaice and Yannis Haralambous.

## 3 Existing Packages for Malayalam Typesetting

Currently, the only TEX based method available for Malayalam typesetting is a package for LATEX written by Alex A. J.

### 3.1 Problems of This Approach

There are many problems with this package which are listed below:

1. The input mechanism is based on an ASCII transliteration scheme which makes it unsuitable for large-scale work
2. The source file must be pre-processed by an external program to make it readable by LATEX

### 3.2 An Omega-based Approach

This project aims to develop a complete Omega package for Malayalam typesetting.Unicode is the solution for non-Latin (multilingual) documents and Omega is designed to take Unicode input. Unicode text can be efficiently stored in utf-8 format. So utf-8 format will be preferred by the proposed package.

## 4 Package Architecture

The main component of the package is a set of OTP[1] files. Omega uses the unicode standard as its input method. OTP files contain necessary information to map each unicode character to a particular glyph in a given font file. They also contain ligature information in which a group of unicode characters is mapped to a single glyph in the font file. OTP's must be compiled to generate OCP[2] files as Omega cannot read OTP's directly. Each font family available with the package needs its own set of OTP files.

The next component is a style file which contains language-specific information. It defines aliases for the OTP's and describes several *ocplists* for different font families. The style file also contains information about various font families available with the package.

The package also contains TFM[3] files for each font file and several map files for PDF generation.

## 5 Project Modules

The project is split into three modules.

### 5.1 Module 1: Development of the Omega Package

This module is concerned with the development of the style file, OTP's and other related files to be used with Omega.

Expected duration: 3 months

### 5.2 Module 2: Support for Type1 Fonts from CDAC

"ISM Publisher" by CDAC, Pune is one of the best solutions for Indic typesetting available today. The package includes a large collection of professional quality Malayalam Type1 fonts. These fonts can be easily adapted for use with Omega.

The objective of this module is to generate the necessary files for using the Type1 Malayalam fonts from "CDAC ISM Publisher" in this package.

Expected duration: 1 month

[1] Omega Translation Process
[2] Compiled Translation Process
[3] TEX Font Metrics

### 5.3 Module 3: Technical Documentation

Detailed technical documentation will be written explaining the effective usage of the package.

Expected duration: 1 month

## 6 Development Platform

Sarovar.org will be used for hosting this project. The facilities available for source code versioning, package release and versioning, and project website will be utilized. The discussion forums and bug reporting and tracking tool will also be used for bug-fixing, maintaining and further improving the package. The mailing list facility provided by Sarovar.org will be used to interact with users and for getting feedback.

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