**Chrome translator extension**

**Detailed Design**

## Problem Description

The requirement is to create a chrome extension such that -

1. It can translate the entire text of the web page into a different language
2. The web page must be replaced by the translated text.
3. It can have a web page with options for selecting language to which the text needs to be translated to.
4. It can use English,hindi,Arabic,German,French in this case.
5. It can be ported to firefox,opera

## Solution Overview

As per requirement, the extension will have a popup comprising of a current language span and button for translating the text.

The extension will be implemented as follows –

1. The popup will appear as soon as the extension is invoked.
2. The extension will make the calls using ajax to the google translate api and send in the data in the form of JSON in order to detect the language and will be sending data back in the form JSON.
3. On click of translate button from the extension. Code in javascript will iterate through every dom element and send the innerText of that element to the google translate api using AJAX.
4. Response from the AJAX is received and the corresponding dom element innerText gets replaced.
5. If User goes to the options of the extension hence he gets redirected to the web page where there is a Select tag where he can select the language that he will be able to convert to once he click the translate button from the extension.
6. User selects the language and submits and gets the update that default language has been changed to the selected language.

## Code Level Changes

# popup.html

This is the body of extension, which will contain a Div for detecting and displaying the current language.Also it will have a translate button which will convert the entire text of the webpage to a different language.

# manifest.json

This is manifest file of the plugin. It will have following important tags to enable communication between extension and webpage –

**Permissions –** activeTab

# popup.js

This javascript file will be responsible for listening to events in extension’s scope and It’s key responsibilities are

* On invocation of extension read the text of current web page and send it to the google translate api for detecting the language.
* Listen to click event of extension’s translate button and send the content of the screen as a text under JSON to the google translate api and get the new language content and replace in the web page.

# Options.html

This is the page that contains the options of selecting the default language. This page can be accessed using options of the chrome extension by right click on extension or using the details panel of the extension.

# Options.js

This is the script that will capture the default language and set it to the data property to access using the extension popup page.

**Sequence Diagram**

