

An aerial view of the Hong Kong skyline, showing a dense cluster of skyscrapers and buildings along the coast, with the Victoria Harbour in the foreground. The sky is blue with some clouds.

A Collaborative Android Application Providing an Online Google Map with Audible Cantonese Location Pronunciations for Expats and Tourists in Hong Kong

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Motivation

Hong Kong has hundreds of different locations whose names are difficult for foreigners to pronounce and remember. Foreigners often have trouble communicating to local citizens, especially taxi drivers, when they want to go to various tourist attractions or popular places.

Objective



Our goal in this project is to provide a tool to help non-Cantonese speakers in Hong Kong to overcome the language barrier when they travel in the territory. In our Android application, users can select languages: English, Traditional Chinese and Simplified Chinese. When users tap on a location on the Google maps of Hong Kong, the system displays the place name in the three languages. Then, the users can tap to hear the pronunciations in English, Cantonese and Putonghua. The system links to a tourist board, which is also created by us, so users can view additional useful information of the location.

Project Overview



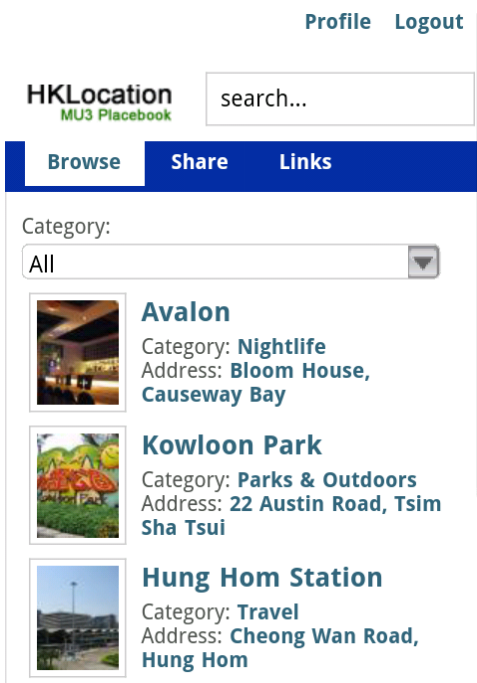
Voicemaps

(Also named: Where to? (Cantonese: 去邊度?))

It is an android application that allows user to get the address and pronunciations of any point on Google maps.

Features:

- Place name retrieval
- Pronunciations
- History
- Proximity alert
- Preference settings
- Pinyin displays
- Place search
- Attraction overlay
- Multilingual support
- TTS start-up checking



Expatriate & Tourist Sharing Board

It is a website which allows users to share and view Hong Kong locations' information.

Features:

- Registration
- Location sharing
- Photo upload and view
- Cantonese Pronunciation
- Location list
- Location detail
- Comment
- Place name retrieval

Implementation

Place Name Retrieval

When user long presses a particular location on the map view, our application starts two threads to retrieve the pressed spot's address and the nearby venues.

We requested the two web services, Google Geocoding API V3 and foursquare APIv2, and parsed the returned JSON files to get the values.



Google code

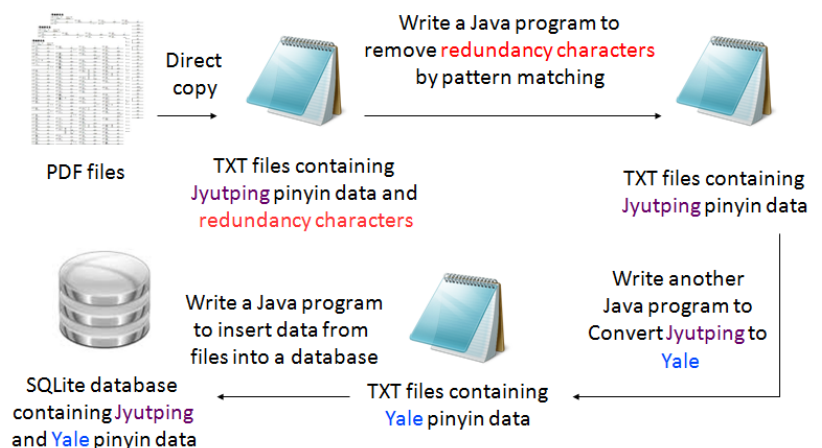
foursquare™ DEVELOPERS

Pinyin Database

We have used the Cantonese pronunciation list from iso10646hk.net as data source.

The pinyin database stores Jyutping and Yale Cantonese pinyin.

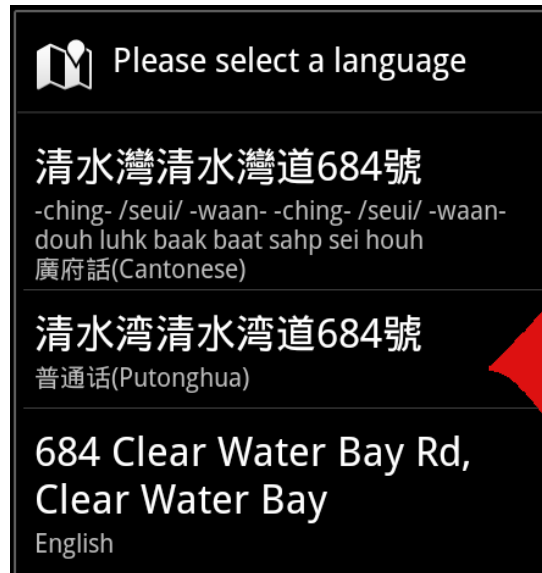
Implementation of Pinyin Database



Pronunciations

We built a customized Text-to-speech (TTS) engine to pronounce Cantonese and created a voice datapool from Ekho (餘音). We made use of the Android TTS, SVOX Pico and two other 3rd party TTSs, eSpeak and SVOX Classic TTS.

Language	TTS Engine used
Cantonese	Our custom one / SVOX Classic
Putonghua	eSpeak
English	SVOX Pico



Please select a language

清水灣清水灣道684號
-ching- /seui/ -waan- -ching- /seui/ -waan-
douh luhk baak baat sahp sei houh
廣府話(Cantonese)

清水湾清水湾道684號
普通话(Putonghua)

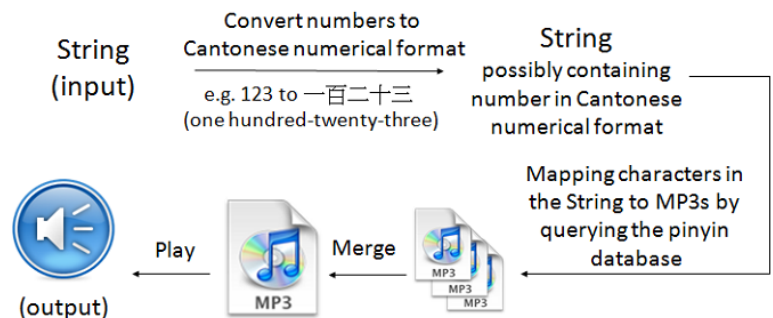
684 Clear Water Bay Rd,
Clear Water Bay
English



Implementation of Custom Cantonese Pronunciation Engine

We wrote a class to pronounce Chinese strings in Cantonese.

Steps in the class:



Cantonese Pronunciation Engine

It is a Java class that can pronounce a string of Traditional Chinese characters in Cantonese.

The MP3 files are extracted from the open source Ekho voice data.



Icon of Voicemaps



QR code of latest version of Voicemaps

Result

We spent about ten months on this project, and we finished the program application which fulfills the project requirements.

Voicemaps users can tap on any location on a Hong Kong map to find its address and pronunciations in Cantonese, Putonghua and English. They can also use it to search for places and get recommendations for attractions in Hong Kong.