Web User Interface of AnglaBharti
CDAC,Kolkata

Abstract

This paper describes the development of some modules which has served as the user interface that is used by AnglaBharati Machine Aided Translation (MAT) System. In this paper we present the functional aspects of the Web User Interface (WUI) in terms of software perspectives. Each functional module is briefly described for better understanding. This paper may be an important motivation for future developments of Graphical User Interfaces(GUI) related to translation and alike services.

Introduction

Broadly speaking, a user interface is the system by which people (users) interact with a machine. The user interface includes hardware (physical) and software (logical) components. User interfaces exist for various systems, and provide a means of:

Input, allowing the users to manipulate a system, and/or Output, allowing the system to indicate the effects of the users' manipulation.

The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals—what is often called user-centered design. The design process must balance technical functionality and visual elements (e.g., mental model) to create a system that is not only operational but also usable and adaptable to changing user needs.

Web-based user interfaces or web user interfaces (WUI) are a subclass of UIs that accept input and provide output by generating web pages which are transmitted via the Internet and viewed by the user using a web browser program. The appeal for a good web interface was always a requirement for us to deploy our translation system over the network and also to facilitate the translation system to reach the masses. Keeping in mind the above design principles the AnglaBharti Web User Interface was developed. The interface was built based on a Client Server architecture featuring web pages that runs on client browsers to interact with server side services to get translations.

Web Interface

The Web interface developed for AnglaBharti system is the online version of AnglaMT Desktop application to provide translation from English to Indian languages like: Bangla, Malayalam, Punjabi and Urdu.

The Web User Interface consists of three modules:

I) Registration: First time users have to register themselves for using the system. (System needs a user to register itself for using it for the first time.) After successful completion of the Registration Process, a reply mail will be sent back to the user with his allotted Password. The user can then login with the allotted password.

II) Translation: The Translation process has two parts: I) text translation II) file translation (file based translations will be mailed back to the registered user). User can get output either in the target language or in INSROT or Devnagari encoding.

III) Evaluation: This is an optional step (can be skipped), where user can give ranking (in a scale of 1 to 4) to translated output against each input sentence
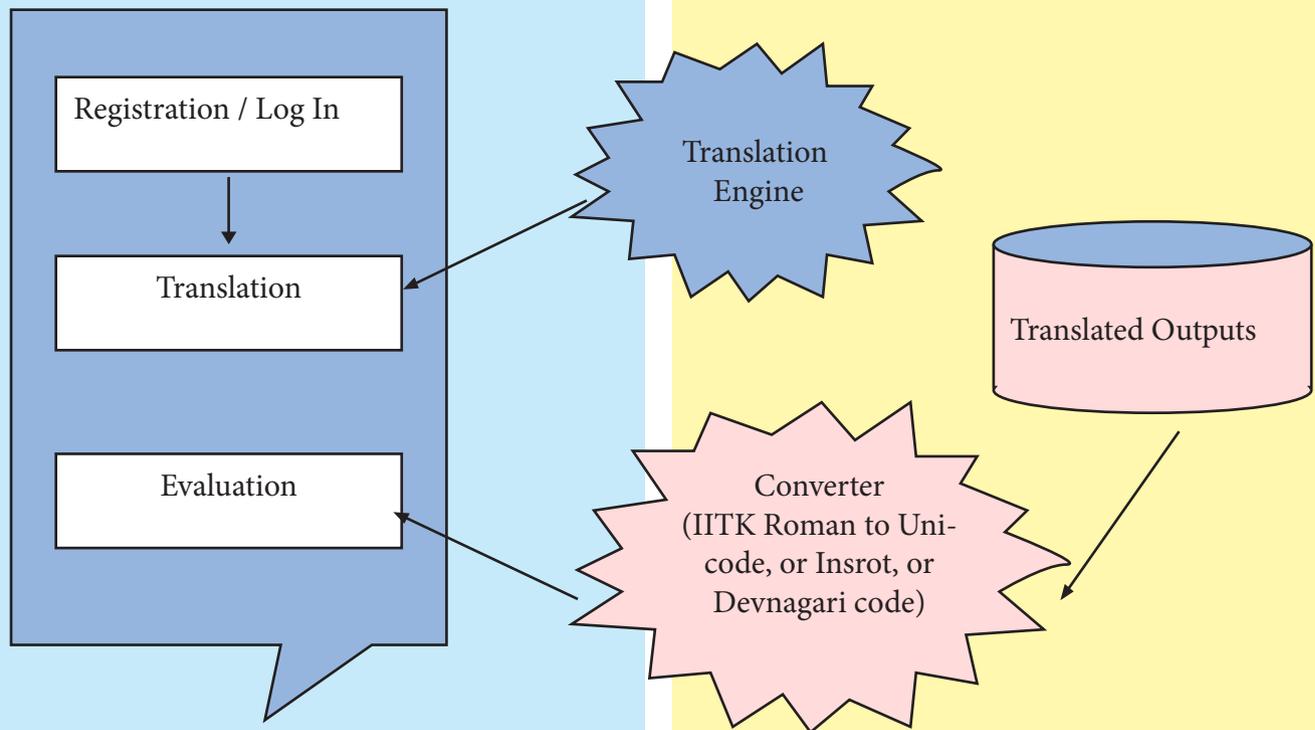

| Registration / Log In |
| Translation |
| Evaluation |

Translation Engine

Translated Outputs

Converter (IITK Roman to Uni-code, or Insrot, or Devnagari code)

Figure 1: Overall diagram of Web-based Machine Translation System

Registration

This is a mandatory step (only for the first time). New user has to register after submission of sufficient details. Password will be mailed back to the given email address. In future he can change password of his own using "Change Password" option. "login" and "registration" have the CAPTCHA protection to restrict automated user creation and login. User may get new password through mail if he forgets the old one.
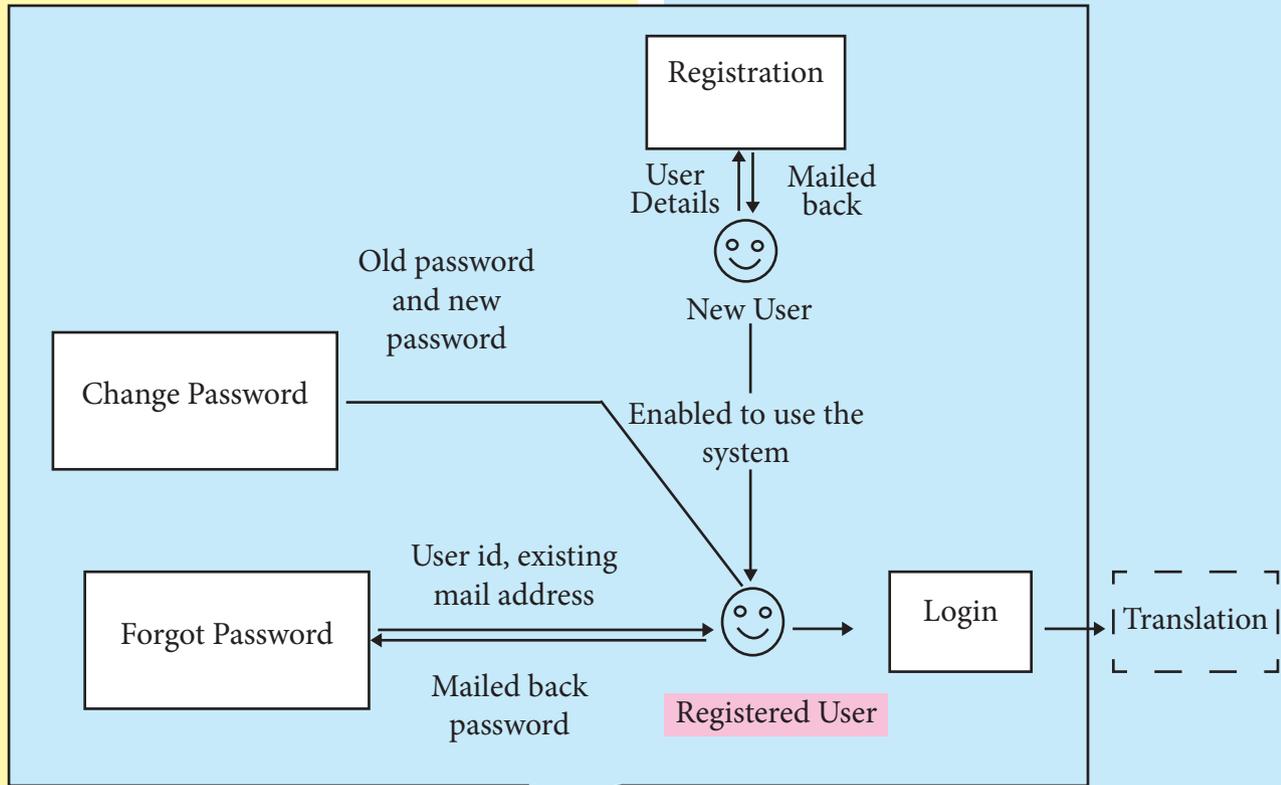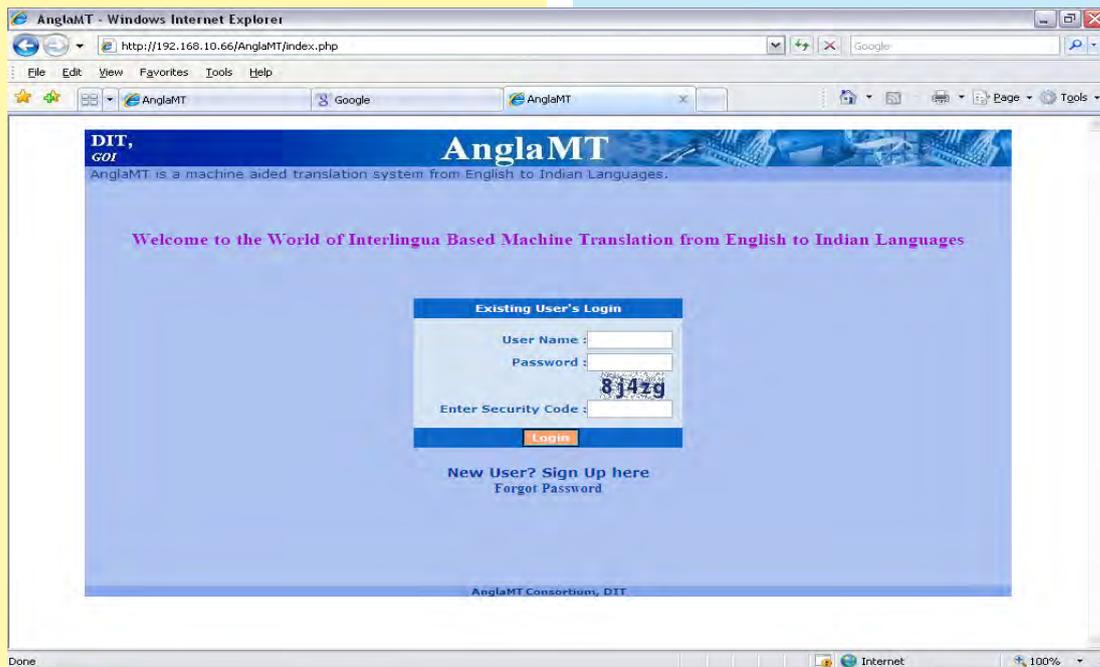
Figure 2: Diagram of Registration module

Figure 3: Login Screen of Web Interface

Translation

This is the main step of the system. The interactive flow is given below. From this step user may use any of the following sub steps (1 or 2). Those sub steps again are multi stepped which are depicted below.

Input by file:
Input (file)
Input by sentence(s):
Input (English sentence(s))

Sentence boundary finalization
Output

Output (translated file will be sent by email) Grossly "Input by sentence(s)" is an interactive (step by step) quality translation generation process where user has the option to manual correct translation(s) followed by optional "ranking" step, whereas "file input" is a single step translated output generation process, which has no scope for human interaction. All the steps are illustrated in detail with "screen shots".
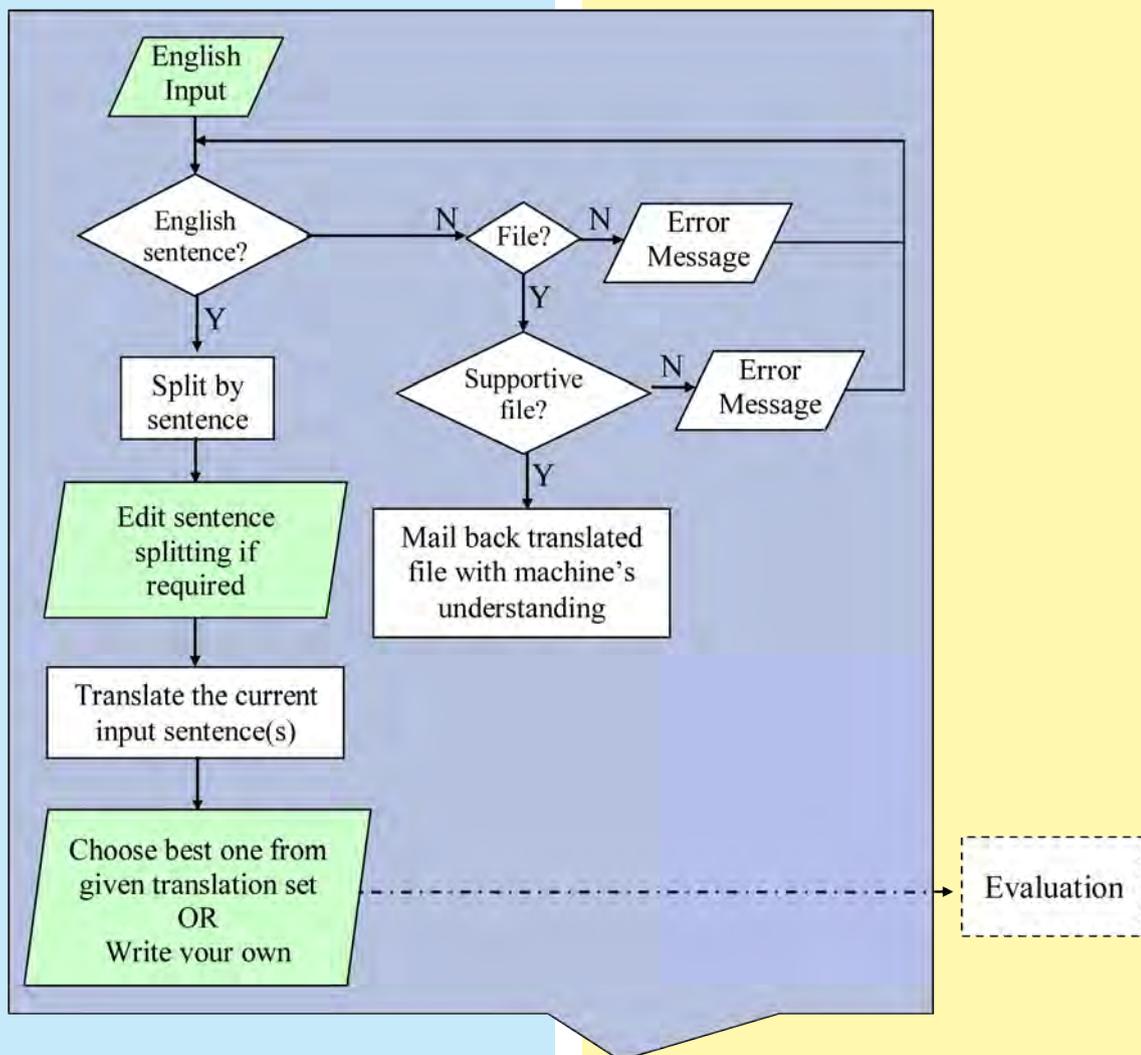

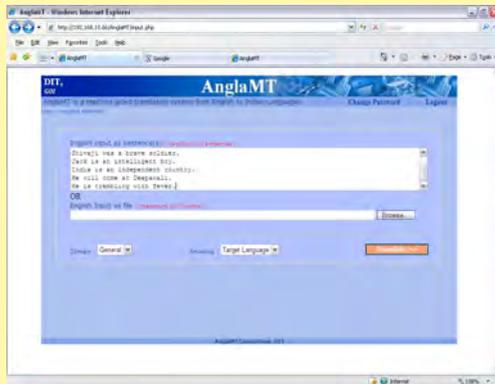
Figure 4 : Diagram of Trannslation module

Figure 5 : Input sentence(s) screeen

Evaluation

This is an optional step (can be skipped). In this step user can give his opinion using a pre specified scale, indicating some definite error category described below (See Appendix II-V for examples). User can evaluate each sentence translation just by clicking on the desired rank
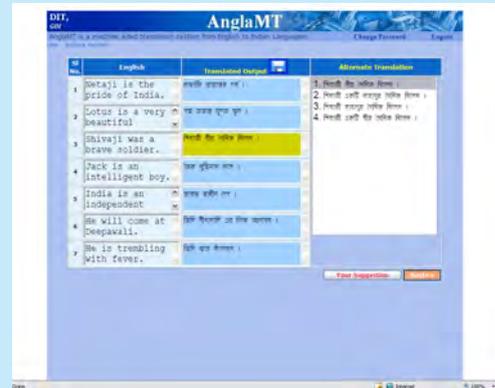

Figure 6 : Translation Screen

value option. He may not evaluate some of the sentences. Finally he may give some general comments also. After filling all the details he may press "Next" button for go to next page with save opinions. Otherwise he may press "Skip" button for go to next without save. The next page is the detail of saved information with UNIQUE ID against each sentence for further reference.

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