

# Translators4u Android Application

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## Abstract:

Language can be a barrier in a communication when the message conveyed to the other person is not reached. This problem is commonly faced when travelling to other countries especially at places that only speak their own native language. Taking into advantage the applications that can be downloaded into smartphones, a translation application is created. Translators4u is an instant translation application. It support with 81 languages to let the user choose the pair languages needs, then the system automatically appear the translators who speaks those languages to the user. Users can easily make voice call by SIM number or Skype with translators, also they are able to see translators profile and their location flag. The system serves users with reservation service to easily get translators on time. By looking at the different needs of people during their trip to different countries this application can serve those with translation problems.

**Keywords:-** Mobile application, translation, languages,

## 1. INTRODUCTION

Language barrier arise when two or more people are unable to understand each other because they do not speak the same language. This problem not only occurs during travelling but at work place and health care centers too. Hired foreign workers will have to learn up the local spoken language particularly when their colleagues do not converse in English [1-4]. Similarly, in a multiracial country, health practitioner faced the same problem with the senior citizens or foreign patients who do not speak the local language or English during consultation [5-6]. A clear conversation is important, and passing a clear idea in the same native language will make things clearer and easier. Having a person next to you for 24h/7, while you are in a different country and unable to speak the language of that country is very hard and expensive. Learning the language of that country and using it, would be another problem if the trip is short and swift, as well as not forgetting the costs of hiring a language tutor. In addition to that, finding a person to understand your language is not an easy matter [7]. Thus, much advancement has been done to help and improvise the existing translation technology (human translator and machine translator).

Yamashita and Ishida conducted some research to add the collaborative work in improving the efficiency of the machine translators. The authors used 8 pairs of people of 3 different language communities. Results of

their study showed that in machine translation-mediated communication, participants had difficulties in efficiently identifying a referent through basic exchanges and the process of shortening referring expressions is also interrupted because the translations do not translate the same terms consistently throughout the conversation [8]. Experiments were carried out by Lin et al. to compare the translation quality and translation cost using several translation processes by human and machine translation services. The experiments results revealed that composing monolingual roles and dictionary services did enrich the translation quality of machine translators, and that collaboration of human and machine translators is indeed an alternative to reduce the cost comparing with the absolute bilingual human translation [9]. Although results proved that machine translator tends to be beneficial rather than detrimental for idea production when it enables people to speak their own native language, nevertheless it hinder comprehension [10]. Calefato et al agreed with this and emphasized that speech recognition is the most critical part aimed at speech translation technology, as adequate translations tend to follow accurate transcripts [11].

Therefore, it is a great idea to having a person 24/7 a day to translate your native language to a different one, while he/she is, actually, not next to you, but supporting you whenever or wherever you are which is proposed in this study. The 'translators4u application' is designed in such way that it user-friendly rather than training,

searching or spending a whole lot of money just for translation. Users will just be one click way to use this service.

## 2. DESIGN

### 2.1 Technical Requirements

Technical requirements are general term used to describe the set of statements that identifies a system's functions, and characteristics.

- Login Validation: Users\Translators login at back-end to admin process. Also, they should login with their email and password.
- Data storage: The database will be connected with Pars web to store the data of reservation, and Users/Translators.
- Reliability and Recovery: In order to prevent data loss, a recovery mechanism is needed. To do that the backup data will be copy onto removable media or use an online backup service every day. When there is a data backup, it can be quickly restore good data to fix database damage or replace a failed database server computer by transferring the database to another computer network. Additionally, using a RAID hard disc system that provides storage redundancy on the database server computer can prevent a full hard drive failure, by giving time to fix a drive problem.
- Internet Connection: It is very important to able the user and Translator talk clearly.
- User interface: It is an important part to develop the system. It must be attractive and user friendly. Because it helps the user to easily understand the system..
- Mobile devices: To implement the application successfully, the user need an android platform to run the application.
- The whole system is created for English and Arabic languages.

### 2.2 Requirement Specifications

In the section below, the list of requirements for this project is divided them into two basic categories: Functional and non-functional Requirements. The Functional requirements refer to the information in the system should contains whereas the non-Functional requirements refer to the attributes or the behaviors like the performance of the system.

#### 2.2.1 Functional Requirements

User should:

1. Be able to login to their accounts using their Username/Email and password provided by the admin.
2. Be able check the Languages needed.

3. Be able see details about translator.
4. Be able request translator on local or Skype Call.
5. Be able reserve the translator.
6. Be able rate Translator and Application.

Translator Should:

1. Login/out into/from the system.
2. Receive and answer calls.
3. Edit profile.
4. Rate Application

Admin should manage the system by:

1. Update system parameter.
2. Maintain the system.
3. View / edit personal data.
4. Can distribute system authorities

#### 2.2.2 Non-Functional Requirements

- User can see the online translators.
- Translators can receive reservation request.
- All data of user, Translators and Languages are stored on Pars database web.

## 3. IMPLEMENTATION

### 3.1 Database Creation

E-clips software is used to implement the Translators4u application while the database was designed using Pars website. When create an account, a keycode is provided. Then in Java SDK, a class is created and the key code is typed on it to connect with Pars database website.

### 3.2 System Architecture Description

When the application is opened, the first screen contains, Sign In as User or Translator. Sign Up as user or Translators as shown in Figure 1.

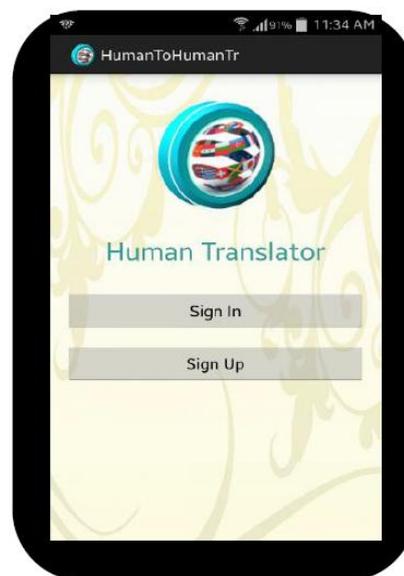
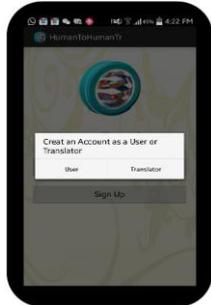


Figure 1. Sign in/Out page

For new user or first new user, upon clicking the ‘sign up’ button, the user has to select if a user need translator then select user as depicted in Figure 2. If the user is a translator, Translator sign up is to provide translation service to the users.

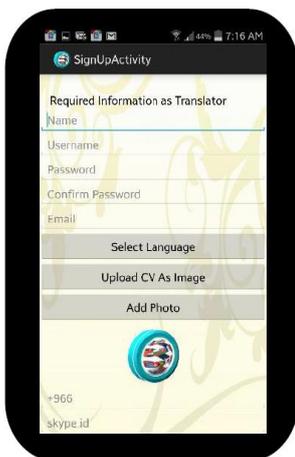


**Figure 2. Sign up page**

To create an account, the user need to fill all the fields with the information requested in Figure 3. However, to sign up as a translator, the page interface is slightly different. Users who sign up as translator will need to submit their resume to the system as shown in Figure 4. A confirmation code (refer to Figure 5) will be sent to the registered email once the account has been created successfully.



**Figure 3. Registration page as user**

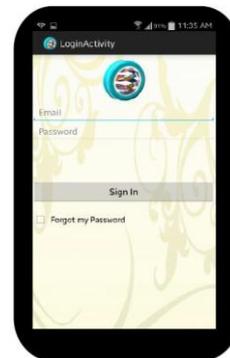


**Figure 4. Registration page for translator**



**Figure 5. Confirmation code page**

After creating an account as User/Translator, the following page (refer Figure 6) request the user to input the email and password that have been registered during the sign up. If the user forgets the password, a click on ‘forgot password’ button, will prompt the system to send the new password to the user’s email.



**Figure 6. Sign in page**

Figure 7 displayed the user’s home page. In this page, the user can Add Translator, view all the Online Translators, and Reserve a Translator based on date and time, and rate the application as well. Logout button on the top right of the application is used to exit the application.



**Figure 7. User’s homepage**

Whereas on the translator homepage which is depicted in Figure 8, the Translator can see the Missed calls, the Received calls. Also, he/she can edit profile from settings, and rate the application. The logout application to exit works similarly as the user’s homepage.

Users are also able to call their translators directly using this application. In the 'All translators' page as in Figure 9, users can call translator by Number or Skype and see his/her profile and rate the translator. Moreover, the users can search about their translator. Information about the translator can be viewed in the 'translator information' page. Details such as name, total number of likes and languages spoken are provided in this page. Figure 10 presented the 'translator information' page.

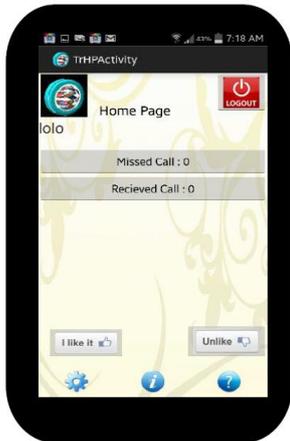


Figure 8. Translator's homepage

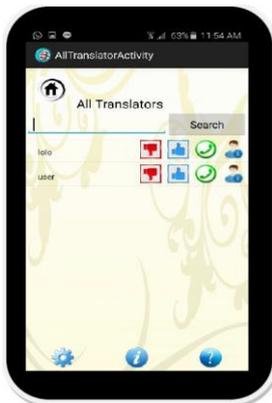


Figure 9. All translator page



Figure 10. Translator information page

The 'user's setting' page allows user to change password and email as well as profile photo. The screenshot of this page is shown in Figure 11.

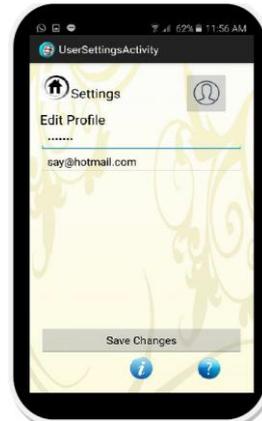


Figure 11. User setting page

If users or translators have any problems in using this application, they can always refer to the 'help' page (Figure 12). This page contains a short video which demonstrates how the application works.



Figure 12. Help page

### 3.3 System Features

1. User can view the online translators who speak pair languages.
2. Each translator has a profile contain a brief about him/her.
3. User can add the translator to his/her own list.
4. User can reserve a translator by selecting the date and time. Once reservation request sent to the translator, the system sends a notification to the user with successful or unsuccessful request. Then the user can look for another translator.
6. User can view the current location of Translator.
7. Translator cannot call the user again.
8. Translator can see the numbers of missed/received calls.
9. Admin can edit and delete accounts, and make change with interface style.
10. Users and Translators can rate the Application.

#### 4. TESTING AND VALIDATION

Genymotion Simulator software and Samsung device Android platform are used to test each function and requirements. The system works perfectly as expected.

Various types of real time testing against the functional requirements of the system such as the process of code confirmation, email, password, required information to create an account, and reservation request notification are also performed. Results of the system testing are tabulated in Table 1.

**Table 1. Results of system testing**

	Initiator	Execution times	Results
Sign Up as User	Visitor	5 times	Pass
Sign Up as Translator	Visitor	3 times	Pass
Sign In	User	5 times	Pass
Select Language	User	5 times	Pass
All Translator	User	5 times	Pass
Reserve Translator	User	5 times	Pass

#### 5. CONCLUSION

Translators4u implement it on Android platform and the following describing briefly the functions: User/Translator can create an account by signing up. User can select the languages needs, then the system will show the online translators, and the user can call translator by Skype or SIM Number, for translator can receive the call. User has the ability to see the location of the translators and profile. User can send a request to book translator in specific major. The system sends the request to the translator. The translator has the ability to accept or refuse the book request, and then the system sends a notification to the user if accept /refuse the request.

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