

Final Year Project I

Class Attendance System

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Content

01

PART ONE

Introduction

02

PART TWO

Why special

03

PART THREE

We have done

04

PART FOUR

Resources

05

PART FIVE

Conclusion

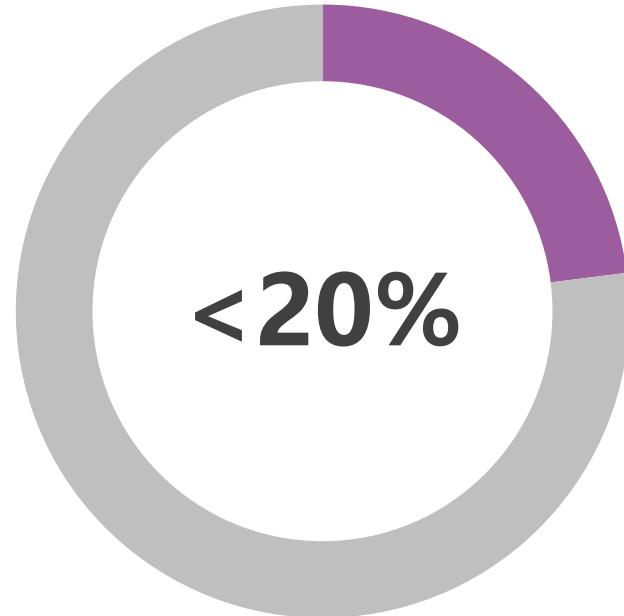


Part one

Introduction

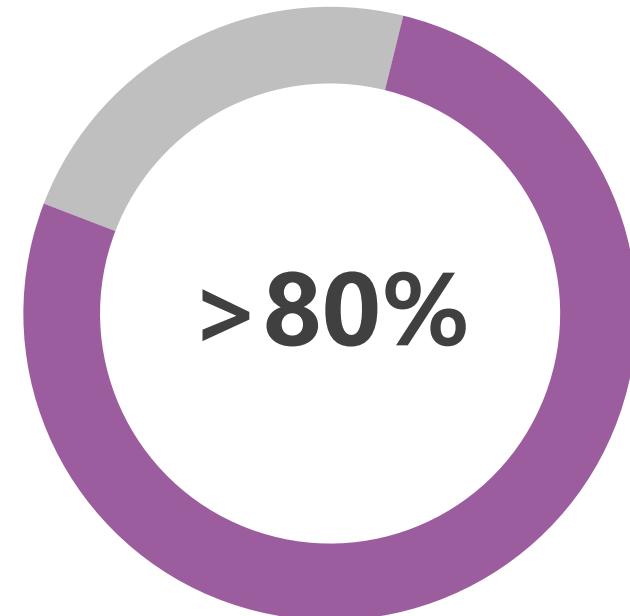


Existing ways to take Attendance



iSpace Attendance

- Taking attendance online
- Easy to get result
- Available in web page only



Paper Attendance

- More convenient
- Easy to get result
- BUT also easy to cheat



Other attendance takers

iSpace – Moodle Mobile

- **Not convenient**
 - takes many steps to set or take attendance
- **Easy to cheat**
 - Students can submit their own check-in status
 - click ‘present’ in radio group
 - submit your choice



▼ 13 July 2015 14:55

Optional workshop (self-marked)

Mary Learner:^{*}

Present Late Excused Absent

Save changes

Cancel



The screenshot shows the Feishu app interface with the following data:

Category	Description	Count
平均工时	work hour	7.8 小时
外勤	people in the field	2 人
迟到	Late	2 人
早退	Leave early	0 人
缺卡	Not clocked	21 人 >
旷工	Absenteeism	0 人

Below the statistics, there are links for "考勤组排行" (Attendance Group Ranking), "全勤率" (Attendance Rate), and "平均工时" (Average Work Time). At the bottom, there are four navigation icons: 打卡 (Clock In), 申请 (Apply), 统计 (Statistics), and 设置 (Settings).

Other Applications-Fly books

- **Verify identity**
 - QR-code
 - face recognition
- **Not focus on UIC users**
 - use Chinese
 - focus on companies
 - hard to operate



Part two

Why special



Two ways to take attendance

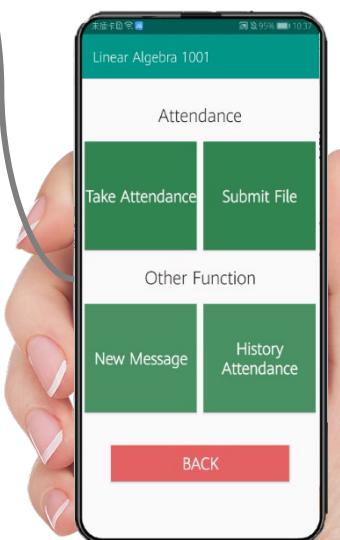
- ② If required, submit a file also (students check message from teacher in the attendance reminder)

Submit File



- ① Taking attendance by clicking button ↓

Take Attendance





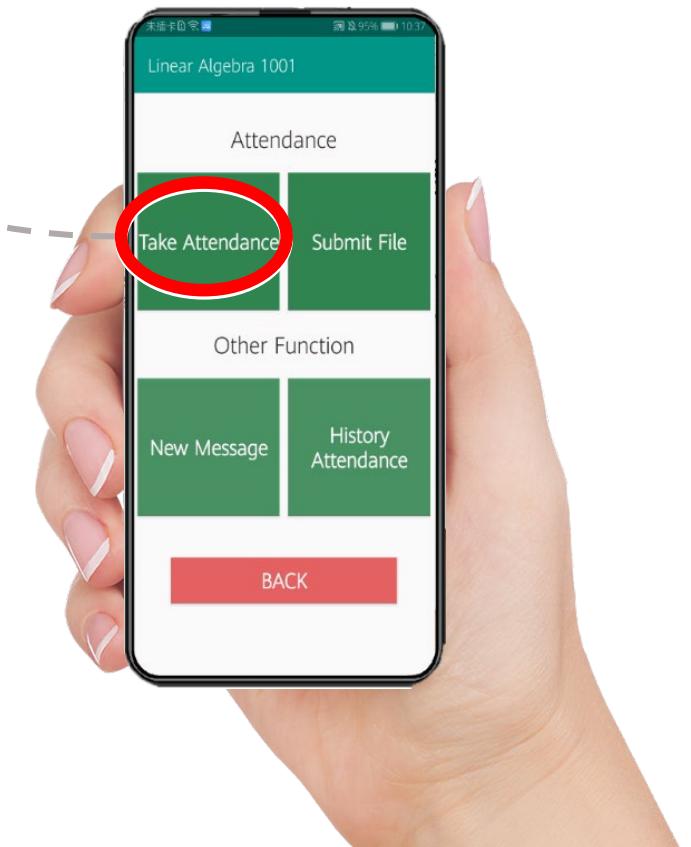
Two ways to take attendance



Data

- Timestamp
- Student information
- present location (fixed)
- course information

once the button is clicked





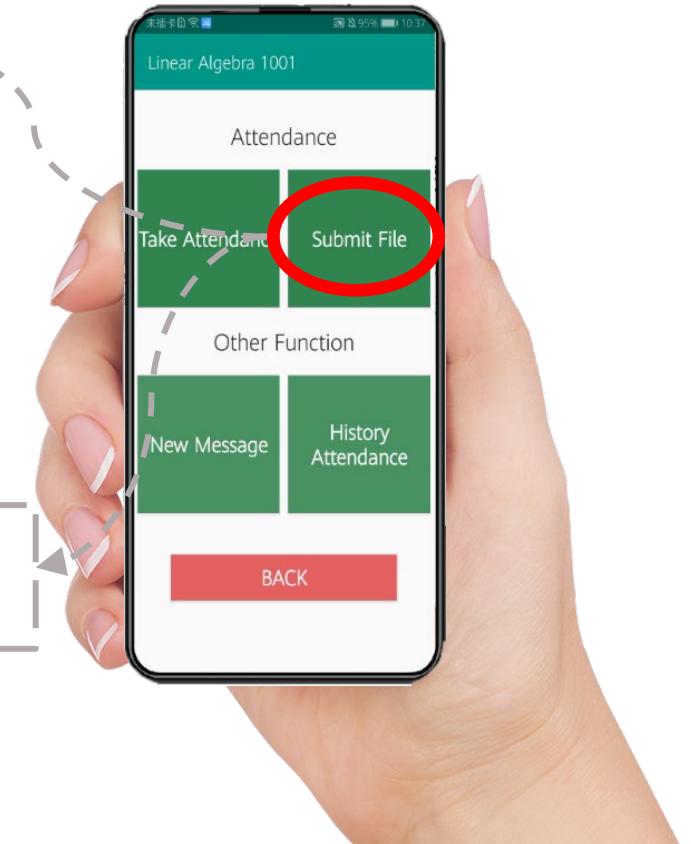
Two ways to take attendance



Data

- Timestamp
- Student information
- Course information

once the button is clicked



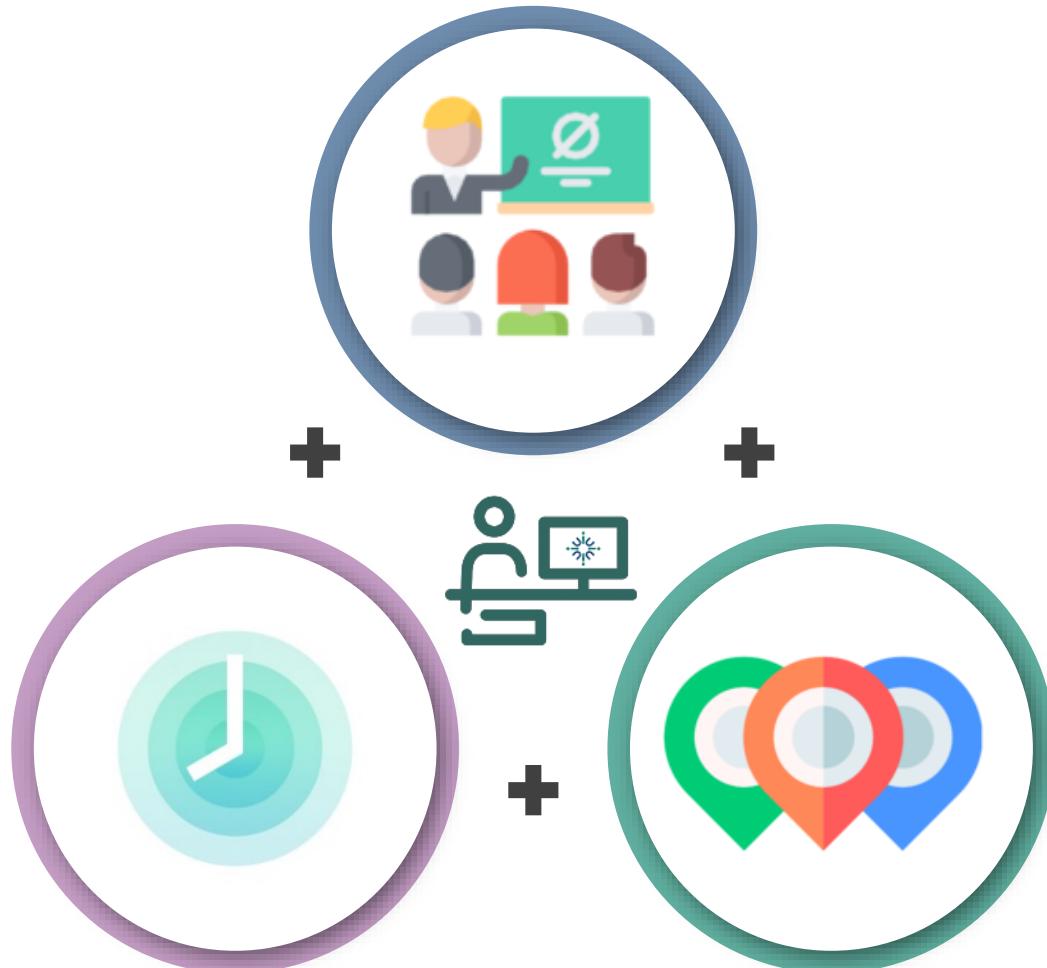
Data

- Picture information
- Binary flow file of picture

- Show album page
- Chosen picture path



Basic requirement of users



Teacher



- Setting up attendance
- View attendance for all students

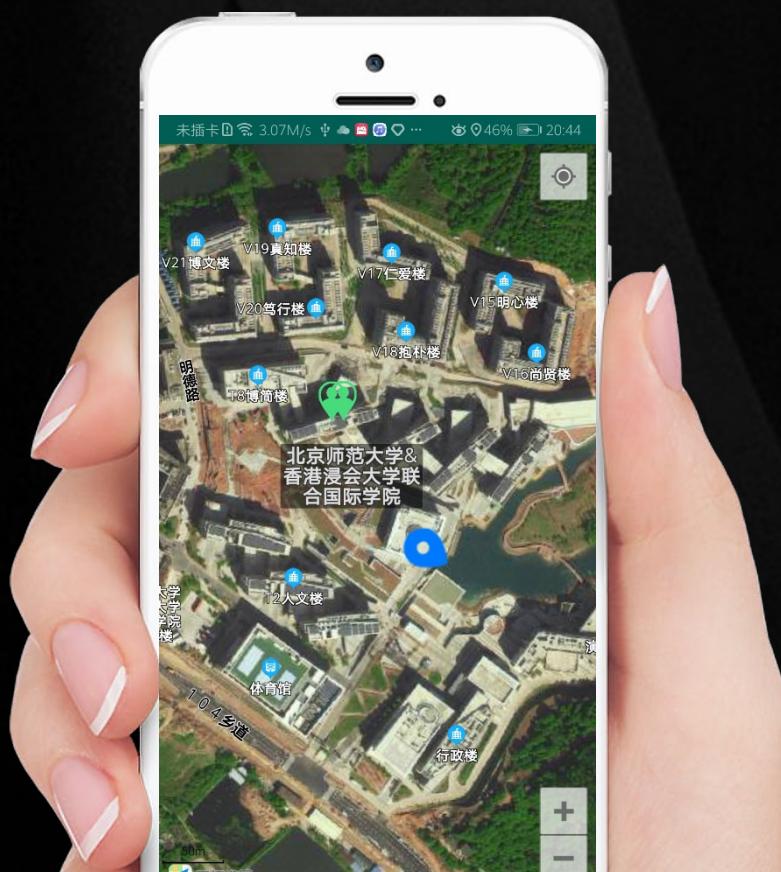
Student



- Positions are checked [<30m]
- Signing-in in class [in 15 mins]

3D map

Unlike other check-in software, the software uses a 3d map
Easier visualization, clearer view



3D map

- Specific building name and number
- Free zooming with two fingers or click on the buttons
- automatic clarity adjustment



3D map



red point : failed attendance



green point : successful attendance



blue point : user's present position





Touch to set time



Setting check-in times by the clock

Dial rotation selection Simple and accurate



rotate to select time



visualize time

With the unique touch and rotary clock input, it is more precise and ergonomic than entering them one by one



The benefits of these features



Interaction

Student-teacher sharing



Simultaneous attendance

Multiple students can take attendance at the same time



Improve check-in efficiency

Make a roll call/ → waste of time

- An android phone is enough
- Simple layouts
- Fast data transfer





The benefits of these features

Avoid cheating

- Gaode Location tracking
- Uploading picture – Online DB

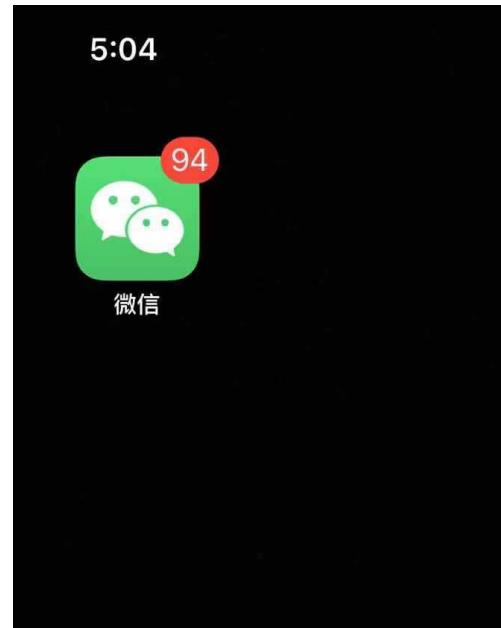
Clear message list



WeChat group or other
platforms X



single click on the
CAS app ✓



Hard to find reminders from
teacher in WeChat group



Application scope

Highly adaptable

Our software is highly adaptable.
Compatible with different Android versions
Automatic scaling



Support for continuous updating app

If in use
Software updates, fixes
and maintenance will be possible





School-wide use of the system



Provide convenience service



Wi-Fi



2G\3G\4G



Guide & Track

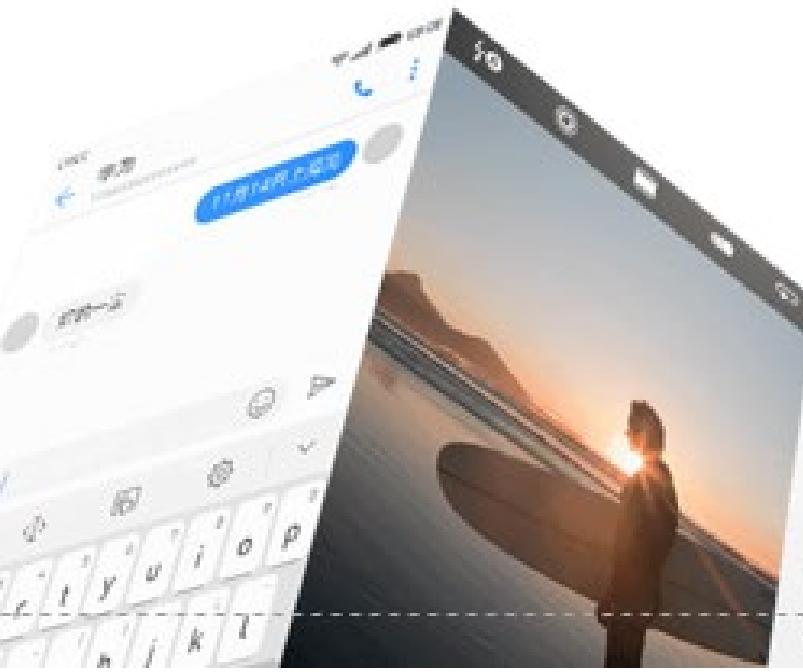


Broadcast news

- available to students as free software
- campus-wide basis
- available for Android phones

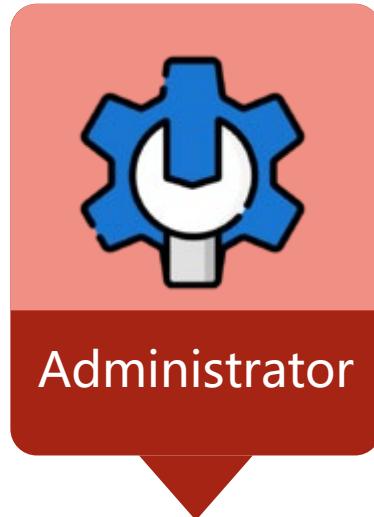
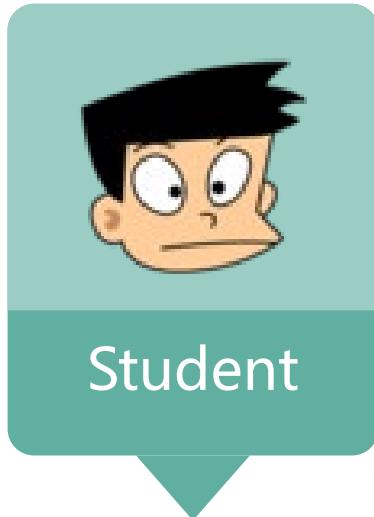
Part three

What we have done





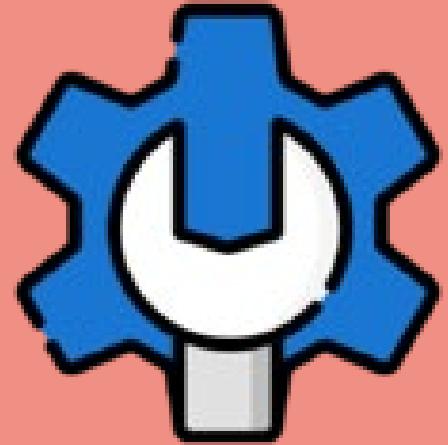
Users in App



Priority

Low

High



Administrator

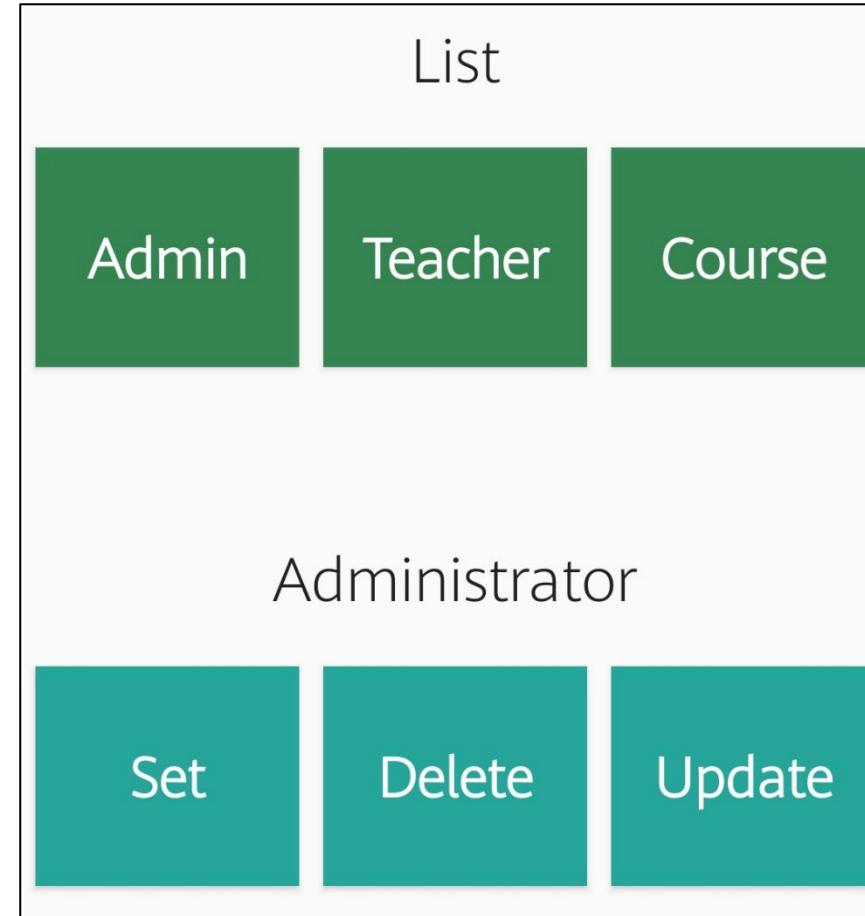


ALL Courses

Priority

Low

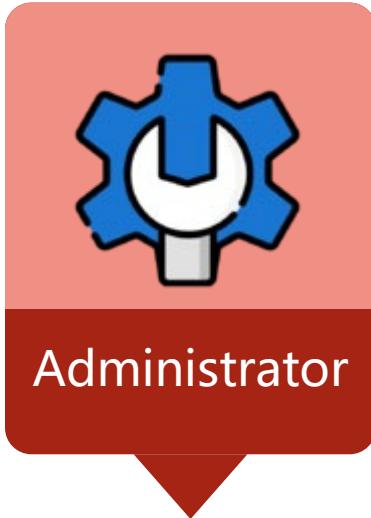
○ Main Functions



High



Administrator



ALL Courses

Priority

Low

High

O Update username & pwd

New Username At least 5 characters

New Password At least 6 characters

CANCEL

SUBMIT

BACK



ALL Courses

Priority

Low

High

○ Manage AdminTeacher

- Set a Teacher to be AdminTeacher
- Set an AdminTeacher to be Teacher

Teacher Username	<input type="text"/>	
Admin Password	<input type="password"/>	
CANCEL	SUBMIT	BACK



ALL Courses

Priority

Low

High

○ Check lists

- Teacher List: Teacher & AdminTeacher
- Admin List: Administrator & AdminTeacher
- Course List: Check all courses as the lecturer

Teacher List	
Name	Course Name
Tony Stack	Linear Algebra 1001
Janet Jackson	Linear Algebra 1002
Janet Jackson	Software Engineering 1001
Tony Stack	Software Engineering 1002
Tony Stack	Compiler Construction 1001
Tony Stack	Database Management System 1001
Janet Jackson	Database Management System 1002
Tony Stack	Database Management System 1003



AdminTeacher



○ Login in two types

- Login type → Teacher || Login type → Admin
- Use same username and password

ALL Courses

Username

Password


AdminTeacher


AdminTeacher

Student Teacher Administrator

Priority

Low

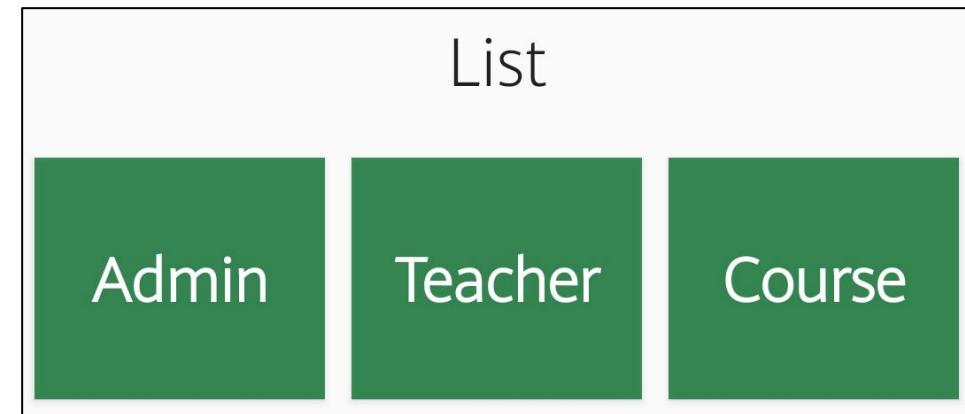
High



ALL Courses

○ Check lists

- Teacher List: Teacher & AdminTeacher
- Admin List: Administrator & AdminTeacher
- Course List: Check all courses as the lecturer



Priority



Low

High



Teacher



Teacher

HIS Courses

Manage attendance

- Set & Update: set an attendance earlier [>15 minutes]

Set a New Attendance

Time

Date

Remind Student in

One-Touch Sign In
 One-Touch Sign In + Submit File
content of submission is...

Input setting time later than remind time, and remind time >15 minutes after current time!

CANCEL **SUBMIT** **BACK**

Priority

Low

High



Teacher



HIS Courses

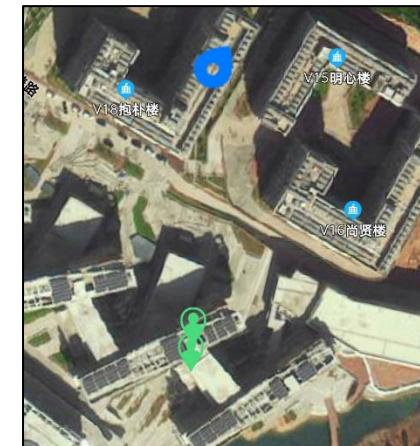
Priority

Low

Linear Algebra 1001				
Check all Attendance				
Time	Reminder	How	State	
2020-11-05 08:00:00	07:00:00	Touch	2/2	
2020-11-05 19:56:00	19:55:00	Touch	2/2	
2020-11-06 10:00:00	00:00:01	Touch	2/2	
2020-11-06 17:00:00	16:15:18	Touch	2/2	
2020-11-10 20:30:00	20:30:00	Touch	2/2	
2020-11-12 02:49:31		TouchF	2/2	
2020-11-12				

○ Manage attendance

- Check: time, location & submitted file



High



HIS Courses

Priority

Low

High

○ Manage attendance

- Delete: input the timestamp of attendance

Delete an Attendance

Time

Date

CHECK IF ATTENDANCE EXIST

CANCEL **SUBMIT** **BACK**



Teacher



Priority



○ Reminder of future attendance

Attendance

Set

Check

Delete

Update

Other Function

Remind Student

Student List

All FUTURE
attendance



HIS Courses

○ Student list

- List of students in this course
- Check all his location

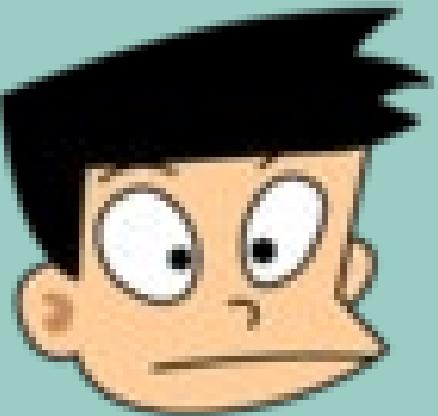
Student List				
SID	Name	Times	Check	
173001000 1	Henry LAU	7/7		
173001000 2	Sandy LAM	7/7		

Priority

Low

High

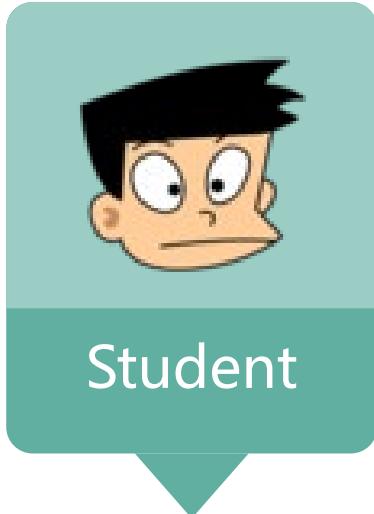




Student



Student



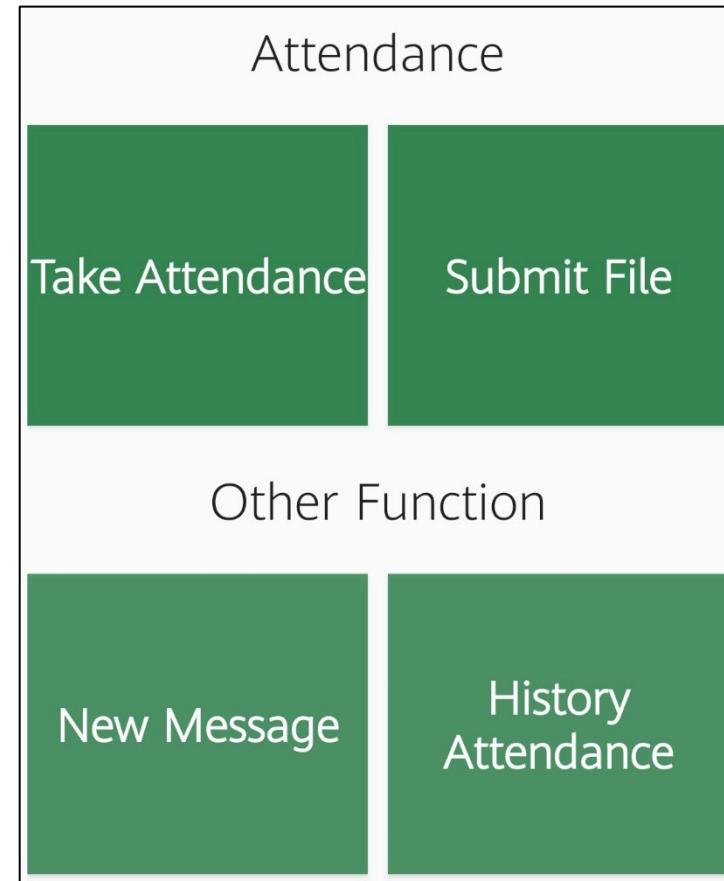
HIS Courses

Priority



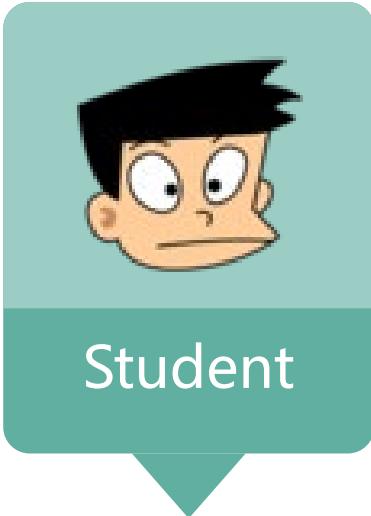
○ Press to take attendance

- Take the attendance in 15 minutes





Student



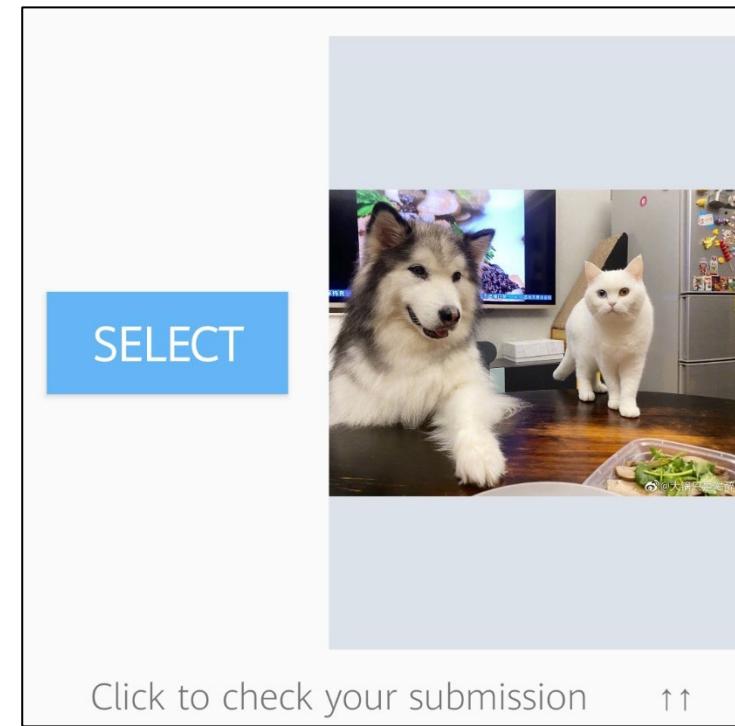
HIS Courses

Priority

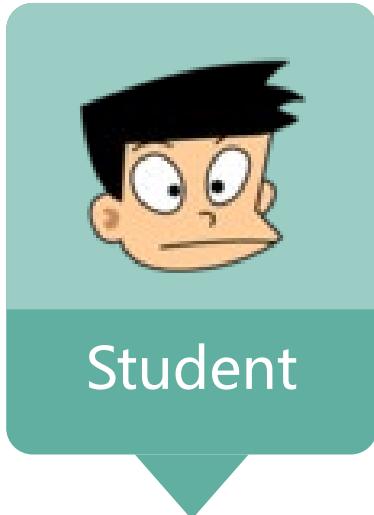
Low

○ Submit file to take attendance

- Take the attendance in 15 minutes
- Submit the required image



High



HIS Courses

Priority

Low

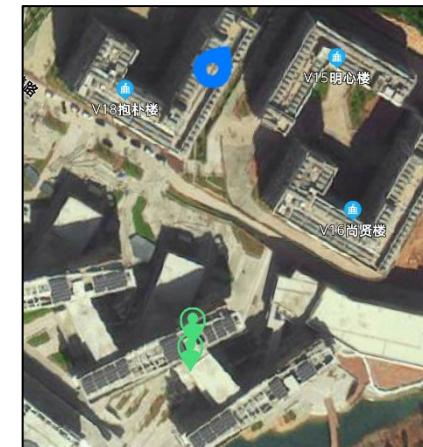
High

Check lists

- Message List: all received message of attendance
- Attendance List: record of completed attendance

Check My Attendance

Time	How	File	Map
2020-11-05 08:02:00	Touch	-	↗
2020-11-05 19:57:00	Touch	-	↗
2020-11-06 10:01:00	Touch	-	↗
2020-11-06 17:01:02	Touch	-	↗
2020-11-10 20:31:09	Touch	-	↗
2020-11-12 13:00:47	TouchF	img-16...4f6.jpg	↗
2020-11-13 02:53:21	TouchF	img-16...0d.jpg	↗



MAP

FILE

Part Four

Resources

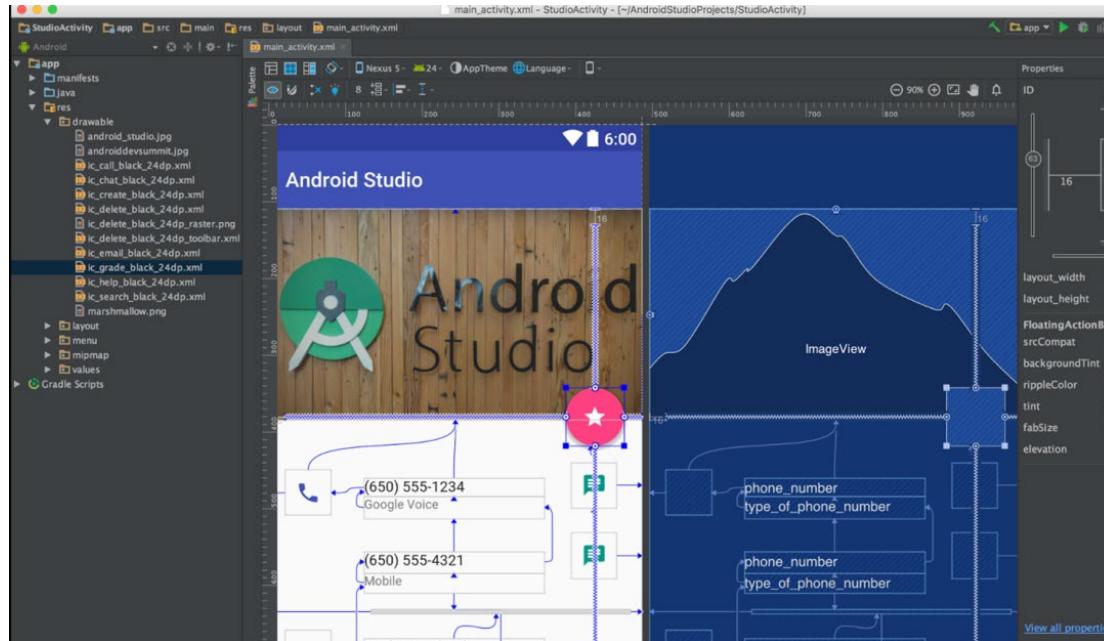




- **Android Studio**
- **GaoDe API**
- **Aliyun RDS Database**
(Relational Database Service)



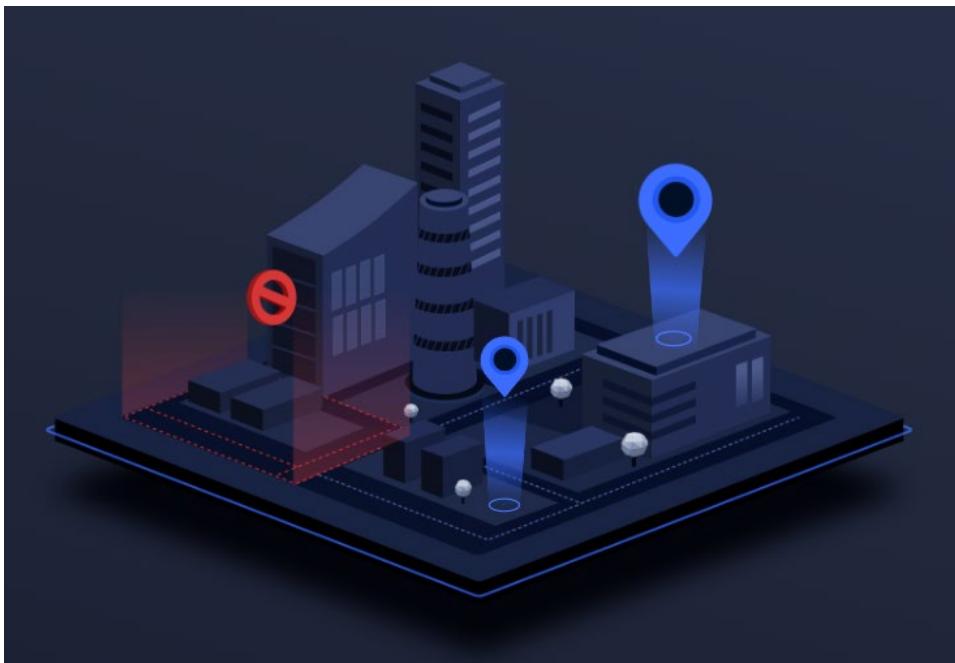
Android Studio 3.6



- **Software for Android developer**
- **Language - JAVA**
- **Import libraries of APIs**
 - JDBC(Java Database Connectivity) → Application Aliyun DB
 - Gaode SDK – positioning & 3D Map



Gaode API



- **Show 3D map in layout**
- **Display your current location**
 - Determine your location by GCS (Gaode Coordinate System)
 - Marked by points
- **Record of your current location**
 - Determine your location by GCS
 - Student attendance coordinates



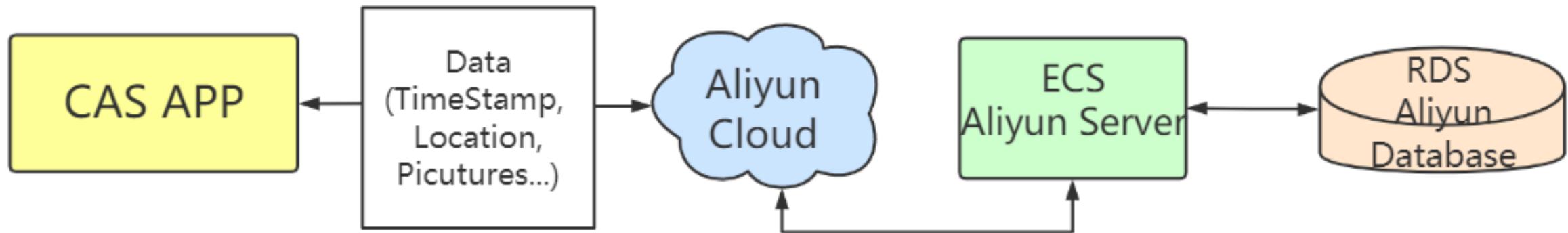
Aliyun RDS - MySQL

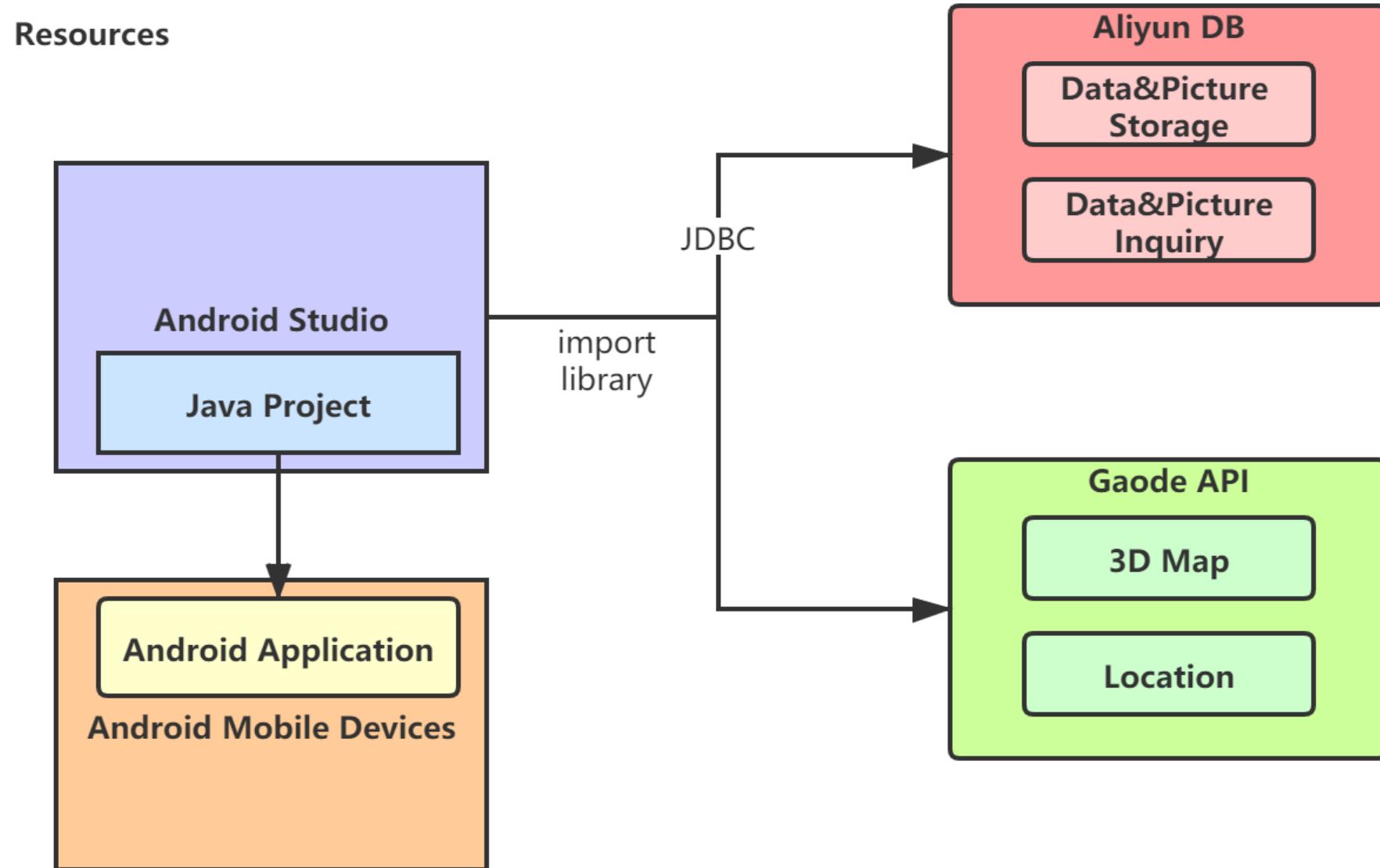


- **Built on Alibaba Cloud ECS server**
 - ECS (Elastic Compute Service)
 - RDS (Relational Database Service)
 - DMS (Database management system)
- **Connected by the JDBC (Java Database Connectivity) API**
- **Wrote SQL statements to**
 - add, delete, check and subtract data
 - Upload and download pictures



Resource





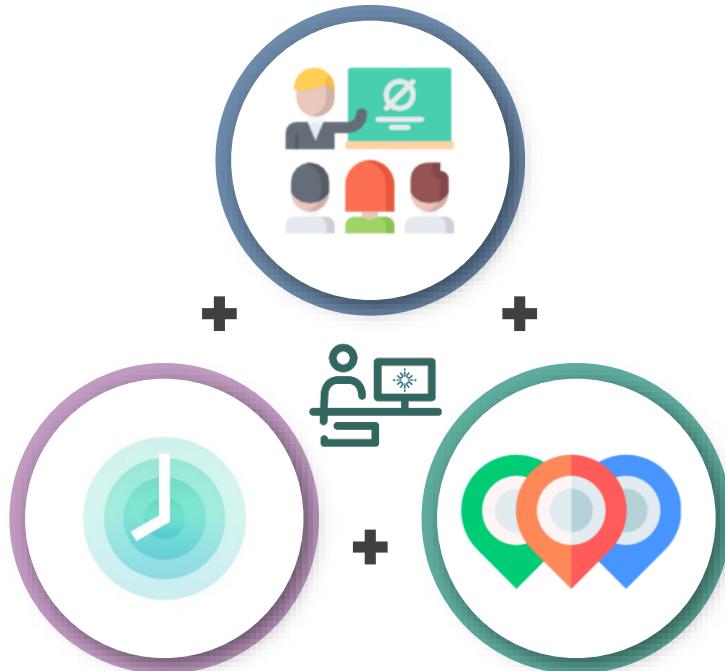


Part Five

Conclusion



Features of our Application



- **Intuitive check-in**
- **Data: Continuous update**
- **Flexible member attributes**
 - Normal teacher ↔ Admin Teacher
- **Features of the system**
 - Environment friendly: no more sheets to record
 - Validity: avoid cheat on attendance → sign-in by others
 - Intuitiveness: Easily check attendance data
 - Accuracy: time limited in attendance || Shorten sign-in time



Other attendance taker applications



To sum up

- Better attendance management
- A funny way to take attendance
 - Diversify the way students sign in
- Give a intuitive feedback to teachers
 - to grasp the student's class status

The screenshot shows a mobile application interface. On the left is a map of a university campus with several buildings labeled V19, V17, V16, V15, V13, V12, V10, V9, and V8. A green location marker is placed on the map. In the center, there is a camera view showing a white dog and a white cat standing on a floor. Below the camera view is a button labeled "SELECT". To the right of the camera view is a table titled "Check My Attendance". The table has columns for Time, How, File, and Map. It contains four rows of data:

Time	How	File	Map
2020-11-05 08:02:00	Touch	-	
2020-11-05 19:57:00	Touch	-	
2020-11-06 10:01:00	Touch	-	
2020-11-06 17:01:02	Touch	-	

At the bottom of the screen, there is a button labeled "Click to check your submission" and a small "11" icon.



Do sth. more on FYPⅡ

- Real-time location tracking
- File submission
 - More than submitting a pictures / / / / ...
- Verify identity
 - QR-code
 - or face recognition
- Better UI design
 - Dynamic & Stylish

Thank You

