# Problem Statement and Approach

This section discusses the identified problem that this project tries to address and the approach used to do it. It provides a brief background on the problem and the solutions available currently. It also provides a short review on why those solutions even though are very useful do not serve the purpose of the problem. This section then explains the proposed solution in this project in detail. It compares the solution with other approaches to the problem that were considered and illustrates why they were dropped.

**Problem:**

Human migration, i.e. movement of humans from one place to another, have always existed. It started from migrating across the globe to places void of human population in Upper Palaeolithic Age to movement due to Colonisation. In present time, human migration mainly takes place between or within sovereign countries for reasons such as safety, education, better standard of living etc. Moving to a new place comes with a lot of problems like Culture Shock, Isolation and Language Barrier. In United Kingdom (UK), Language Barrier is one the main problems faced by immigrants. In universities there are programs such as English classes which are in place to help international students get accustomed to UK lifestyle but it is not the same for all the sectors. Hence, a communication gap is observed.

Nowadays, there are a number of online tools that are available to translate sentences from one language to another. There are websites such as Google Translate and Bingo Microsoft Translator that allows users to insert a sentence in any language and get the output in the language they desire. There are mobile apps such as Google Translate and iTranslate which provides such facilities in the smartphone. There are also resources such as translate APIs from Google, Microsoft and Amazon who allow developers to incorporate these translators to the software they build. However, none of these resources provide users with the ability to translate sentences in-app, i.e. they need to copy the sentence and paste it to one of the translators to understand it. Moreover, with people using messaging platforms as their most preferred form of communication, some of the most widely used chat apps are WhatsApp, Facebook Messenger and WeChat. These chat platforms do not provide the facility for users to communicate in a language they prefer in as the message gets transmitted in the language its been sent. Therefore, there is an absence of a platform via which users can send and receive messages in the language they prefer no matter whom they are communicating with and what language they prefer.

**Approach**:

Over the years it has been evident that technology has advanced tremendously and has become cheaper, making it an integral part of everybody’s life. It has provided amazing tools and resources at our fingertips. For example, it has completely replaced Alarm clocks with a single app in a mobile phone. More and more people are using smartphones and with it the most preferred form of communication has shifted from phone calls to text messages. Thus, when light was shed on the Language Barrier problem and it being one of the most common problems faced by immigrants worldwide, it was clear that the solution of this problem needs to be a mobile app.

The approach to the problem that this project addresses is building a mobile app that is easy to use and highly functional. It would provide the user with a platform where they can choose a language of their choice during signup, view available users, message to any user in the chosen language and receive the messages in that language. It will also allow users to change its email, password, language if they wish to. It will use a 3rd party API provided by Google or Microsoft to translate the message if the sender and the receiver do not have the same language saved.

Another approach to the problem that was considered was a Keyboard extension. It would allow users to type in a sentence, translate it to receiver’s language and then send it. This feature is already provided by the iTranslate app. One of the main drawbacks of this approach is that the user needs to have a prior knowledge of the receiver’s language and hence go through an extra step of translation before sending the message. Another disadvantage of this approach is that the user can never use this service in a group chat with users having different languages. Due to these limitations, this approach was not pursued.