

# **Text recognition in case study of SF333 Mobile application**

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# AGENDA

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- Objectives
- Backgrounds
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- Proposed work
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- Experimental results
- Conclusions
- Suggestion

# MOTIVATIONS

- Problems need to quickly collect character data in the images.
- Problems sending data across devices.
- Local storage space issues.
- Problems reading text in unclear or not understood images.
- Problems with document management and slow typing letters

# OBJECTIVES

- The messages that you receive can be sent or typing to be added for further use.
- The resulting message can be forward to another device.
- Increase efficiency of document work.
- To convenient in pulling images from the gallery to use.
- To convenient portable tool that can be used everywhere and works immediately.

# BACKGROUND (CONT.)

Optical character recognition (OCR) is process of classifying optical patterns contained in a digital image. The character recognition is achieved through segmentation, feature extraction and classification.



# BACKGROUND (CONT.)

- Steps in Optical Character Recognition :-
  - 1) Extraction of Character boundaries from Image,
  - 2) Building a Convolutional Neural Network in remembering the Character images
  - 3) Loading trained Convolutional Neural Network Model,
  - 4) Consolidating predictions of characters

# BACKGROUND (CONT.)

Library  
Google Service Vision

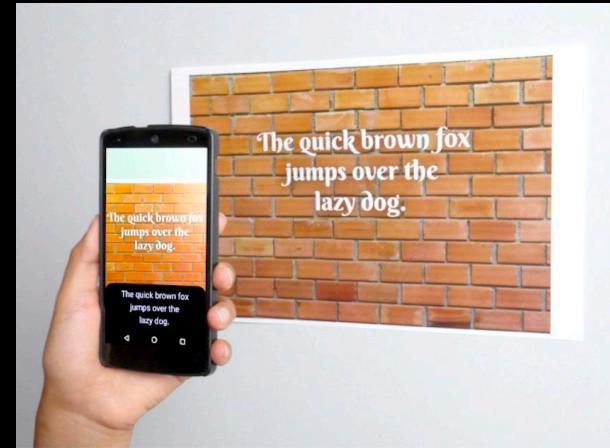


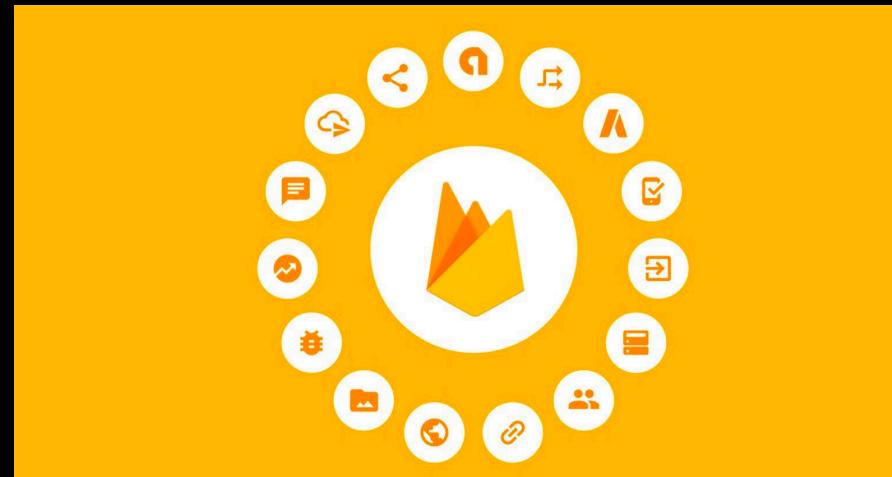
Image Cropper

**Powerful** (Zoom, Rotation, Multi-Source),  
**customizable** (Shape, Limits, Style)  
**optimized** (Async, Sampling, Matrix)  
**simple** image cropping library for Android.

# BACKGROUND (CONT.)

## FireBase

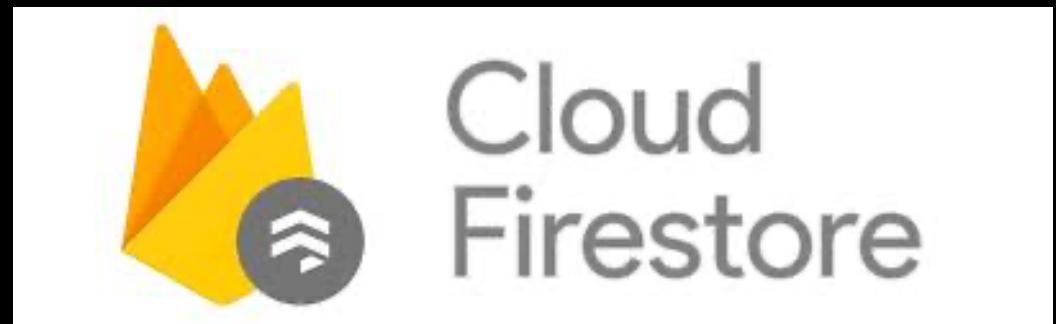
Firebase is a mobile and web app development platform that provides developers with a plethora of tools and services to help them develop high-quality apps, grow their user base, and earn more profit.



# BACKGROUND (CONT.)

## Cloud Firestore.

Cloud Firestore is a flexible, scalable database for mobile, web, and server development from Firebase and Google Cloud Platform. Like Firebase Realtime Database, it keeps your data in sync across client apps through realtime listeners.



# BACKGROUND (CONT.)

- Sensor Camera

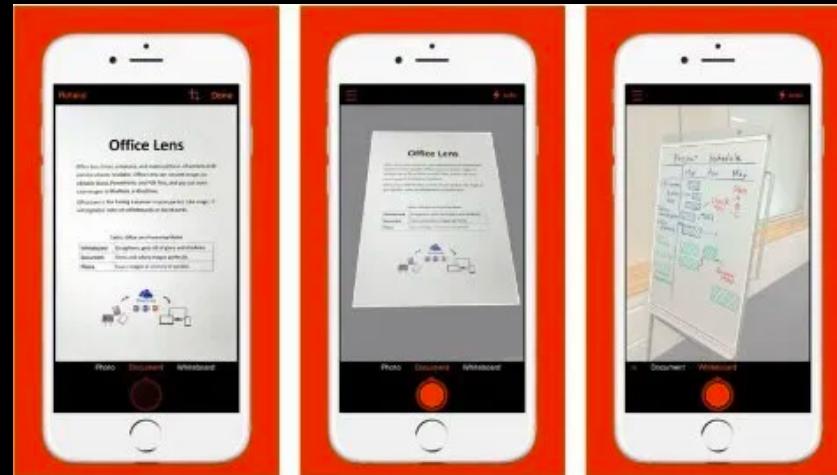


<b>MAIN CAMERA</b>	Dual	13 MP, f/2.2, 25mm (wide), 1.12µm, PDAF 5 MP, f/2.4, 1.12µm, depth sensor or 16 MP, f/2.0, PDAF 5 MP, f/2.4, 1.12µm, depth sensor (6 GB RAM model only)
Features	LED flash, HDR, panorama	
Video	2160p@30fps, 1080p@30/60fps	

# RELATED WORK

## Office Lens(IOS)

Office Lens app from Microsoft that can scan, trim, enhance and make pictures of whiteboards and readable documents. This OCR app can convert images to editable Word and PowerPoint files.



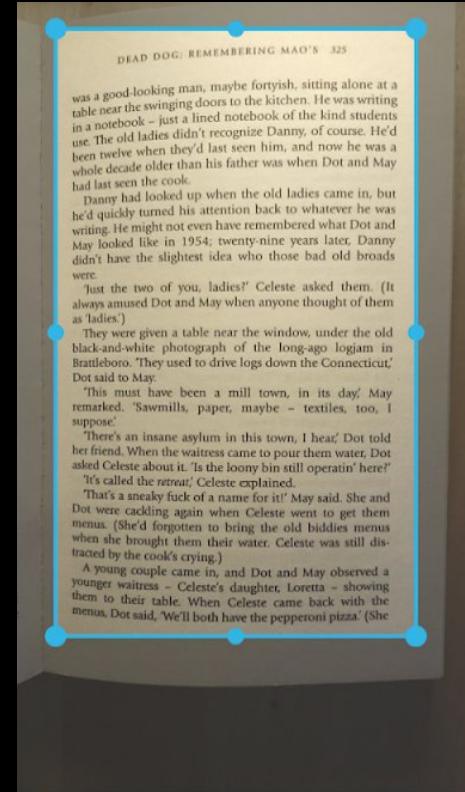
<https://apps.apple.com/th/app/microsoft-office-lens-pdf-scan/id975925059>

# RELATED WORK (CONT.)

## Text Fairy(android)

The popular OCR app is free to use and comes with no ads whatsoever. This improves the scanning accuracy. You can edit the extracted text and export it in PDF format. On the plus side, it supports more than 50 languages.

<https://play.google.com/store/apps/details?id=com.renard.ocr&hl=en>



# PROPOSED WORK

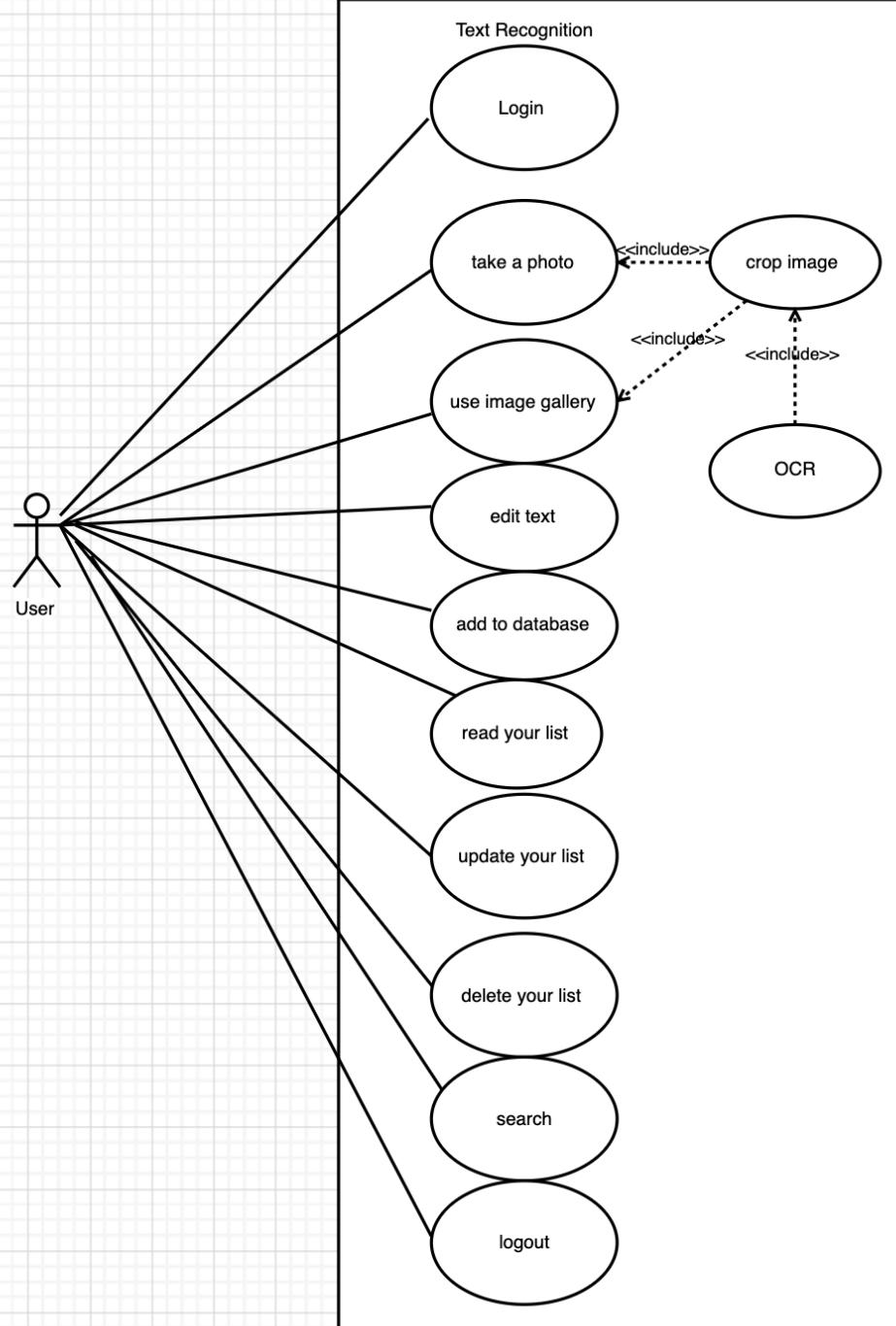
This application can use on online and offline mode

Ocr can text recognition accuracy over 80 %

This application can sent text data to another device

# SYSTEM OVERVIEW

Use case

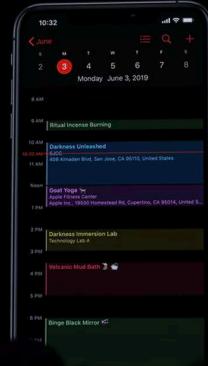


# SYSTEM OVERVIEW

...presa, that they may return to their Pedigree to con-  
sider, which had else been idle: But admitting  
as Subjects, he conceived them inheritable, which  
by answering Objections, because as this Case is,  
it proves affirmative can be had. 1. He denied the  
where the Sons cannot inherit the Father, they shall  
not each other, unless when the Son conveys by the  
1 Inst. 84. its admitted that no Dower shall be given  
ne Alien, or who marrieth an Alien, 7 Co. 25. Cal-  
3 H. 6. 55. 1 Inst. 31. And in Case of Attainder,  
Line is not disabled, unless he conveys by the Father  
38. 41. 13 H. 7. 17. the Husband shall be Exempted  
Courtelle by Issue after Attainder, Bract. l. 3. c. 13  
c. 5. 1 Inst. 12. And though it be here objected, That  
d of the Mother is uncorrupted and pure, yet the S-



Text

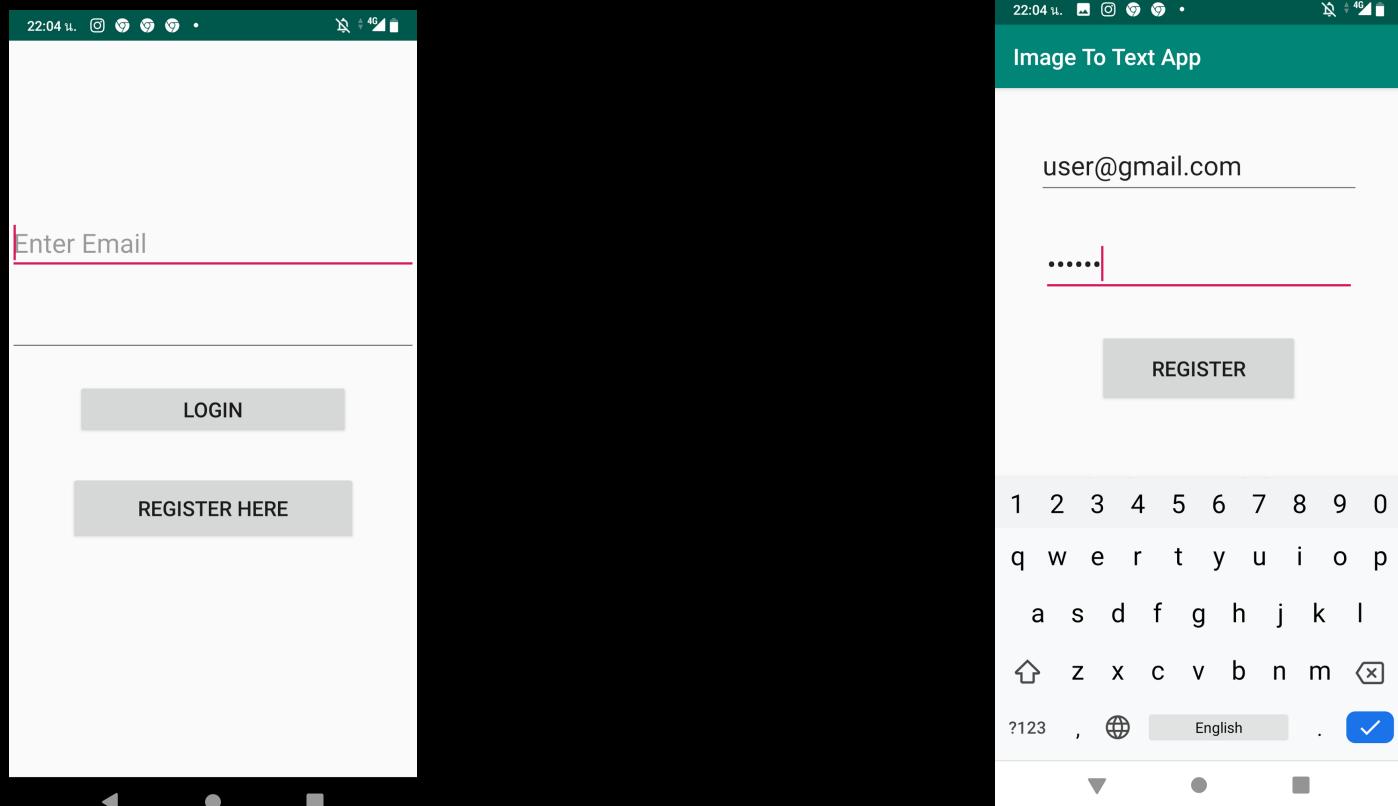


## EXPERIMENTAL RESULTS

# Text Recognition

# Login

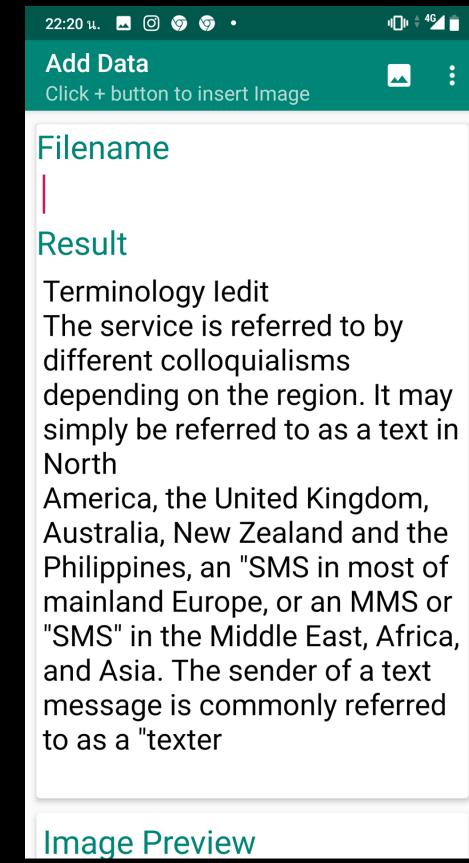
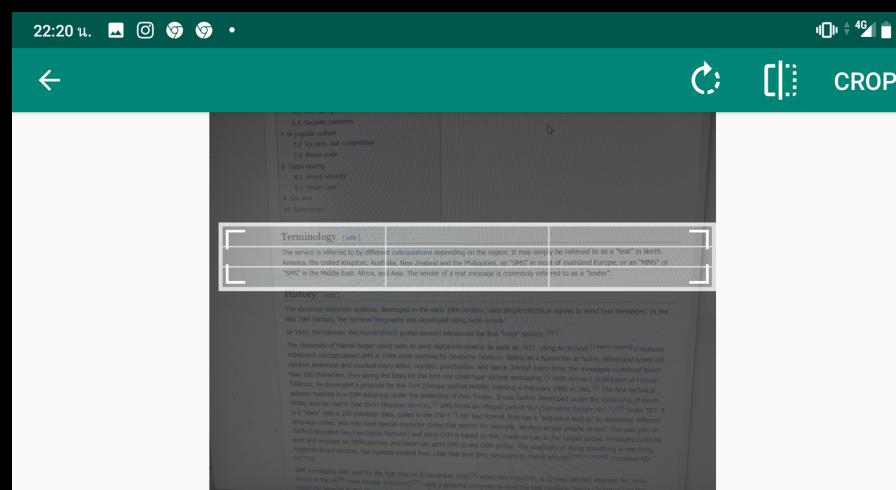
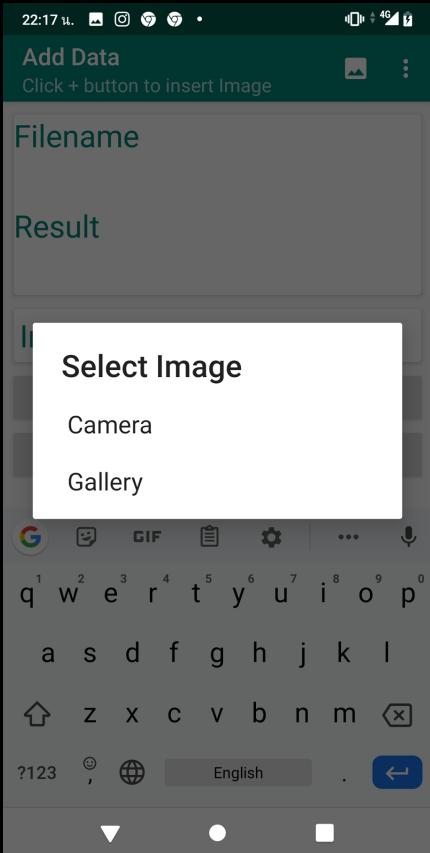
## Register



# EXPERIMENTAL RESULTS

## Text Recognition

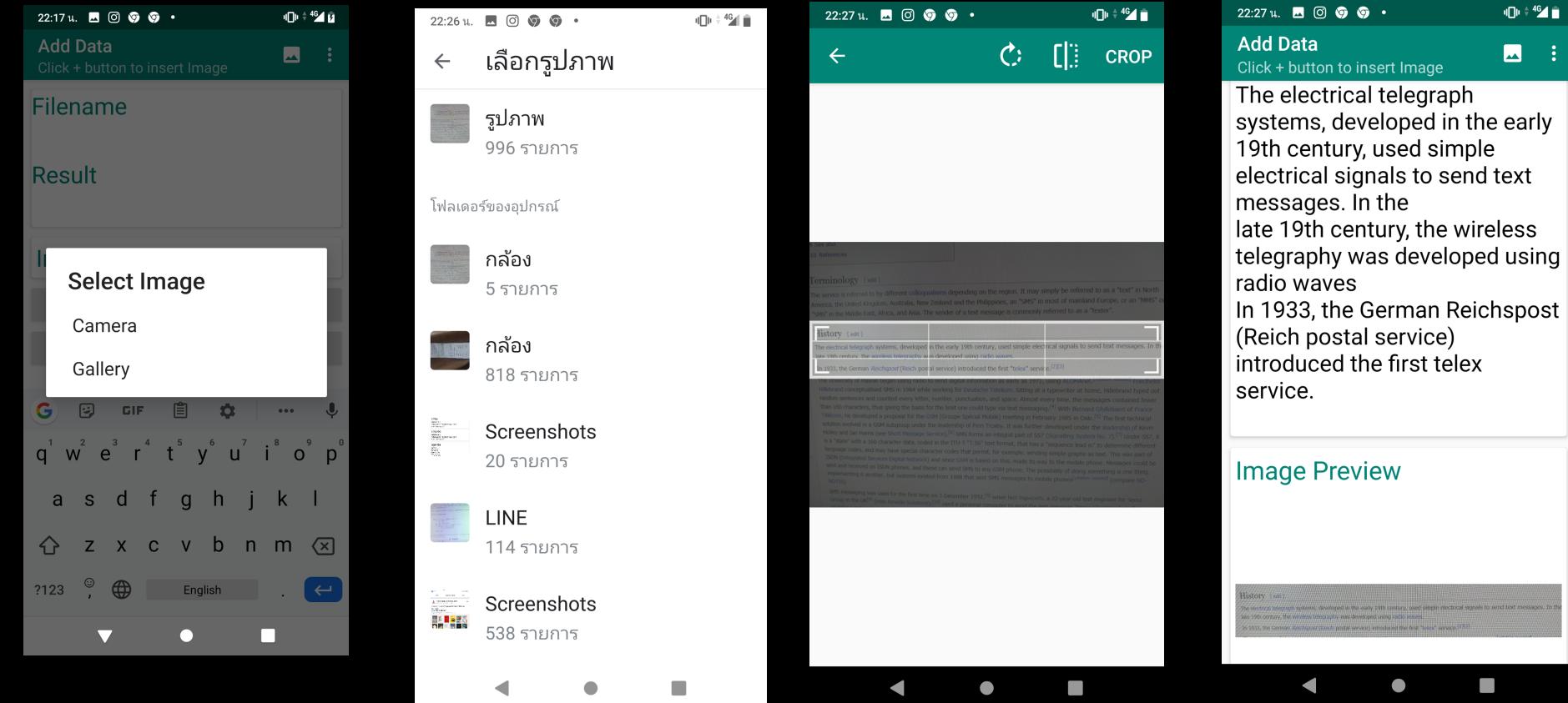
Use camera



# EXPERIMENTAL RESULTS

## Text Recognition

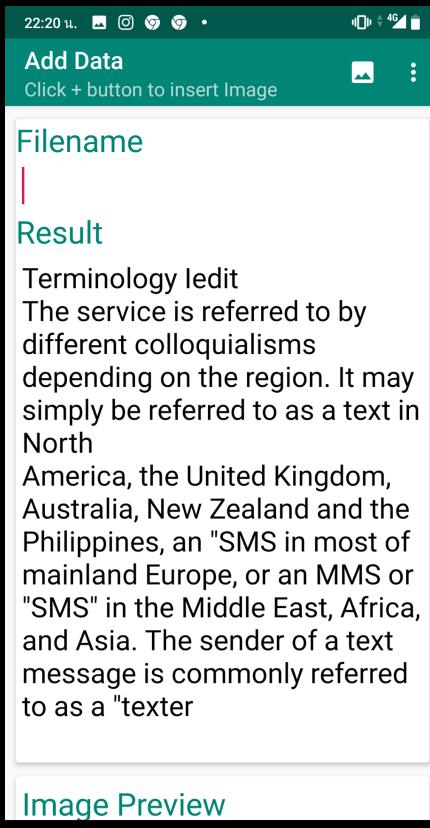
Use gallery



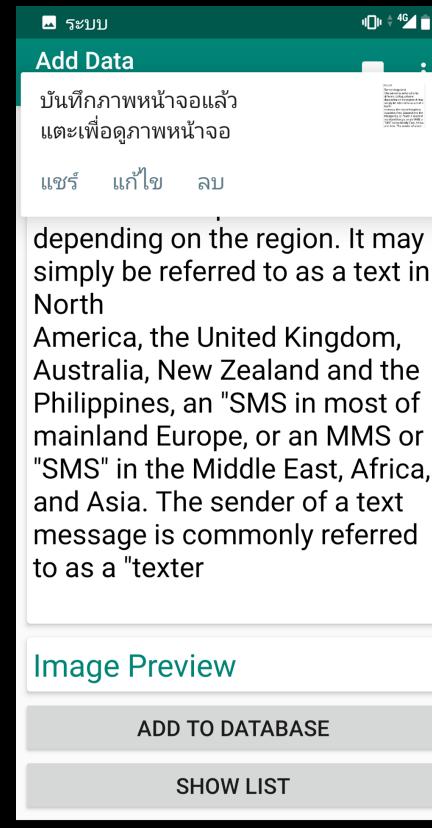
# EXPERIMENTAL RESULTS

## Text Recognition

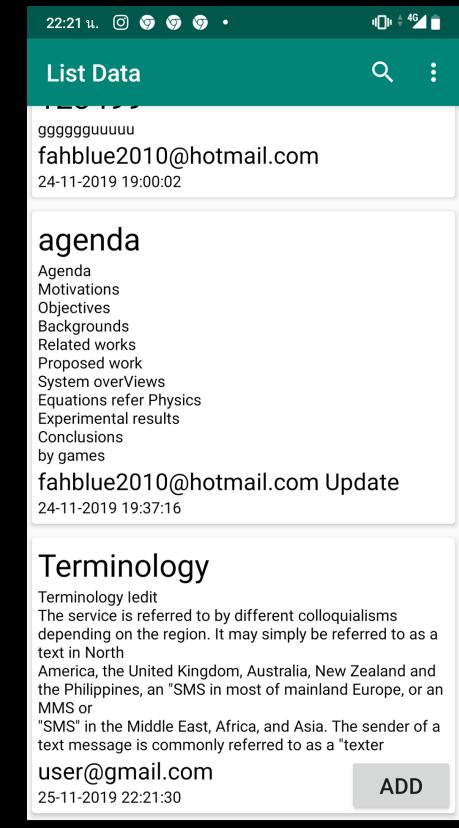
### Set filename



### Add to database



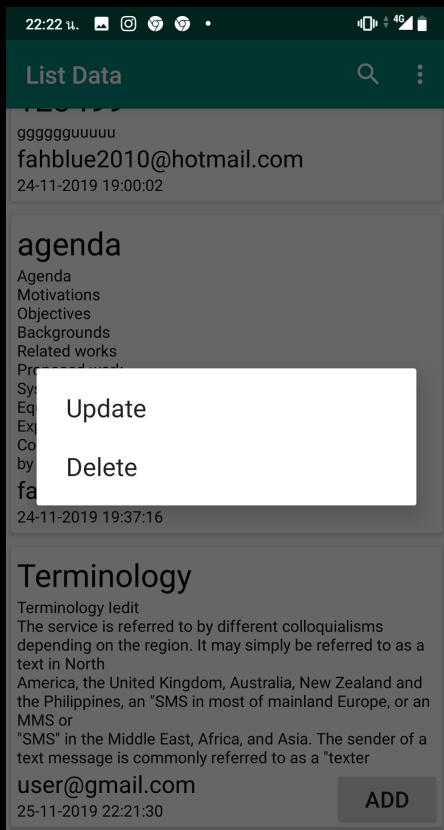
### Show list



# EXPERIMENTAL RESULTS

## Text Recognition

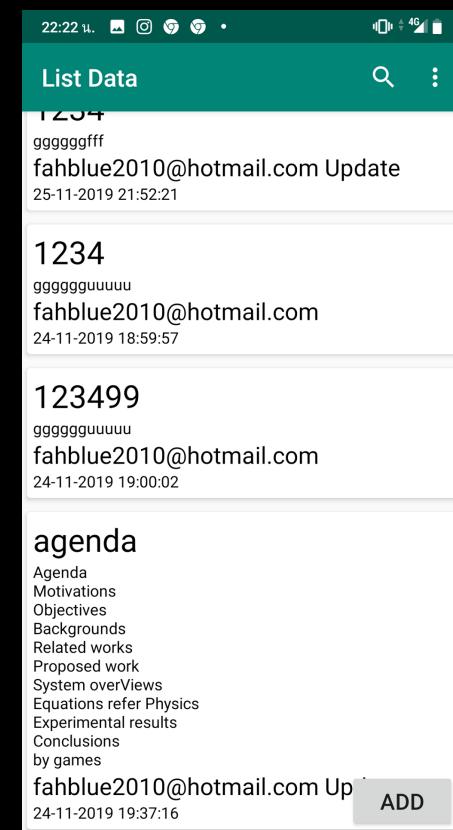
### Use feature list



### Update list



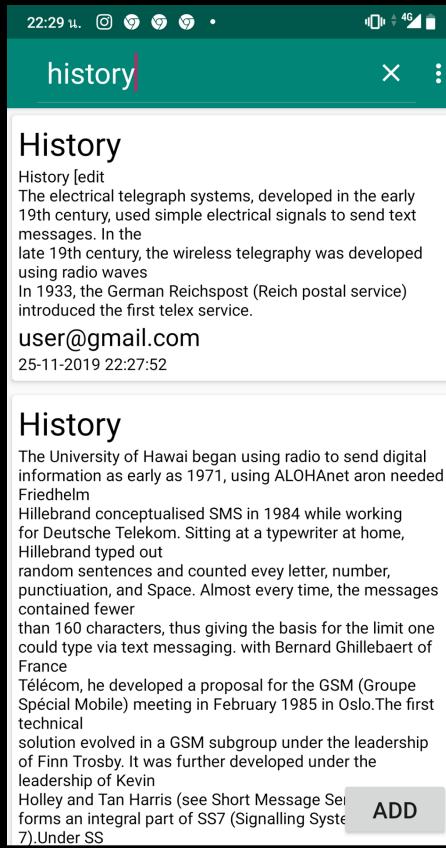
### Delete list



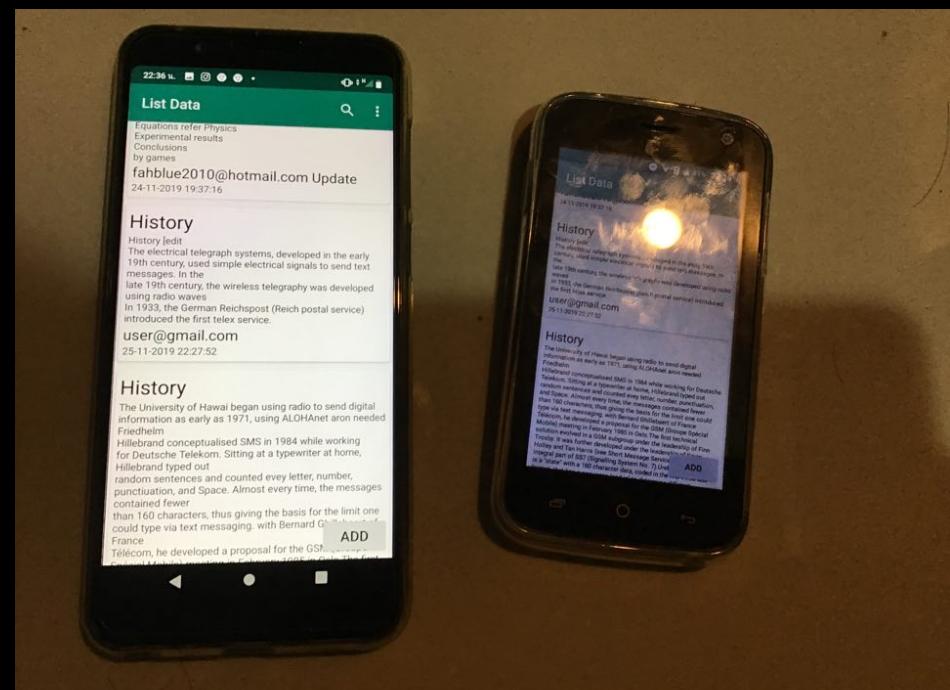
# EXPERIMENTAL RESULTS

## Text Recognition

### Feature search



### Use another device



# EXPERIMENTAL RESULTS

## Text Recognition

## Authentication

## Database

The screenshot shows a mobile application interface. At the top, there is a search bar with the placeholder text "ค้นหาตามที่อยู่อีเมล หมายเลขโทรศัพท์ หรือ UID ผู้ใช้". Below the search bar are two buttons: "เพิ่มผู้ใช้" (Add User) and a circular icon with a plus sign. The main area displays a list of users:

ตัวระบุ	ผู้ให้บริการ	ส่วนกลาง	ลงชื่อเข้าใช้แล้ว	UID ผู้ใช้
fahblue2010@gmail.com	✉️	19 พ.ย. ...	23 พ.ย. ...	VCfl3rg37Zcp8pUbd45...
user@gmail.com	✉️	25 พ.ย. ...	25 พ.ย. ...	VyY89WPyn0hmscsDm...
fahblue2010@hotmail.com	✉️	19 พ.ย. ...	25 พ.ย. ...	otq3Dbz3T3TayRGfgjnp...

At the bottom, there is a pagination control showing "จำนวนผลลัพธ์: 50" and "1-3 จาก 3".

The screenshot shows a database interface with a sidebar menu and a main content area. The sidebar includes options like "บันทึกของลูกค้า", "เพิ่มเอกสาร", "เข้าสู่ระบบ", and "ออกจากระบบ". The main content area shows a list of documents under the category "Documents". A specific document is selected, showing its details:

Details for document ID 1574695672428:

- Date: "25-11-2019 22:27:52"
- Filename: "History"
- id: "1574695672428"
- search: "history"
- text: "History [edit] The electrical telegraph systems, developed in the early 19th century, used simple electrical signals to send text messages. In the late 19th century, the wireless telegraphy was developed using radio waves. In 1923, the German Reichspost (Reich postal service) introduced the first telex service."
- user: "user@gmail.com"

# EXPERIMENTAL RESULTS

Example database

ID	Filename	Text	Date	User	seach
1574695672428	History	History [edit The electrical telegraph systems, developed in the early 19th century, used simple electrical signals to send text messages. In the late 19th century, the wireless telegraphy was developed using radio waves In 1933, the German Reichspost (Reich postal service) introduced the first telex service.	25-11-2019 22:27:52	user@gmail.com	history

# CONCLUSIONS

- This Application can use camera to recognize characters.
- This Application can use camera image from the gallery to recognize characters.
- This Application can send text to another device
- This Application can edit text and upload to database
- Accurate character detection depends on the sharpness of the image. If the image is more accuracy.

# SUGGESTION

- Develop OCR feature to be more accuracy
- Develop UX/UI to be more friendly user

Thank you for  
your attention

Any comments.