Things Translator

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Abstract- *There are 27 states and 7 Union Territories in INDIA -- With 22 scheduled languages are there, and most spoken languages are Hindi, Bengali, Telugu, Marathi so if we want wander around other region in India outside our place there may be consequences that we may not know that language of that particular region, we find language barrier due to not understanding the language they speak plus there is if we want to read newspaper in other region so there would be also consequences that newspaper language is also in language that we don't know there is also a language barrier and also last but not the least if want to shop from other region the problem is same.*

Keywords- Thing Translator, Language Translation, Image Processing, OCR.

I. INTRODUCTION

Things Translator is an application which is object of the present invention to provide an improved object translation system which is capable of translation in real time with also translating & recognizing particular object by hover over it or capturing image of it.

It is another object of the present invention to provide a translation of any text to your own language. In this App you can either capture image of particular text otherwise hover over object it will tell you what that object is called in your desired language And also will pronounce the word of translated object text/word.

Our application is also capable of recognizing particular text which is in foreign language but mainly our aim to build is for local languages i.e. newspaper, books, boarding of shops, etc. So you need to select desired translating language provided by us in application And you have two options to translate this you can hover over any newspaper, books etc. so it will translate in real time otherwise you can capture image of any object it will process on image by using object character recognition and cloud vision and will provide a picture for desired translation language.

II. RESEARCH AND IDEA

Here in India we have so many religion with its different caste thus they speak different languages as per their locality. So it's hard to understand and learn all the languages across country INDIA and also to interact and communicate with them in their native language. This language barrier is mainly hit to foreigners and tourists or travelers, they don't know our native language so it's hard for them to talk with native peoples.

Some time we does know which type of language people talk in an area but we don't know how to pronounce things name there like food name, street name, home name, person name, so we know the language type but still don't know how to pronounce things name in their native language. Some time while travelling in different states of India and we don't know what's written on sign board, newspaper, shop name, or also while study in different state this language barriers is really effect so much.

We did research on so many products available out there like Microsoft translation, Bing translation also other Vision API and Translation also like clarifai (https://www.clarifai.com/), blippar(https://developer.blippar.com/portal/vs-api/index/?checked_login=true), Google cloud vision (https://cloud.google.com/vision/), For Translation we looked for so many libraries and APIs like languagelayer (https://languagelayer.com/), yandex (https://tech.yandex.com/translate/), Google Translation (https://translate.google.com/). We read about OCR techniques (https://en.wikipedia.org/wiki/Optical_character_recognition) and implemented into our application.

So the idea of this application was inspired by Google translator and Google's AI experiments, which only does this image processing and translation task for English to other languages, there is nothing available on internet for our Indian Languages, also Google translator's process is you need type there which word you want to translate into other languages. So inspired by that we used that idea with our creative imagination and tried to build something for our India and also a very user friendly and easy to use system in which you no need any extra knowledge or no need to type anything for getting your desired output.

III. CURRENT SYSTEM ANALYSIS

Write now we do have so many translation tools, applications, software's but still nothing is work for our Indians because we have so many different languages. Talk about big companies like Google, yahoo, Microsoft yes they do have their translation APIs but still those are not so relevant, yes our idea is inspired by Google's AI experiment but we did so much analysis on it, and we developed our own android application which is mainly for Indians and also it have more features and also very easy to use.

Google can translate text to text thing, while with image only work when we have English text written in there. But our application will work with most of all Indian languages, or If you API you can suggest for your own local language too. Well there is nothing developed yet which can detect the thing or object name and pronounce it to our desired language. Right now Google just grab text from user detect its language type and try to translate it into desired language.

IV. LITERATURE REVIEW

The investigation of the idea was taken place and it was known that most of the language translator we used will not so much relevant for our Indian languages an also there is nothing available which can translate text and real time and also can tell you thing name into your own desired language, there are so many software's, applications are available like Google translator, Bing translator, Microsoft's own language translator, yendex translator and so on but these all are only work when you type something and then it will translate that text into your desired language, but for our Indian that is so hard thing because we have so many languages here in India so it hard to learn them all and write them all, so like if you want to read newspaper in other state of India what you will do? You have nothing which can help you to translate that newspaper into your own language? So that the limitation of this all products available on internet in market. So this Things Translator Application is able to translate text in real time just hover our text and done you will get your output that's not it, this application also provide you a text to speech feature by which you can able to know how to pronounce that word which is written there. And main part its very user friendly and easy to use system. Not just text translation, this application is also able to translate thing name, like you can capture image of bird or chair or glass anything it will tell you what that thing is and also what it called in different languages and it will pronounce that name for you. This is how easy it is for user to translate text and thing name into their local   language.
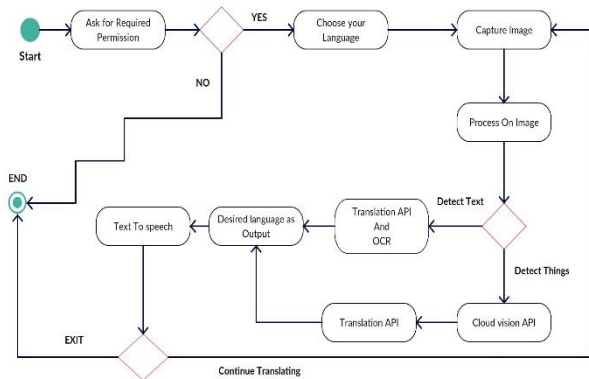
V. METHODOLOGY

Things Translator- an android application will work on all android devices. The main purpose of this application is:
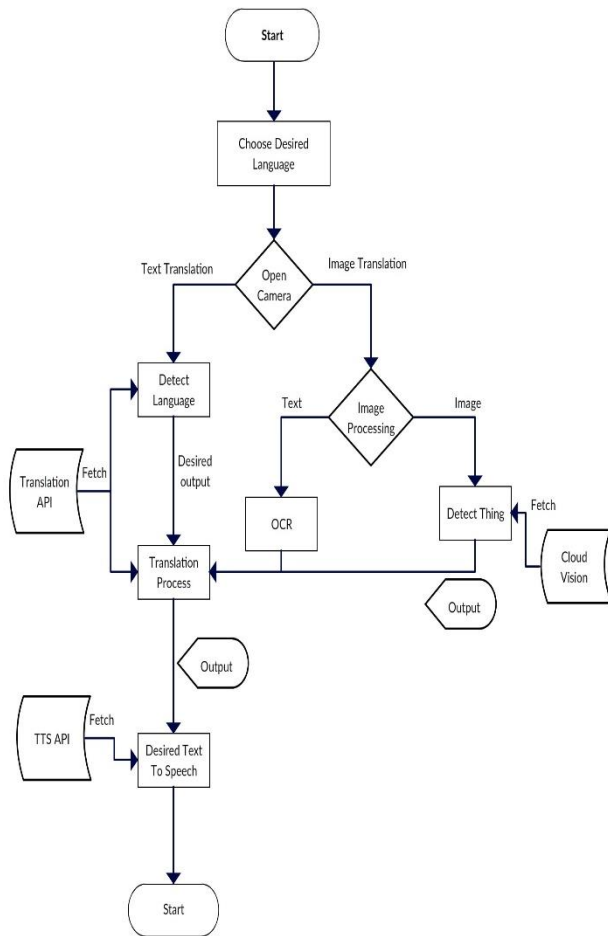
I.   Reducing Language barrier between different localities**.**

II. A user friendly and easy to use platform to make object recognition and translation very easy in different location by just capturing image or hover over text.

III. A Platform which tells you how to pronounce thing/object translated in different languages.

IV. There is 27 states and 7 union territories in INDIA so if we go to some other region then maybe we don't know how speak their native language and we don't understand what language they have used Also if we want to read their newspaper or go to shopping it's hard to recognize their language & whatever the language they used in newspaper or in shopping they don't know how to speak in some other language so language barrier hits them.

V.   If foreigner comes to India to visit & shopping, the same scenario will occur as said in above point they also don't know how to speak their native language

VI. If we want to manage the business in some other locality that we don't know than language barrier is issue there. Unable to manage the client from different country or states if they speak some other language.

The application will work in following way:

I.   User will open our application Things Translator, after giving permission like camera and Internet it will automatically open camera there on screen.

II. We have two feature into our application one is thing translator and other is text translation.

III. So for thing translation users need to click a photo from using our app of that particular thing, After getting image our app in backend do all the image processing work and give output to the user that what that thing is called into your desired language, also it will pronounce it out for you.

IV. For text translation user can hover over to the text our app will detect the text using OCR (Object Character Recognition) technique, than it will translate that text into your desired languages.

Activity Diagram

Flow Chart

VI. SPECIAL FEATURES

The idea of this application was inspired by Google translator and Google's AI experiments, which only does this image processing and translation task for English to other languages, there is nothing available on internet for our Indian Languages, also Google translator's process is you need type there which word you want to translate into other languages. So inspired by that we used that idea with our creative imagination

and tried to build something for our India and also a very user friendly and easy to use system in which you no need any extra knowledge or no need to type anything for getting your desired output.

Also it will helpful for users to read newspapers books or getting name of things into their own local languages all our India. There is no such android application is available for this type of things translation as well as real time text translation anywhere.

We have included:

1. **Real Time Text Translation:** In this feature user just need to hover over any text our application will detect the language using Object character recognition and by using translation API it will translate that detected text into your desired language.

    API's we are used here are:
    Google Translation API: For real time text translation.

    TTS (Text-to-Speech) API: For proper pronunciation of translated text.

2. **Things Translation:** In this feature user just need to capture the image and our application will detect the object by using some image processing or using Vision API and after getting detecting object it will translate it into your desired language.

    API's we used here are:
    Google Vision API: For image processing and object detection.

    Google Translation API.
    TTS (Text-to-Speech) API.

VII. CONCLUSION

This how we think let's build at least something very useful for our Indians, this "Things translator" is made for Indians and made by Indians, so now no need to learn all the languages across India or no need to keep translator/assistant with you , just use this application and feel free to talk with anyone in any language, no worry about how to pronounce thing name if what a specific food just order it in their own native language now no need to worry about reading sign board, newspaper, books written in different languages, just use this application hover our text and you'll get accurate translation in second of times, no need to buy dictionary if you have

smartphone you can go anywhere in India and can understand any language.

Most of foreigners hesitate to talk with native peoples in India and same Indian people as well because of language barrier or I say don't know how to pronounce words or name in Indian language, but with this application now everything is easy for them too they can talk with anyone can read newspaper can learn new stuff in native language. Because of India have so many languages and no one can understand all the languages here so we need an assistant who can support us to do thing translation or language translations stuff for us, so for that Thing translator is a perfect solution. No need to buy anything, this android based application is very easy to use easy to understand, easy to operate and very user-friendly. Just need android phone with OS version higher than 4, and camera access permission and all setup done, now you have all language stored in into your pocket. Our main purpose is to break this language barrier between people so they can talk with each either very easily and don't feel hesitate while talking with new person from different locality.

FUTURE IMPLIMANTATION

This application for now need internet connection to use it in future we will add an offline portion so that users also can able to use some features of application when they are in offline mode.

Because this application is based on Image processing and OCR technology we can add an extra and government helpful feature too if government help us in this applications next version than we able to add a new feature, by that any traffic police inspector can able to find detail of about any vehicles using just its number plate.

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