S S H
(SMS Share Hub)

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Motivation

Motivation - Wasted Free SMS

Many users have unused free SMS quotas.

項目	中華電信	台灣大哥大	遠傳電信	亞太Gt	台灣之星
資費類型	4G學生	4G學生	4G學生	4G學生	4G U25
申辦資格	限學生或NP	限學生或NP	限學生或NP	限學生或NP	限12-25歲申辦
攜碼同享學生優惠	有	全通路	全通路	限經銷通路申辦	無
月租費	587/787/987	598/798/998	599/799/999	498/698/898	599
上網優惠(GB)	5/7/9 (前六個月上網吃到飽) (787 前12月吃到飽) (987 攜碼吃到飽)	5/7/9 (前6個月上網吃到) (798NP前12月吃到飽)	5/7/9 (前6個月上網吃到) (799NP前12月吃到飽)	5/7/吃到飽 (前6個月上網吃到)	上網吃到飽
網內免費	熱線1門/5門/免費	17:00~20:00免費	17:00~20:00免費	免費	免費
免費網內語音(分)	250/500/網內免費	前5/10/10	前5/10/10	免費	免費
免費網外語音(分)	35/50/65	30/40/50	30/40/50	40/50/80	40/90/120
免費市話語音(分)	35/50/65	無	無		無
免費網內簡訊(則)	200/250/300	無	200/250/300	免費	150/160/200
網外(區外)	0.1/秒	0.11/秒	$0.08/秒	0.1/秒	0.1/秒
市話	0.1/秒	0.1/秒	$0.12/秒	0.1/秒	0.1/秒
網內/外簡訊	$1/$1	0.8697/1.7394	$2.6127/$2.6127	$0/$1.5	$1/$1
綁約(月)	30	30	30	30	30
申辦通路	NP免學生證限經銷通路	不限	不限	NP限經銷通路	不限

Motivation - Continued Demand for SMS

Despite modern messaging apps, SMS is still needed in various scenarios (e.g., service notifications, verifications).
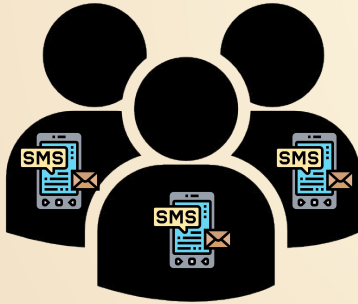
Motivation - **Matching Both Needs**

- One Side (User): Provides free SMS.

- Other Side (Shop): Offers incentives (e.g., send a few SMS messages to get reduced registration fees or restaurant discounts).
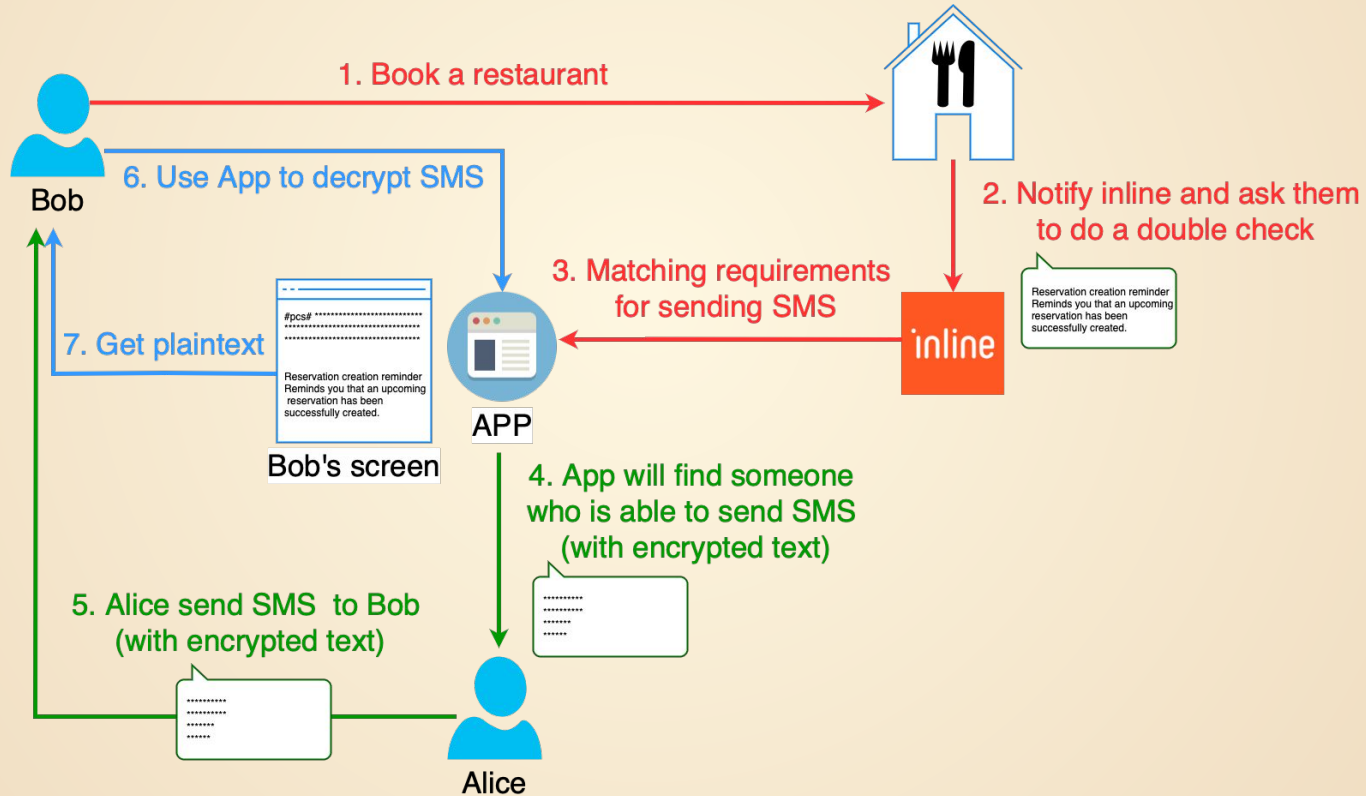
SSH

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System Overview

Setup

- **Development Environment:**
  - IDE: Android Studio Ladybug | 2024.2.1
  - Emulator Version: Small Phone API 31 (Android 12.0)

- **Database:**
  - SQLite

- **Programming Language:**
  - Java

Overview

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Components

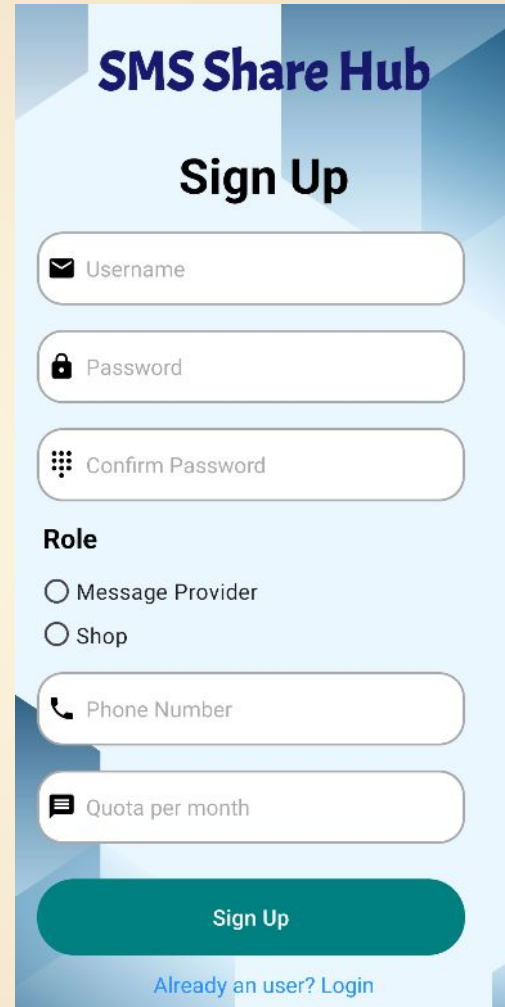# Three Roles

Shop

inline

Short message Provider

Alice

Short message Receiver

Bob

Registration

- **Username**
- **Password**
- **Role**
  - **Message Provider**
  - **Shop**
- **Phone number(for Message Provider)**
- **Quota per month(for Message Provider)**

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Short message Provider

1. Matching requirements for sending SMS

APP

2.1 find someone who is able to send SMS

User data

2.2 App will store the (phone, message) in the database

Short message

3. App ask Alice to send SMS to Bob (with encrypted text)

Bob

Alice

database

User data — (username, role, task, quota)

Short message — (ID, phone, message)
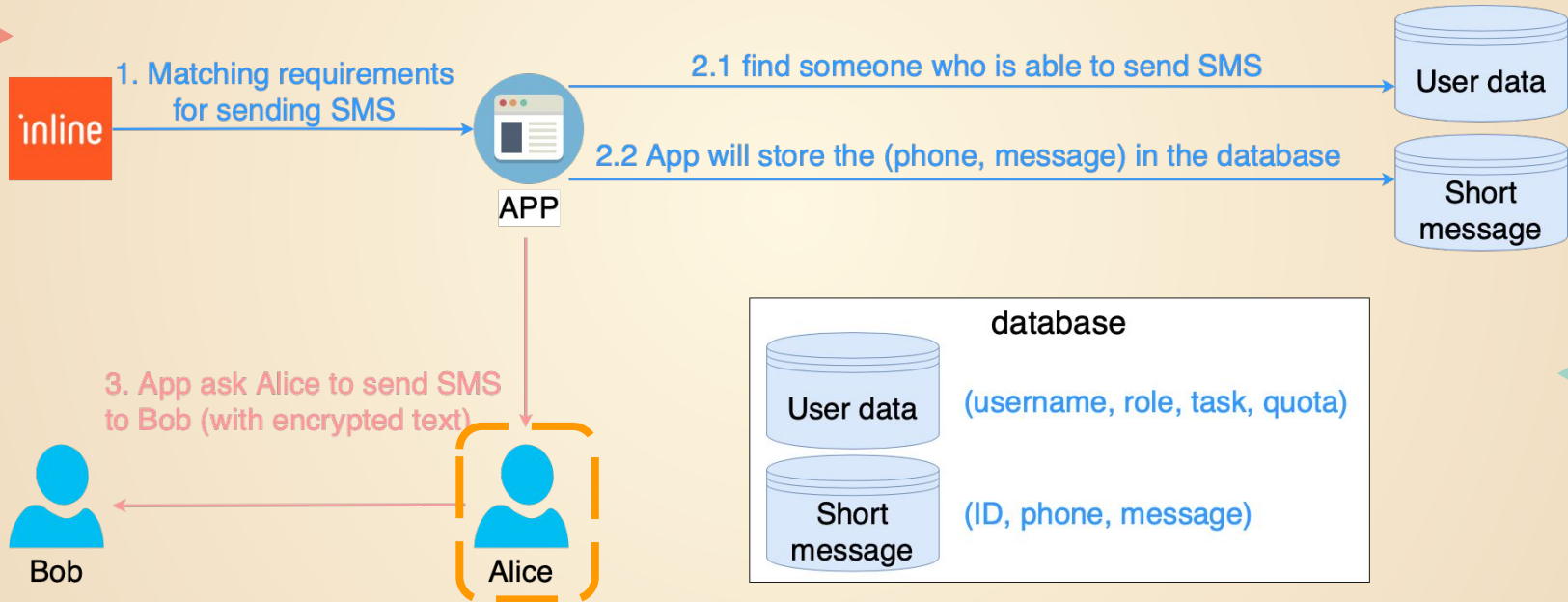
Short message Provider - Shop
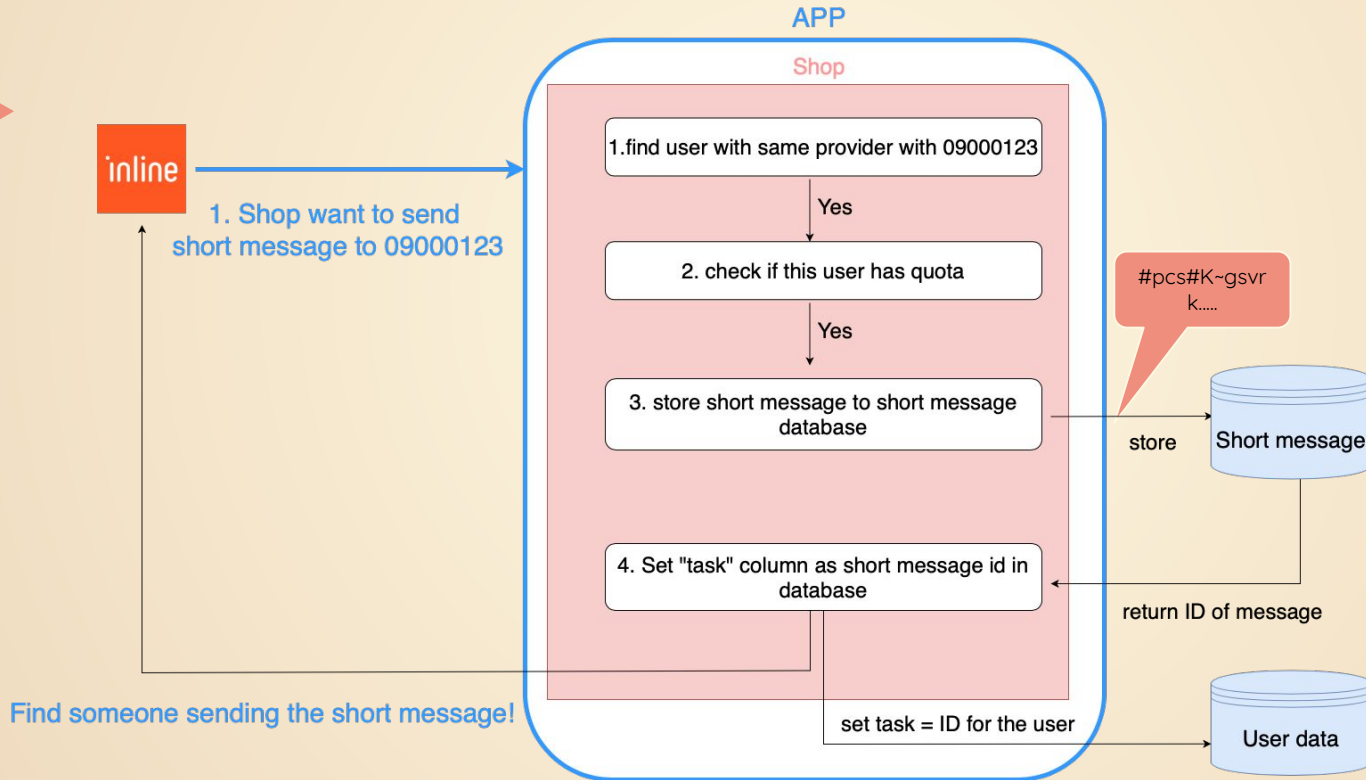
Short message Provider - User
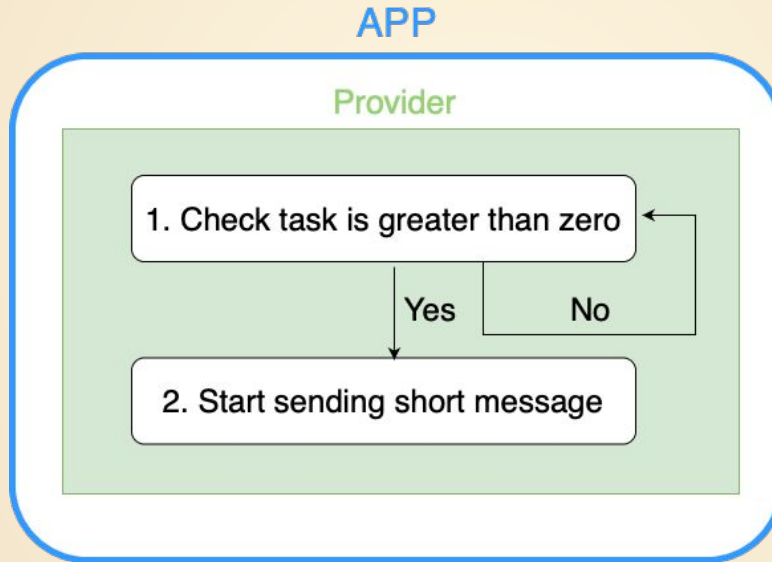
Short message Provider - Receiver

6. Use App to decrypt SMS

6.1 scan all received SMS messages
6.2 display messages starting with " #pcs# "
6.3 encryped and show the plain text

Bob

7. Get plaintext

APP

5. Alice send SMS to Bob
(with encrypted text)

Alice

#pcs#K~gsvrk

#pcs#Xkykx|gzout ixkgzout
xksotjkxXksotjy u{ zngz gt
{viusotm xkykx|gzout ngy h
kkt y{iikyyl{rr ixkgzkj4

Example

Reservation creation reminder
Reminds you that an upcoming
reservation has been
successfully created.

Bob's screen

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Demo

Demo

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Conclusion & Future work

Conclusion

- To maximize the utilization of SMS quotas for users, we have developed this application to benefit both businesses and individual users.

- The app maintains a database that securely stores data from users and shops. Using this database, it automatically assigns a user to send an encrypted SMS for a shop.

- The recipient can then decrypt the message into plain text using our app.

Future Work

- Support international SMS networks.

- Add controls to prevent users from exceeding set quotas.

- Enable file uploads (e.g. Excel) for mass SMS transmission.

- Enhanced Privacy and Security:

  - Implement advanced encryption protocols during transmission.

  - Introduce anonymous message routing.

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QA

Thanks!