



2021

SHARING BICYCLE PROJECT





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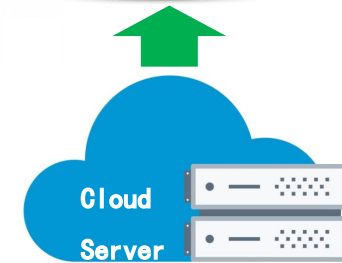
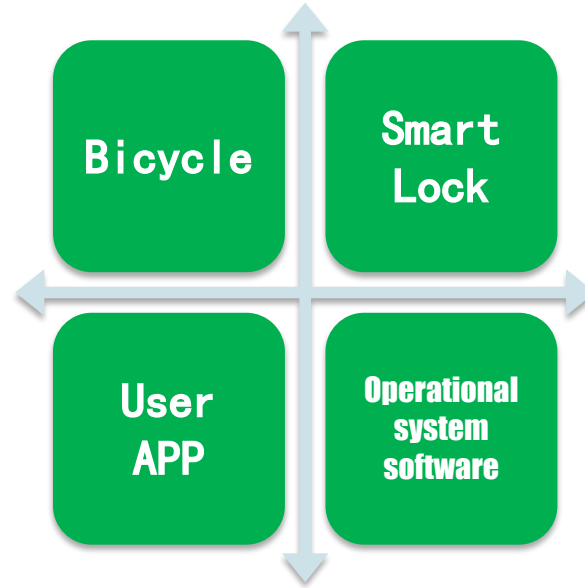
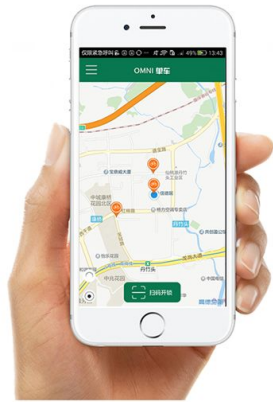
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Technical docking of sharing bicycle project

01

**Composition of
sharing bicycle
projects**

1.1 Composition of sharing bicycle projects



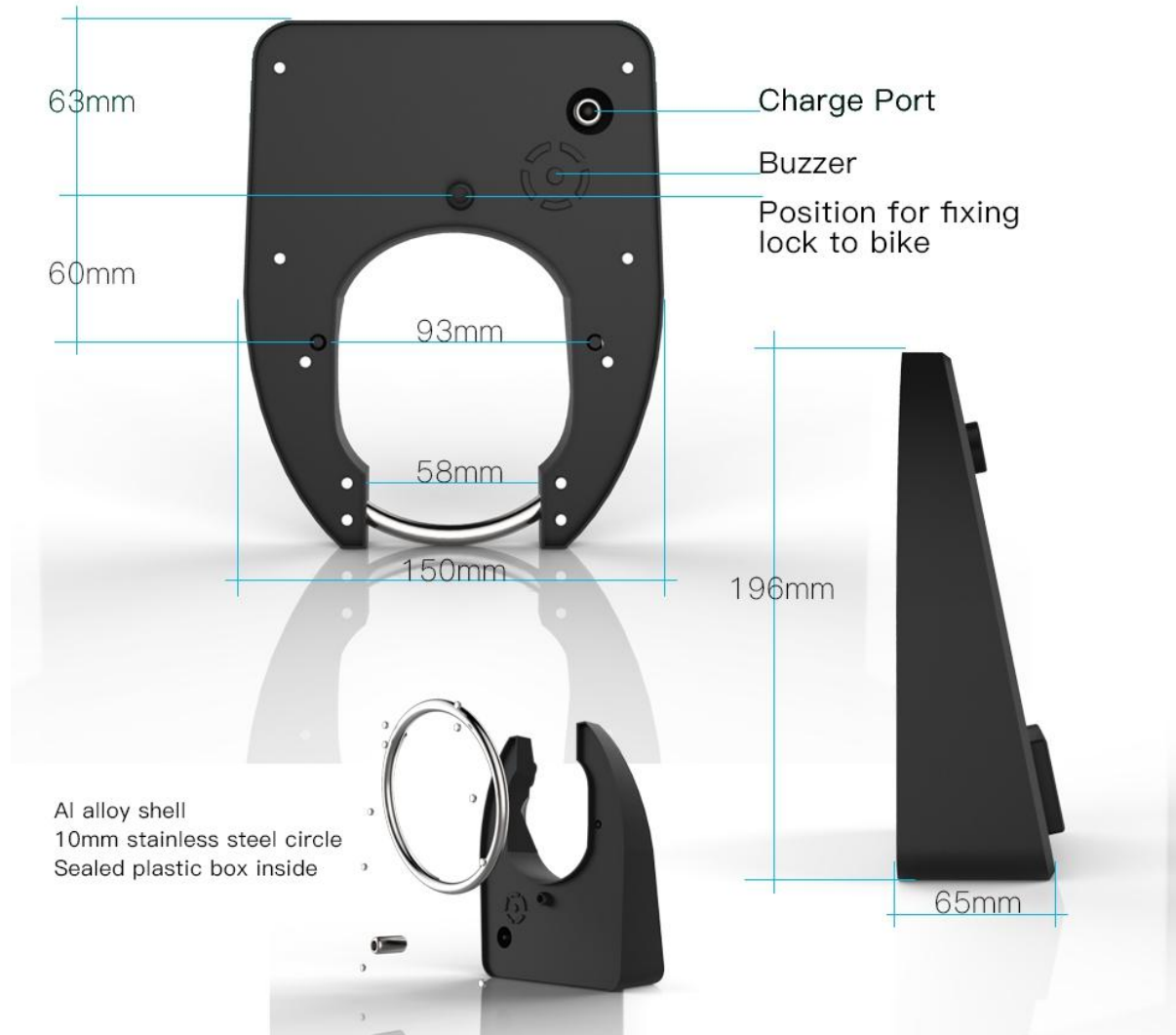
02

**Introduction and
application of
bicycle lock**

2.1.1 Structure and size of bicycle lock




Construction & Size



2.1.2 Structure and size of bicycle lock



Built-in sensor,
buzzer alarm 



 **Waterproof**

Can also be used normally in water

Drop




The material of aluminum alloy will not be easily broken

Polymer Battery,
Low Voltage Alarm 

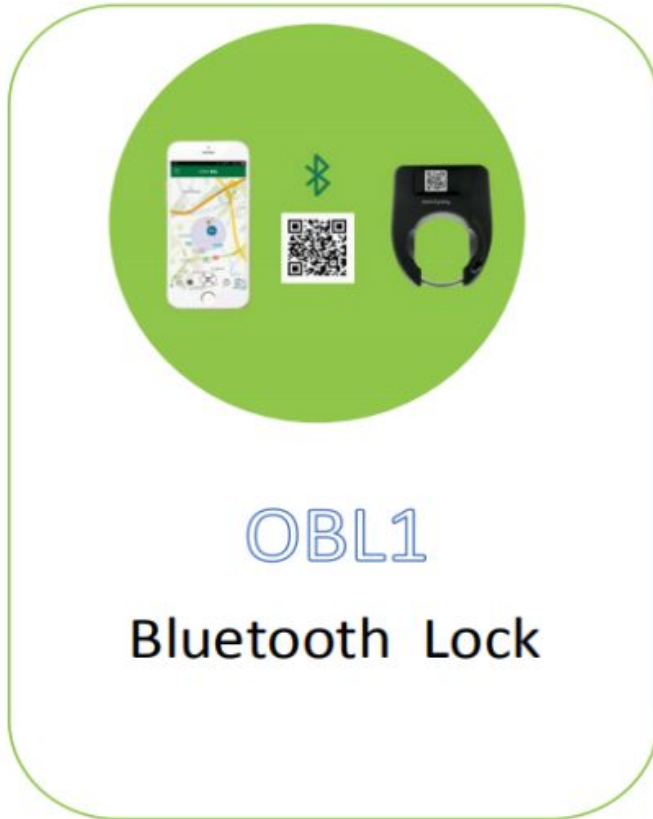
Low Power consumption, long standby time



2.2 version of the bicycle lock

NO.	Model	Picture	Function	Battery capacity	Features
1	OBL1		Bluetooth	8000mAh	1. Bluetooth connection&communication; 2. Low power consumption&cost.
2	OGG1		GPS&GPRS	8000mAh	1. GPRS connection&communication; 2. GPS rear time tracking. 3. built-in alarm sensor
3	OGB1		GPS&GPRS& Bluetooth	8000mAh	1. GPRS connection&communication; 2. unlock by GPRS & BLE (two options) 3. GPS rear time tracking. 4. built-in alarm sensor

2.2.1 version of the bicycle lock



Model	OBL1
Outside Size	196*150*65 (+3mm)
Weight	1.2KG
Material	Al alloy shell, 10mm stainless steel circle, sealed plastic box inside
Unlock Method	Bluetooth
Lock Method	Manual to lock
BLE Frequency	2402-2480Mhz
Battery	8000mAh
External Power	Solar Penal
Power Consumption	2~3mA
Storage Temperature	-40° C to +85° C
Working Temperature	-20° C to +65° C
IP	IP67 (completely dust-proof, rain-proof, soak 30min.)
Humidity	5%--95% non-condensing
LED Indicator [inside]	Red/ Blue

2.2.2 version of the bicycle lock



Model	OGG1
Outside Size	196*150*65 (+3mm)
Weight	1.2KG
Material	Al alloy shell, 10mm stainless steel circle, sealed plastic box inside
Unlock Method	GPRS
Lock Method	Manual to lock
GPRS Band	GSM850Mhz, EGSM900Mhz, DCS1800Mhz, PCS1900Mhz
Battery	6000maH/ 8000mAh
External Power	Solar Penal
Power Consumption	2~3mA
Storage Temperature	-40° C to +85° C
Working Temperature	-20° C to +65° C
IP	IP67 (completely dust-proof, rain-proof, soak 30min.)
Humidity	5%--95% non-condensing
LED Indicator [inside]	Red/ Blue

2.2.3 version of the bicycle lock



Model	OGB1
Outside Size	196*150*65 (+3mm)
Weight	1. 2KG
Material	Al alloy shell, 10mm stainless steel circle, sealed plastic box inside
Unlock Method	Bluetooth+GPRS
Lock Method	Manual to lock
GPRS Band	GSM850Mhz, EGSM900Mhz, DCS1800Mhz, PCS1900Mhz
BLE Frequency	2402-2480Mhz
Battery	6000maH/ 8000mAh
External Power	Solar Penal
Power Consumption	2~3mA
Storage Temperature	-40° C to +85° C
Working Temperature	-20° C to +65° C
IP	IP67 (completely dust-proof, rain-proof, soak 30min.)
Humidity	5%--95% non-condensing
LED Indicator [inside]	Red/ Blue

2.3.1 bicycle lock charging method



European standard
charger

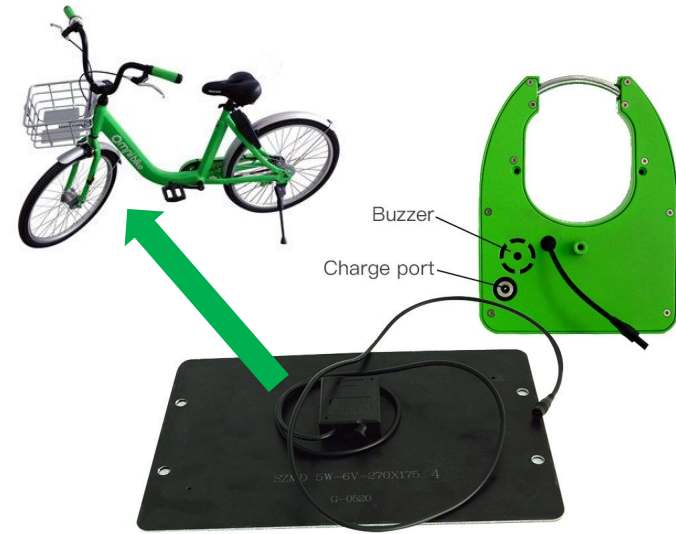


American standard
charger



Australian standard
charger

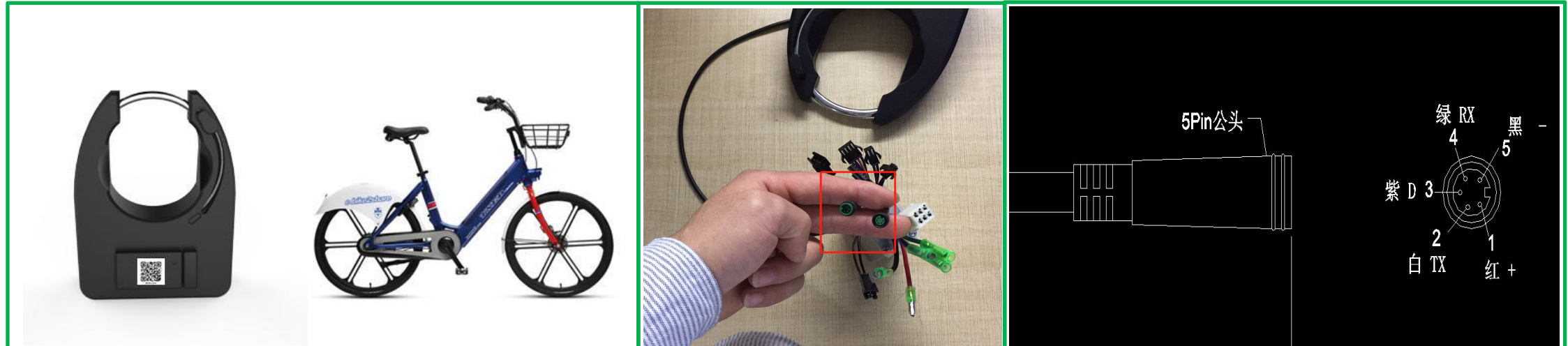
1	Adapter Charging
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Solar panel

2	Solar Panel Charging with cable
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2.3.2 bicycle lock charging method



The image is a composite of four parts. On the left, a black smart lock is shown next to a blue and white electric bicycle. In the center, a hand holds a 5-pin connector with a red box highlighting the pins. On the right, a wiring diagram shows a 5-pin connector with labels: 1 (Red +), 2 (White TX), 3 (Purple D), 4 (Green RX), and 5 (Black -).

① Smart Lock + ② Electric Bicycle +

5Pin公头

紫 D 3
绿 RX 4
白 TX 2
红 + 1
黑 - 5

The bicycle lock is connected to the controller of the electric bicycle through the 5-pin line, and the controller is used as an intermediary to obtain the electric energy of the bicycle battery through the BMS (battery management system) to perform charging.

3

Electric bicycle docking bicycle lock for power supply

2.4 Application scenario of bicycle lock



A green speech bubble graphic with a white outline, pointing downwards and to the left. The bubble is filled with a solid green color and has a white border. The text inside is white.

03

**APP and Back-end
management
system**

3.1.1 APP download

Android APP

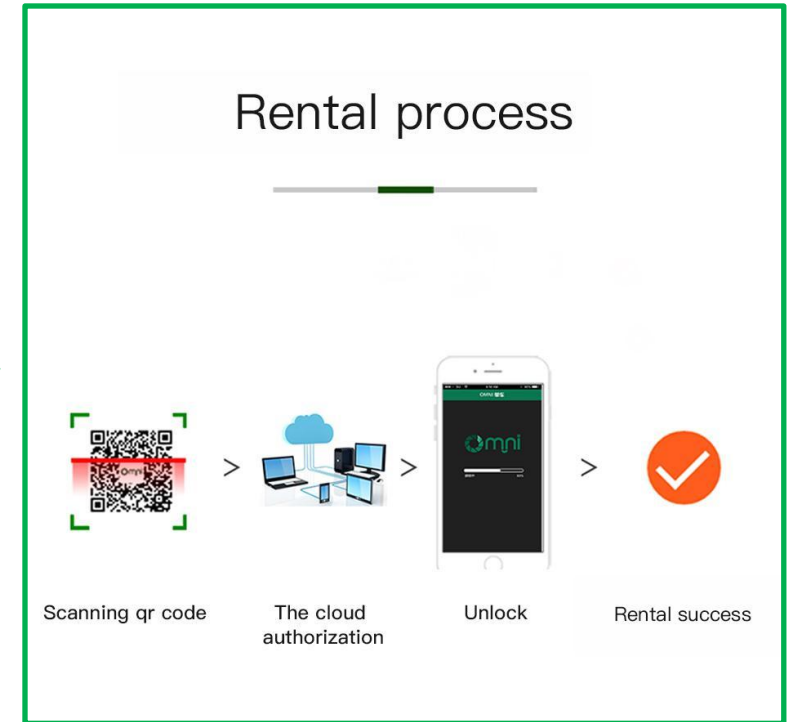
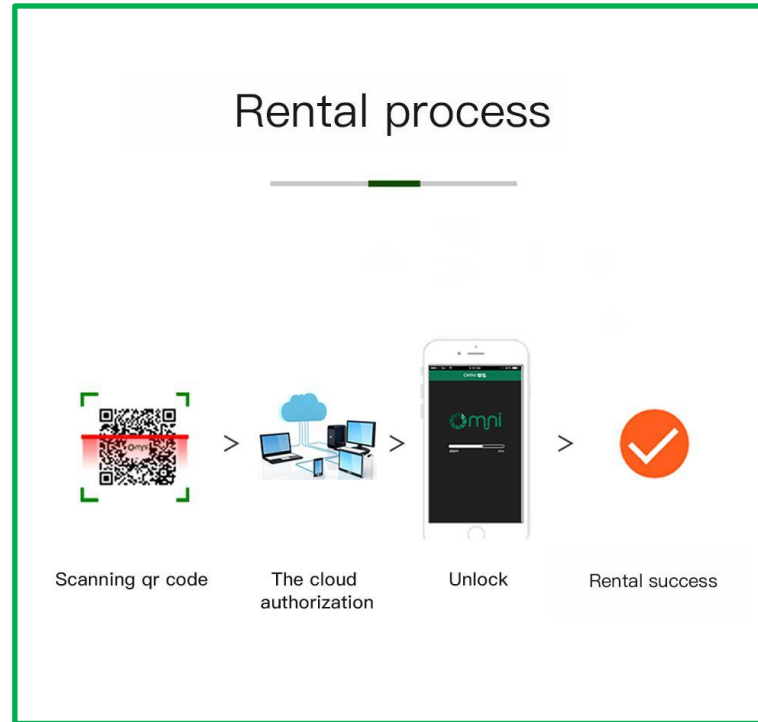
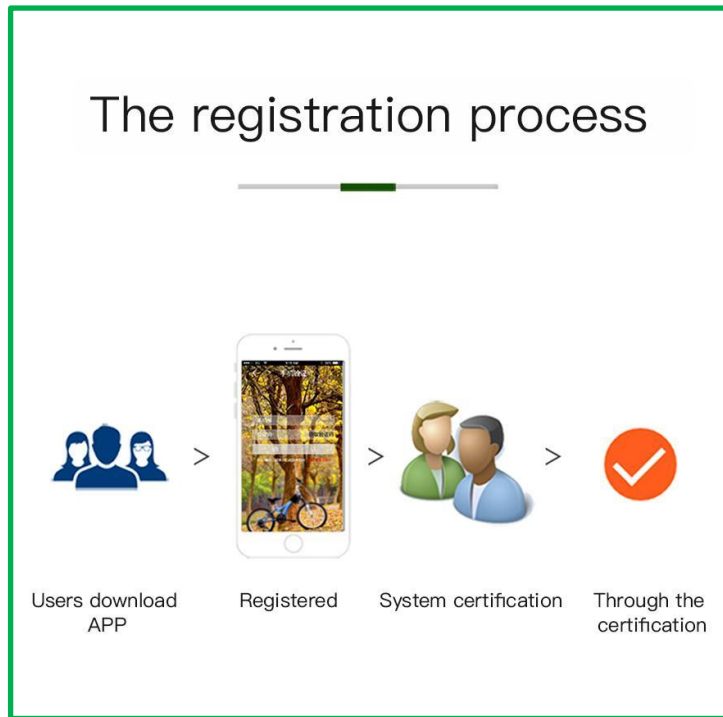


IOS APP

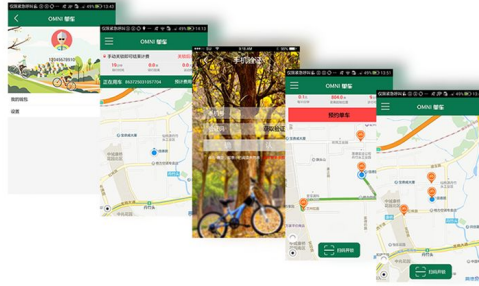


Scan the QR code above to download the app

3.1.2 Use of APP

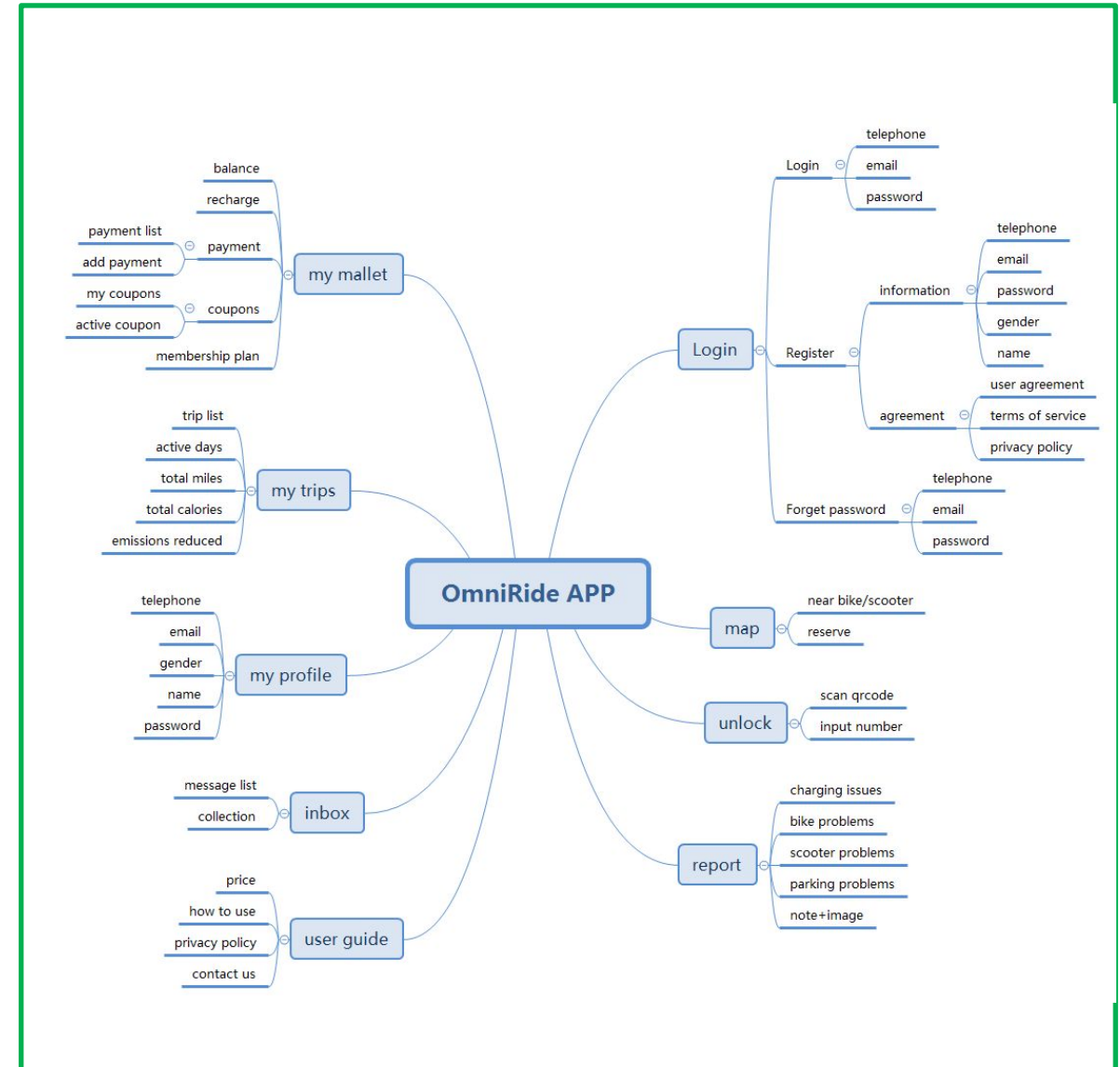


3.1.3 Function of the APP



Function List

1	User login, registration, recharge (registered by mobile phone number, real name authentication required)
2	All free bicycles on the map (unused, unreserved bicycles)
3	Click on the bicycle on the map to get the path plan from the user's current location to the bicycle location.
4	Booking a bicycle (other users cannot unlock after making an appointment) can cancel
5	Unlock by scanning the QR code or entering the bike lock number
6	End of the ride, lock the billing
7	View historical cycling records (including information on each ride, time, cost, etc.)
8	User modify basic information (avatar, nickname, etc.)
9	Information feedback (bike unlocking failure, damage, dirt, etc.)
10	Share cycling data to social platforms and recommend them to friends.



3.2.1 Demonstration of the backend management system

Omni backend server address <http://server.omnibike.net:8088/OmniShareLock/admin>

The screenshot displays the 'Omni Share Management system[Demo]' interface. At the top right, it shows the date '2019-08-27 16:56:21', language 'English', area 'All', and a 'Log out' button. A green arrow points from the URL in the text above to the 'Log out' area.

The main interface includes a left sidebar menu with categories like 'Bike management', 'Lucky bike management', 'Area management', 'User management', 'Finance', 'Coupon management', 'System config', 'Setting', 'Mailbox management', and 'Notification'. The 'Bike management' section is expanded to show 'Bike List'.

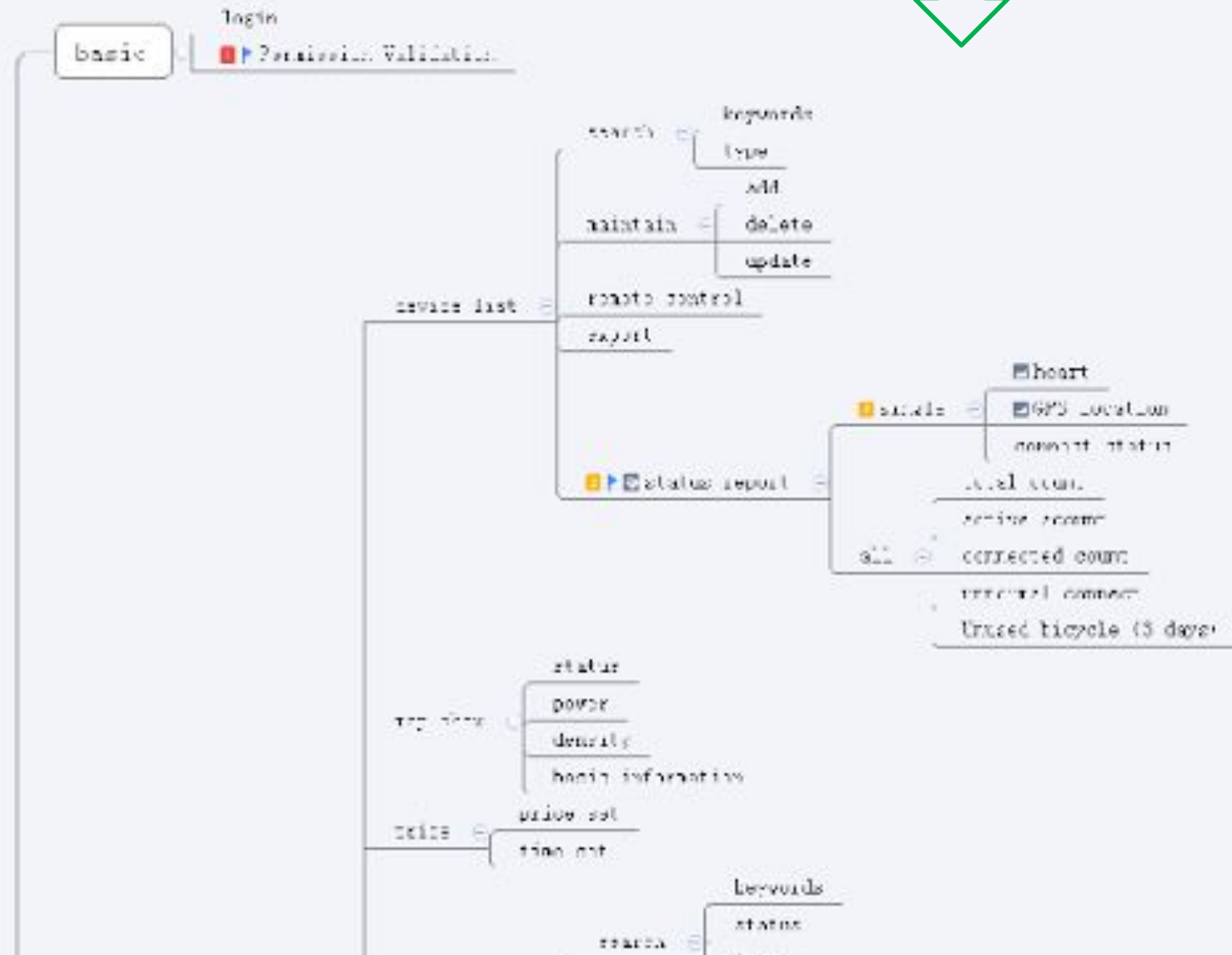
The main content area features a search bar with 'Keywords: number or imei', status, lock type, error, and online filters. Below this is a toolbar with icons for 'Add', 'Delete', 'UnLock', 'Location', 'Info', 'Version', 'Find', 'ShutDown', 'Show in map', 'Edit', 'Statistics', 'Upgrade', 'Mac', 'Detail', 'Lock', and 'ReStart'. An 'Export' button is also present.

The central part of the interface is a data table with the following columns: ID, ID, IMEI, MAC, Operating, Power, Heart Time, Status, Ride count, Last Ride Time, GPS Time, GPS Longitude, GPS Latitude, and Lock type. The table contains 30 rows of data, showing various bike statuses such as 'Locked[offline]', 'Locked[Fall][offline]', and 'Locked[online]'. The status 'Locked[offline]' is the most common.

At the bottom of the table, it says 'Display 60 a total of 1,464'. On the far right, there are navigation buttons for 'Index', 'Previous', '1', '2', '3', '4', '5', '6', 'Next', and 'Last'.

3.2.2 Backend management system function list

The back-end management system has a long mind map. Please exit the PPT full screen and pull down the entire content.



3.2.3 Map display of backend management system

Omni Share Management system[Demo] | 2019-08-27 16:49:33 | Language: English | Area: All | Log out

Precise positioning

- ID:66755005047
- IMEI:867584031209112
- GPS Time:2019-05-07 21:26
- GPS Latitude:55.7266557485352
- GPS Longitude:37.59578338094848
- Power:79
- Heart Time:2019-03-13 00:51
- Status:Locked
- Error:Normal
- Lock type:Scooter
- [Update](#)
- [Add Lucky bike](#)

Geofence

The screenshot displays the 'Omni Share Management system' interface. On the left is a 'Menu' sidebar with categories like 'Bike management', 'Lucky bike management', 'Area management', 'User management', 'Finance', 'Coupon management', 'System config', 'Setting', 'Mailbox management', and 'Notification'. The main area shows a world map with numerous colored pins representing bike locations. A green arrow points to a specific pin, which has a popup window displaying detailed information for bike ID 66755005047. Another green arrow points to a red-shaded area on a map inset, labeled 'Geofence'. The top right corner shows the date and time (2019-08-27 16:49:33), language (English), area (All), and a log out button. The bottom right corner has a Google logo and copyright information: '地图数据 ©2019 GS(2011)6020 Google, INEGI 使用条款'.

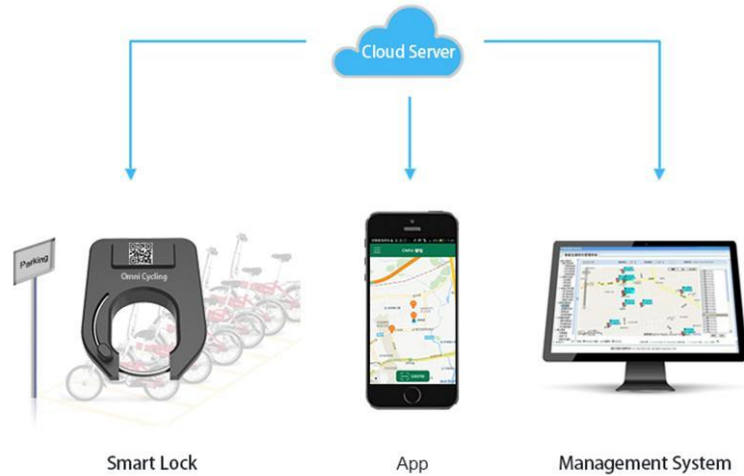
A green speech bubble graphic with a white outline, containing the number 04 and the title text.

04

**Technical docking
of sharing bicycle
project**

4.1 Technical docking of sharing bicycle project

Operation Management System



Bluetooth Smart Lock Air interface Protocol

OBL1 bicycle lock <-----> Software



Bluetooth smart lock Air Interface Pi



GPS+GPRS Smart Lock Air interface Protocol

OGG1 bicycle lock <-----> Software



GPRS+GPS smart lock Air Interface Pi



GPS+GPRS+BLE Smart Lock Air interface Protocol

OGB1 bicycle lock <-----> Software



GPRS+GPS+BLE smart lock Air Inter



2019

Thanks for watching

Producer: Seeker Zhao

