



FPT On Campus Dormitory

CAPSTONE PROJECT DOCUMENT

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Capstone Project Code: GDP491_G2

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Introduction

OCD is an app that helps student and guard can live better and work more efficiently at FU dormitory.

Not only helps, student to manage all the process and fees, but also accelerate the process of all dormitory's request.

OCD also enhance all the services to be more convenient and modern.

With OCD, guard team and admin team can always spend less time and workforce but gain better work efficiency.

OCD is created with a view to bringing useful connection between student and guard in dormitory life

Report No.1: **CP Proposal**

1.1. Problem Definition

1.1.1.Name of this Capstone Project

FPT On Campus Dormitory Mobile Application

1.1.2.Problem Abstraction

FPT students have a lot of dissatisfaction about the way the university manages its dormitories. Student security is not closely monitored, there is still a condition of illegal sheltering, changing rooms, outsiders in, etc... which violate dormitory regulations. Procedure of collecting electricity and water number usage, handling maintenance request is still delayed and errors, cost too much time and effort. Since the website OCD was born, it has solved a lot of outstanding issues of dormitory and student life. The coherence between students and the dormitory management team depends largely on OCD. This alleviates the pressure of the dormitory management team and the security team, thereby improving student life and management mechanisms. This also helps to optimize the work of the management team thereby positively improving the management quality, more detailed and more accurate.

The idea of an OCD app arises to improve and broaden the effects of the OCD website, to make it more convenient, improve mobility, and suitable for popular devices rather than just websites. Moreover, with mobile apps of which its mobility would be fully utilized, it is possible to develop unique and creative ideas that are urgent at the time associated with the inherent mobility of the phone.

1.2. Project Overview

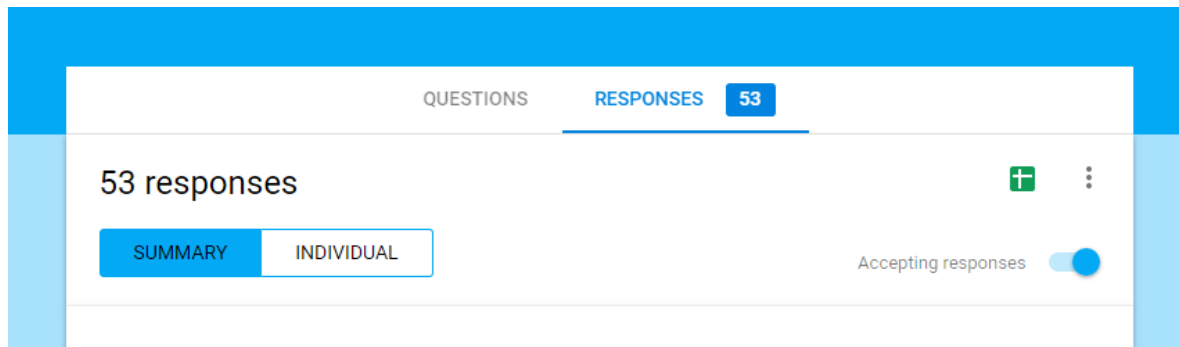
1.2.1. Define the Problem

- Guards spend too much effort and time for the job but does not achieve the maximum results (errors, failures, delays still exist) due to the rudimentary implementation methods, ineffective efficiency and old age (which results in bad physical condition).
 - The privacy of student rooms is not guaranteed.
 - Students spend time announcing and requesting due to unnecessary cumbersome processes
 - Many errors and mistakes arise
 - Not control and thoroughly handle infringement issues such as illegal sheltering, changing rooms, outsiders in ...
- Managing information, notices and requests from the school is difficult for guards and students
 - Emergencies and urgent problems are not immediately responded which can cause danger to property and human life

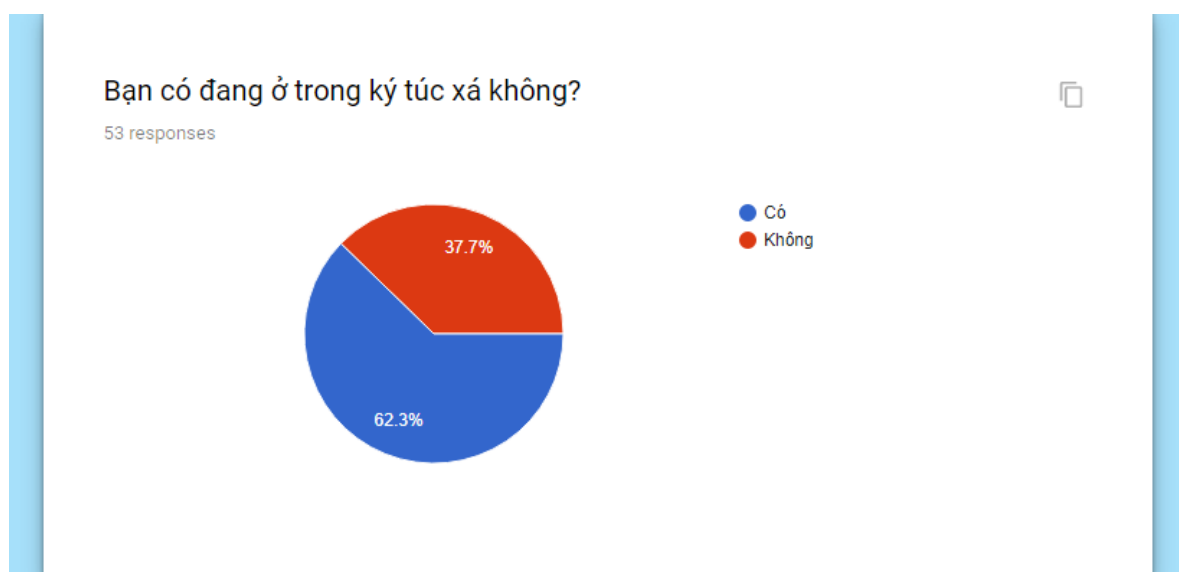
1.2.2. Research

1.2.2.1. Survey

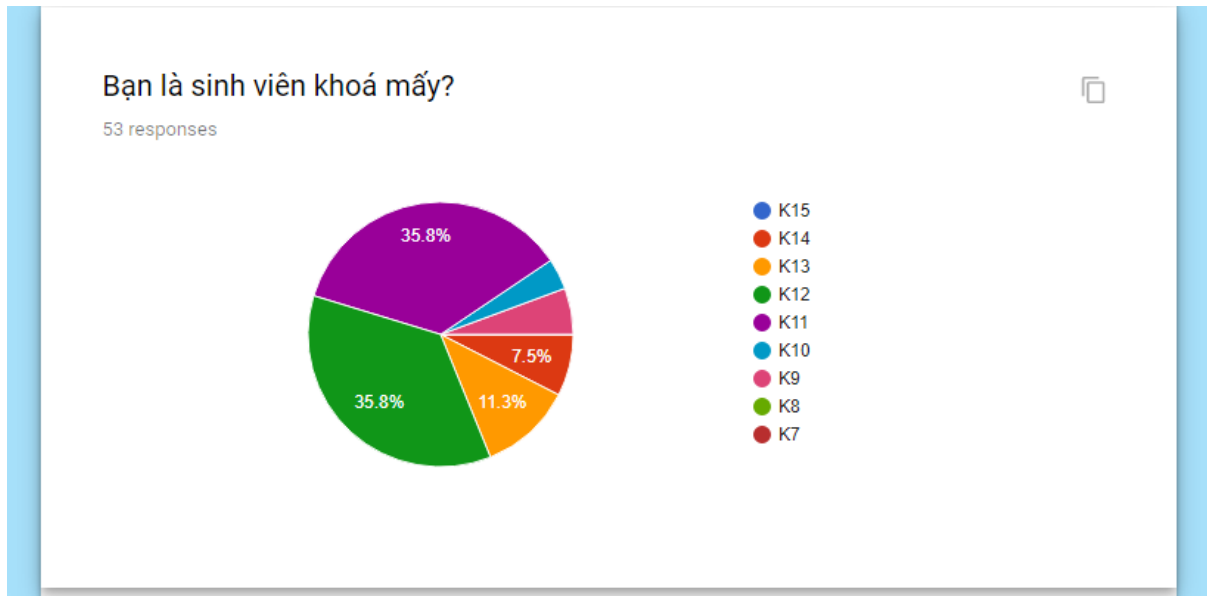
- Survey is proceeded anonymously by Google Form and publicized on facebook.
- Survey targets are present students of FPTU and ex-students of FPTU.
- Time for survey is 1 week
- 53 results acquired



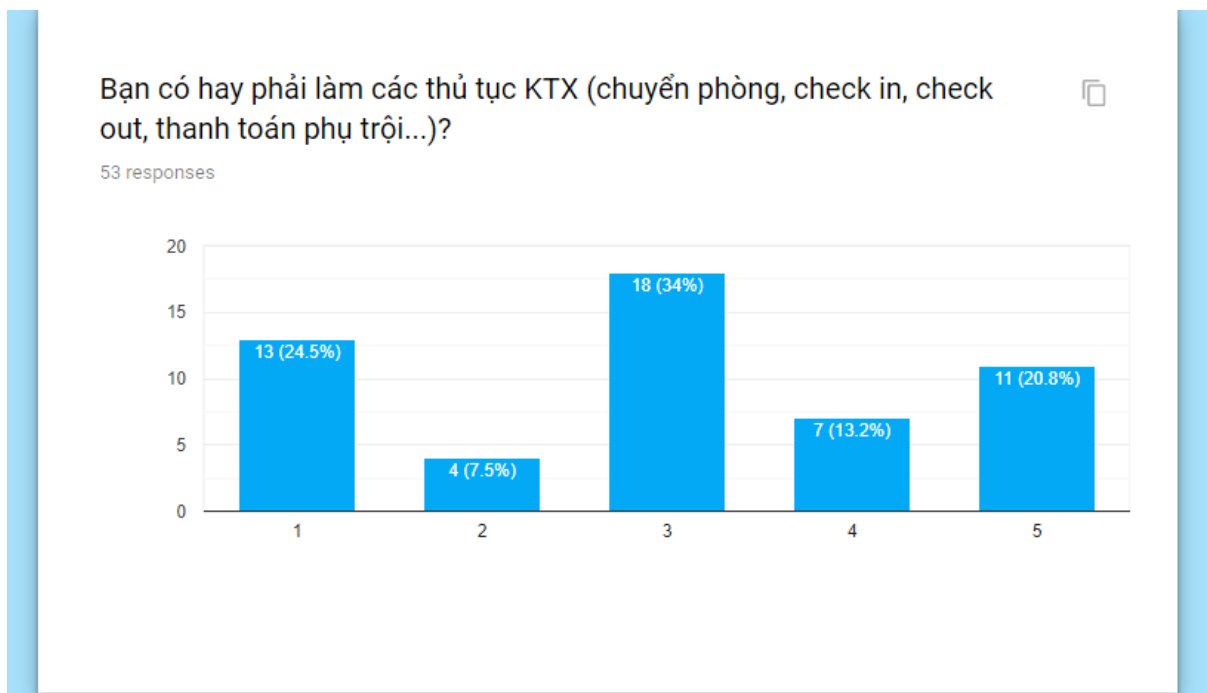
• Detailed survey and Conclusions



- Most students are living in dormitories
- The rest used to live in the dormitory
- Survey is collected from both male and female students.
- Male outnumbers female, almost double.



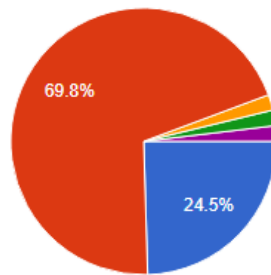
- Students who conducted the survey are mostly in K11, K12, K13 and K14. There are other courses but not significant. Because the majority of students in these 4 courses are living in dormitories. Most other students only live in dormitories, the rest have graduated or moved out.



- Up to 75.5% of surveyed students used to have to do procedures such as check-in, checkout, extra payment, ... and with a large number of K15 students going to be in KTX then This number will increase. Therefore, OCD cannot lack features that support these operations. And these must be key features, optimized and maximized to address the vast majority of FU-HL students.

Bạn thường book phòng KTX bằng cách nào?

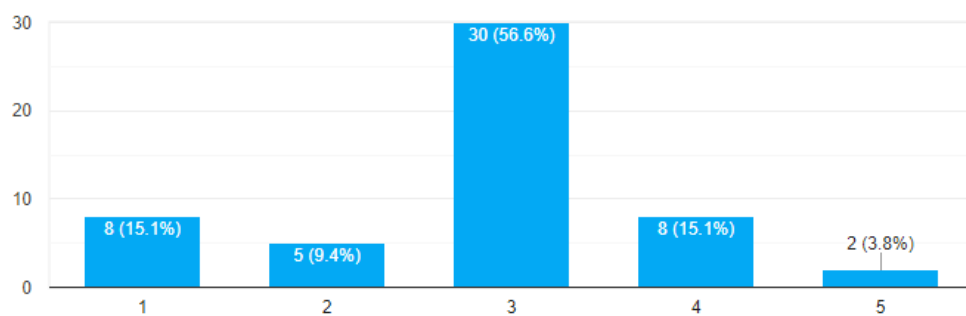
53 responses



- Đến trực tiếp 102L
- Book trên trang web Ocd.fpt.edu.vn
- từ lúc lên trường ở 1 phòng duy nhất mặc định
- chưa từng book
- Hỏi trc được xếp thẳng

Bạn có thấy hài lòng với những cách book phòng hiện tại của nhà trường?

53 responses

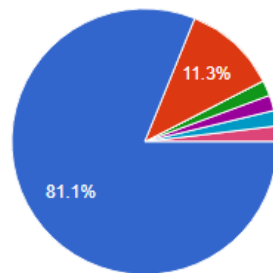


- Students take quite a bit of time to complete these processes, most of which take only a few hours.

- A lot of users expressed a neutral view of the current room booking process, which proves that the current OCD website has done a good job in this support process and this needs to be applied and developed better at the session. phone app version

Bạn thường làm gì khi cần sửa chữa hoặc thay thế các thiết bị cơ sở vật chất bị hỏng?

53 responses

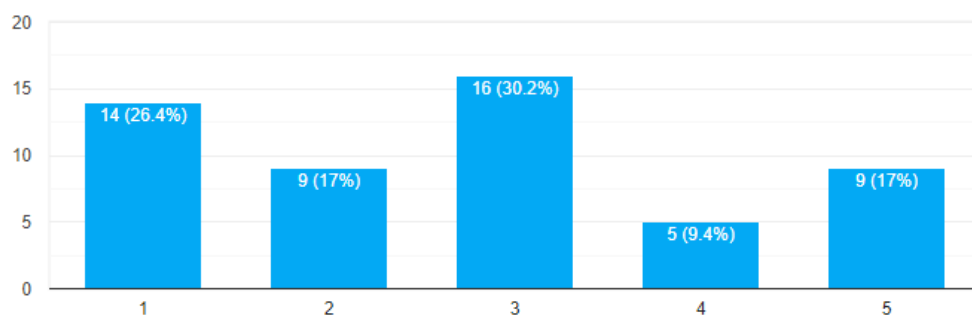


- Xuống phòng trực ban bảo vệ thông báo để cử người đến xử lý
- Tự mua mới, tự sửa chữa
- Muốn xử lý nhưng không biết làm cách nào
- Kệ đó không xử lý
- =)) Có book bao giờ đâu mà phải sửa
- Mail
- mang ra hàng sửa

- Most need to report a failure through the security room in dorm C. This is quite inconvenient especially in urgent cases. On the OCD website, there is currently no support feature for students to report damage. While the security guard is located only 1 dorm is dorm C. Moving to dorm C will be very inconvenient, especially with dorm F and dorm H at the farthest distance.

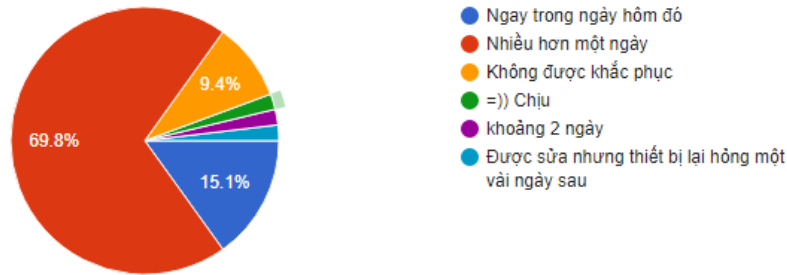
Bạn hoàn thành các thủ tục trong thời gian bao lâu?

53 responses



Thời gian được khắc phục hỏng hóc sau khi báo cáo khoảng bao lâu?

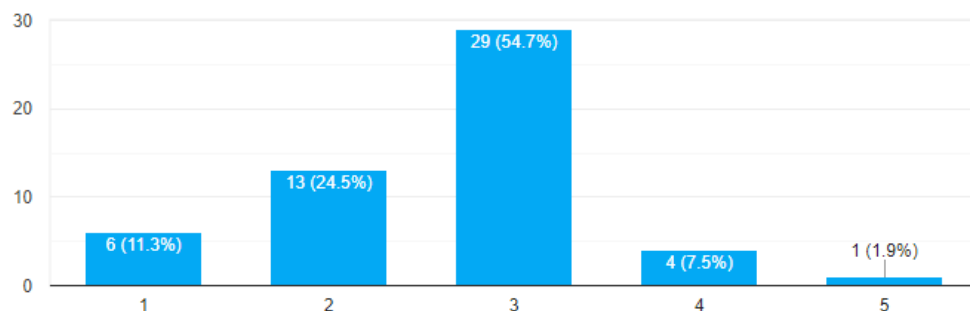
53 responses



- Repair time is longer than usual. Up to 69.8% of the survey respondents thought that their failure notice was handled in 2 days or more. This is also not pleasant when the broken furniture can be important items such as toilets or showers, which greatly affect the students' activities. Even 9.4% of students have not been repaired even reported failure.
- With 9.4% of students's maintenance request not proceeded and bad repair service, causing a few days later the device is broken again (with a low rate), the students are lazy to issue the problem and accept to use them with broken condition or buy new by themselves. Quite costly.

Bạn có thấy hài lòng với cách nhà trường xử lý các sự cố hỏng hóc hay không?

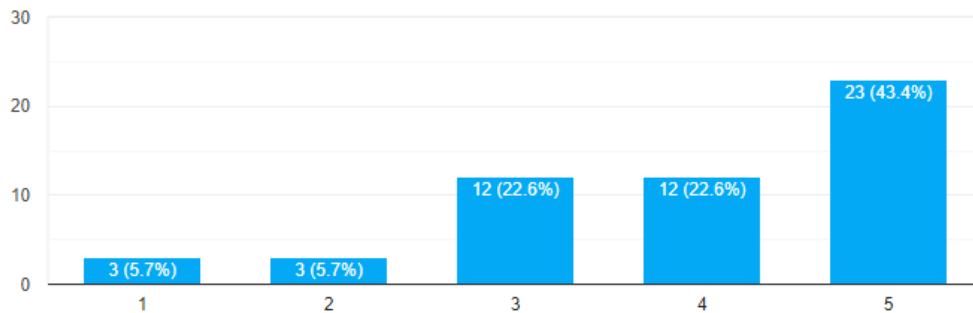
53 responses



- Up to 90.5% of students, however, are not comfortable with handling the application, notification of damage from the school. This means that student life is not fully met. OCD app needs to solve this problem. This issue of the school is currently rated as bad because currently this process is not in the OCD website and has not been developed, not optimized.

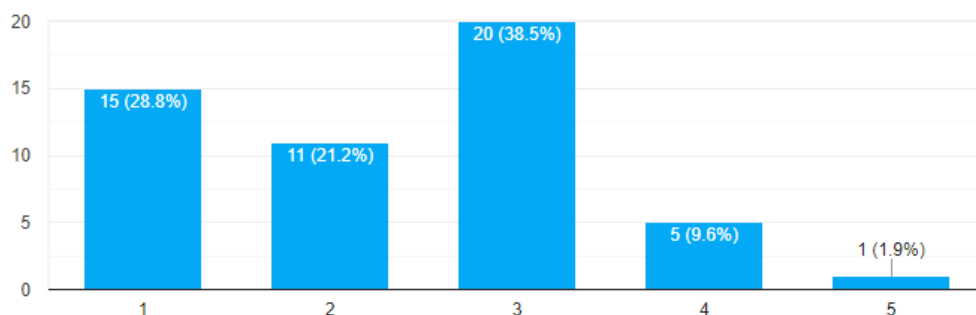
Phòng bạn có hay bị phát sinh tiền phụ trội hay không?

53 responses



Bạn có thấy hài lòng với cách thức nhà trường thông báo và thanh toán tiền phụ trội như hiện tại?

52 responses



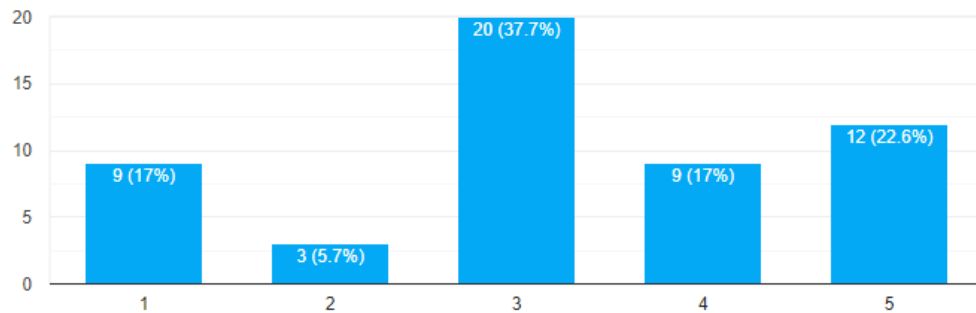
- Similarly, the overusage is also a problem that students often face. With only 4 numbers of water and 36 numbers, most people will have to pay at least 2.3 more semesters, especially on summer days when the school has air conditioners installed, Not to mention there are rooms that still run. Refrigerators or heating in the winter. 88.6% of students surveyed said that they often incurred extra.

- According to the survey, the current problem of electricity and water notification is still inadequate and erratic so up to 88.5% of students are dissatisfied with the current payment process.

- OCD app needs to help improve the problem of determining the correct amount of extra students and optimizing the time and payment operations of students.

Bạn có thấy phiền mỗi lần bảo vệ kiểm tra số điện nước hay không?

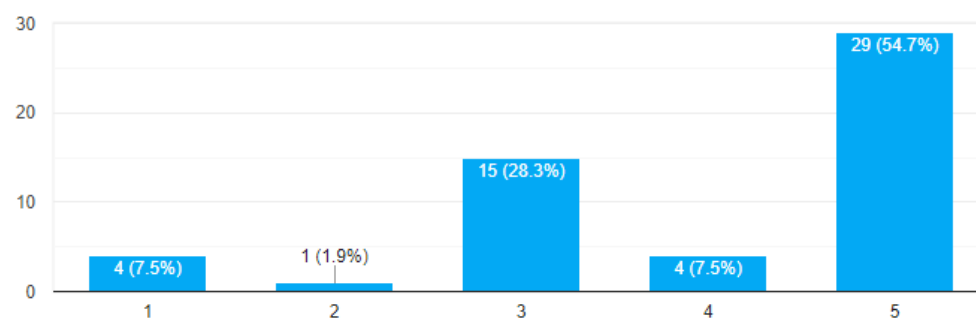
53 responses



- Students are mostly comfortable (22.6%) and neutral (37.7%) whenever the guards check the electricity and water. This is a good signal for the development of the utility for the OCD app. However, there is still a small percentage of students (22.7%) who feel bothered when guarding their electricity and water lines. Therefore, the OCD app will offer a solution that needs to optimize test time by high technology to minimize the time taken for electricity and water and cumbersome operations. This not only helps students feel more comfortable, but also helps to prevent errors as well as reduce pressure, labor thanks to the modern method, suitable to FPT's working environment. .

Bạn nghĩ sao về tính năng báo cháy, sử dụng công nghệ cảm biến báo cháy. Khi phát hiện sẽ ngay lập tức thông báo vào app để kịp thời xử lý?

53 responses

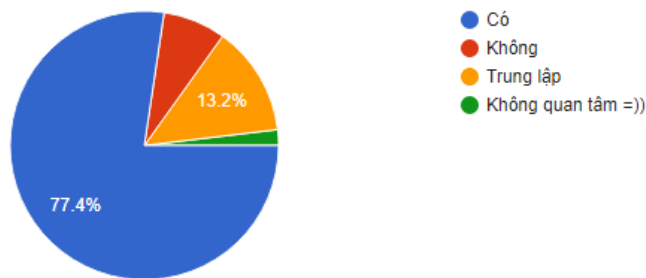


- The function of automatic fire alarm via wifi system is very enthusiastically supported from the majority of students participating in the survey (up to 90.5%). A positive sign to develop this innovative feature. Its benefits are bringing modern technology into optimization to solve the safety problems of human life and material assets. Emergency assistance, emergency notification to all people living and working at FU HL dormitories whenever there is a fire to ensure rules, maintain

security and order, and minimize damage to people and environment in dormitory environment of FPT University.

Bạn có muốn có một app để hỗ trợ quản lý kí túc xá (gồm các tính năng như book phòng, thông báo hỏng hóc, kiểm tra và thanh toán số điện nước,...) dành cho cả sinh viên và bảo vệ không?

53 responses



- 77.4% Students strongly support the idea and welcome a phone application for OCD system, which is new, complete, comfortable and usable on mobile phones. This is a positive feedback for the FPT OCD mobile app project.

1.2.2.2. Interview

- The interview was conducted directly at the security office of dom C dormitory of FU HL.
- Subjects participating in the survey are 2 security guards Tin Nghia Security, working at FU HL engineering.

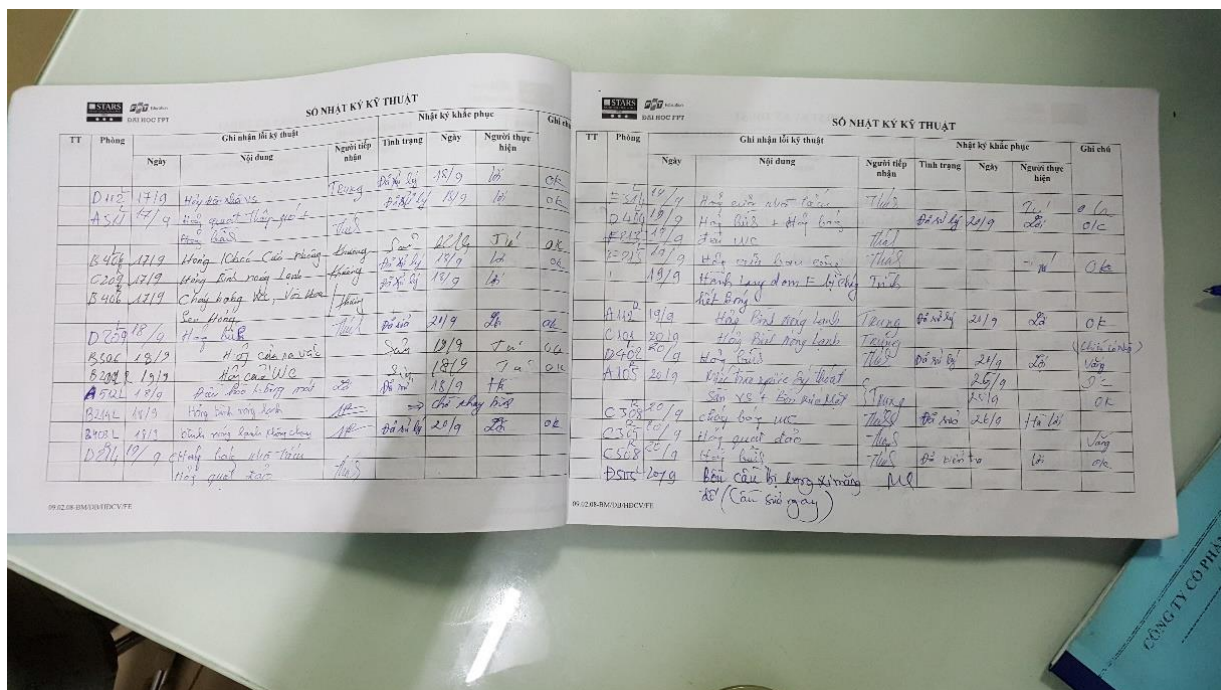


Security guard No. 1: Start working at FU HL 1 month ago – Normal staff



Security guard No. 2: Working in FU-HL for 1 year - Head of electricity and water management

- Running time for interviews and taking notes is 20 minutes. Record of interview, audio and video recording
- ***The interview record records the following:***
 - Number of guards: Total 30 people, divided into 3 groups, 10 people / team
 - Management model: There is 1 team leader, 3 teams, each team has 1 team leader, and 2 team leaders. Split work during the day, receive instructions from the dormitory management room 102L
 - Process checkin, checkout: Follow the requirements of 102L and the leader of the security team. With checkout, go to the room to check the equipment, sign the application for students. With checkin, get the new student list of 102L updated to manage.
 - Application from student's problem of production: Most of them are approved and processed by room 102L, guard only sign the application and check the room. Procedures are essential to carry out the required process.
 - Get the electricity and water numbers: Every month on the 16th, 17th and 18th will be required to get the electricity and water numbers, the process will take less than 1 week.
 - Procedure for taking water and electricity numbers: Go to each room to see the outside electricity meter, then, knock on the door to the room, see the water meter inside, record the numbers in the notebook. Then send it back to the 102L dormitory management room to enter data on the web for students.
 - Problem of maintenance: Every day there are about 5-10 cases of notice of broken furniture from students. Students will be asked to record personal information, and room number to contact the mechanic for repair or renewal. Students will pay with workers.
 - Feel the procedures are a bit long, take a few days to complete and strongly agree to have a mobile app to manage the dorm, speed up work, increase performance, reduce errors, and apply work modern technology



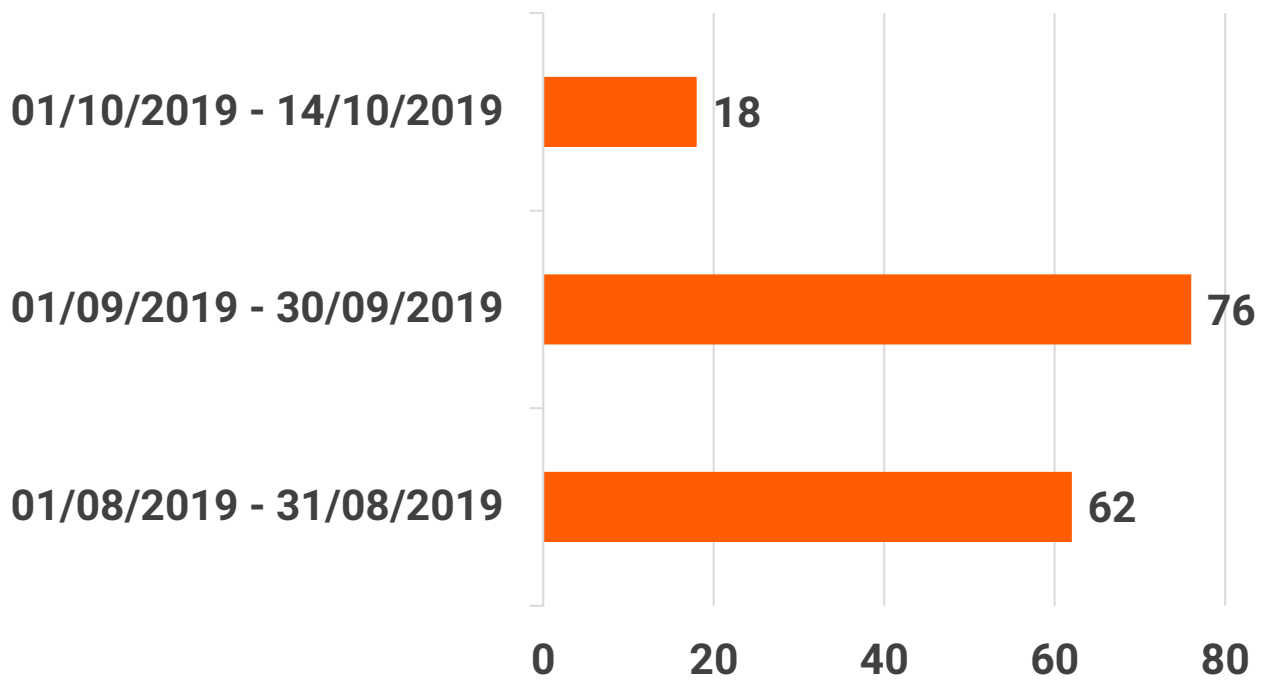
(Image of student notification notebook)

1.2.2.3. Facilities

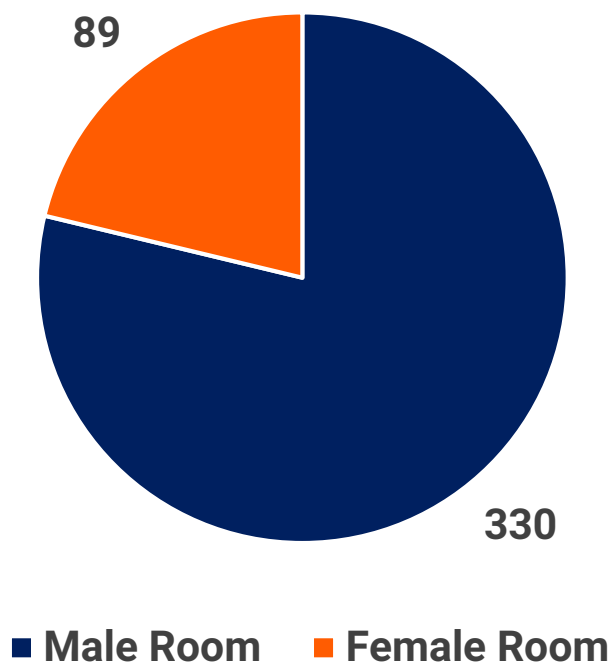
(Data and status of CSVC are provided from the management team of OCD website dormitory management FU HL)

- FPT University currently has **3** campuses having dormitories in operation, namely **FPTU Hoa Lac Hanoi (FU HL)** and Campus FPTU – Student Campus Lien Chieu Da Nang, and FPTU Can Tho Campus.
- FPT Hoa Lac Education and Training Area is located at km29 Thang Long Boulevard, in the campus there are 3 academic theaters and 7 dormitory buildings.
- 3 academic theaters including Alpha, Beta, Gamma, 7 dorm buildings including Dom A, Dom B, Dom C, Dom D, Dom E and Dom H.
- In which, Dom E is a dormitory for high school students of FPT School.
- FPTU Hoa Lac Hanoi's private dormitory is currently in **6** buildings of **Dom A, Dom B, Dom C, Dom D, Dom F and Dom H**.
- Each Dom consists of **5** floors, each floor has **14** rooms, of which 1 room on the first floor of dom C is used as a health room. Dom A, B each dom has **1** main staircase, dom C, D, F, H each dom has **2** stairs, 1 main staircase and 1 emergency staircase.
- **In August 2019**, there were **62** students applying for Checkout
- **In September 2019**, there were **76** students applying for Checkout
- **From October 1, 2019 to October 14, 2019**, there are **18** students applying for Checkout

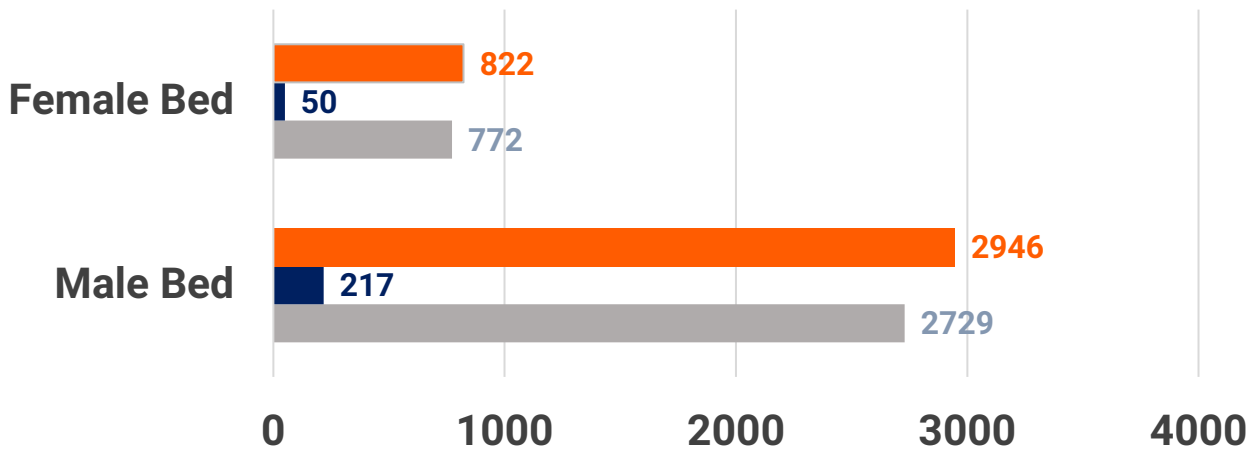
Student Checked-out from 01/08/2019 to 14/10/2019



ROOM CHART



BED CHART



	Male Bed	Female Bed
Total	2946	822
Free	217	50
Used	2729	772

1.2.2.4.Similar Apps

1.2.2.4.1.Livinsoft

<https://livinsoft.com>

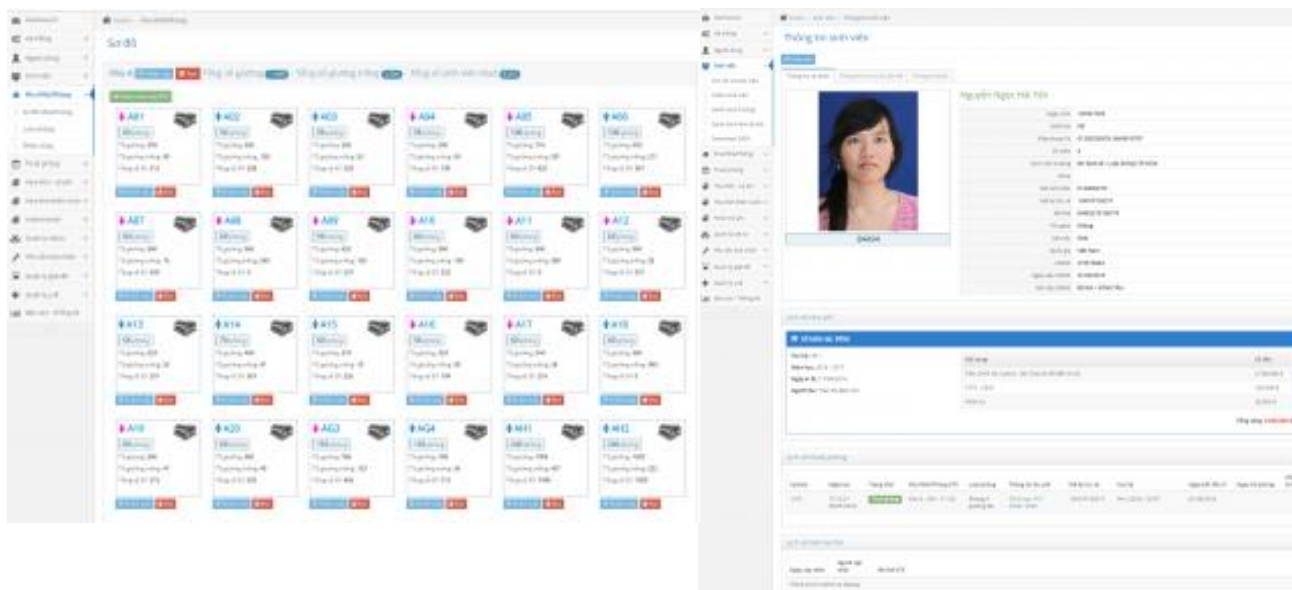


Pros: Catchy design interface. Quite modern and easy to approach. Payment is fast and correct. Management is good and provide users' needs.

Cons: Not focus on dormitory management but renting house. Not provide much service like a dormitory management should have. Security cannot be applied in dormitory management model

1.2.2.4.2.Quang Trung Dormitory Management Software

<http://qtsoftware.vn/phan-mem-quan-ly-ky-tuc-xa/>

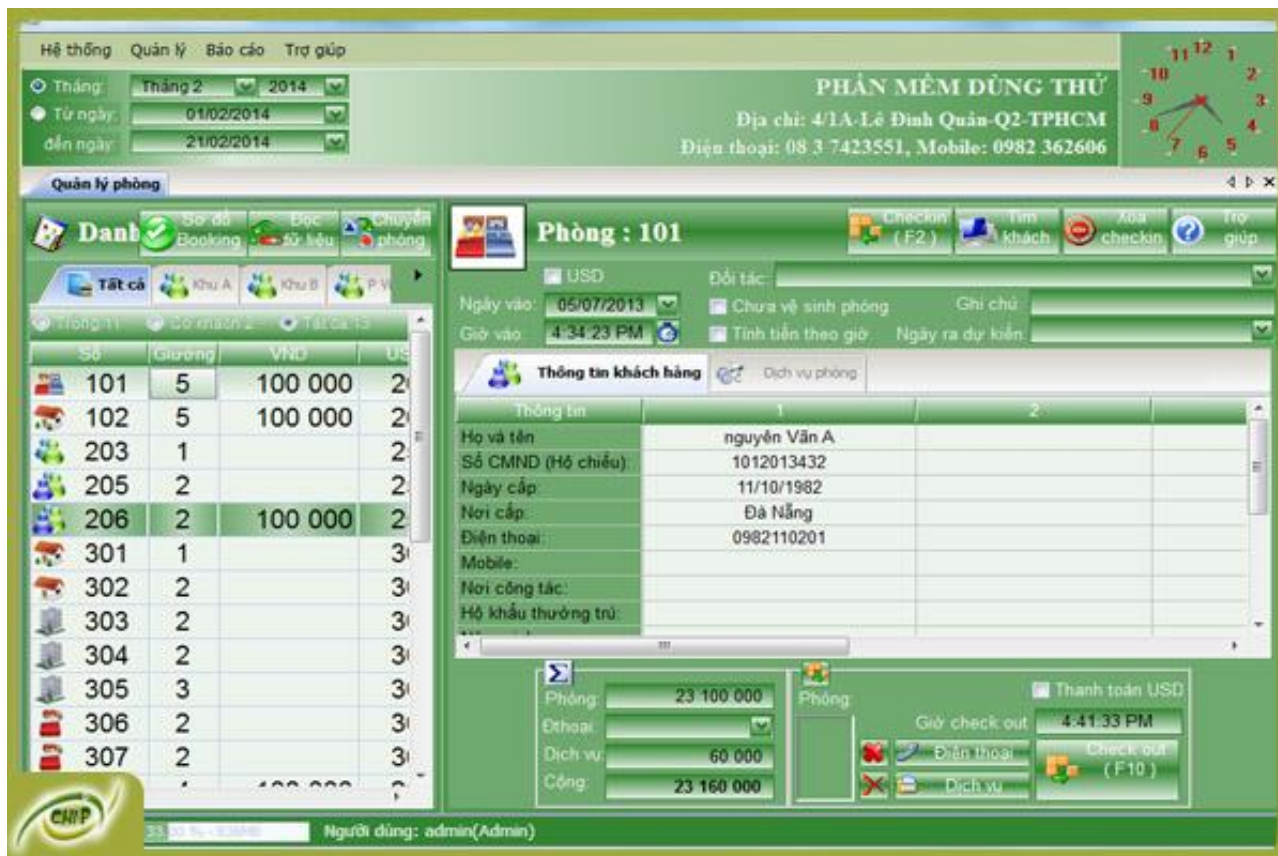


Pros: Has online payment. Dormitory management is expert, extraordinary. Simple, Friendly, Easy to use, full of functions.

Cons: Outdated design. Does not have application, only pc software. Some functions are not needed

1.2.2.4.3.Chipchipsoft Dormitory Management Software

<http://chipchipsoft.com/ccsKTX.aspx>



Pros: Security is good. Has both manual control and automatic control. Simple, easy to use. Management is quite reliable

Cons: More suitable for applying in hotel management. Bad design, bad interface. No app, just PC software. Students are not free to choose option because it is linked to study account to arrange. Payment is not online method.

1.2.2.4.4. Comparison Table

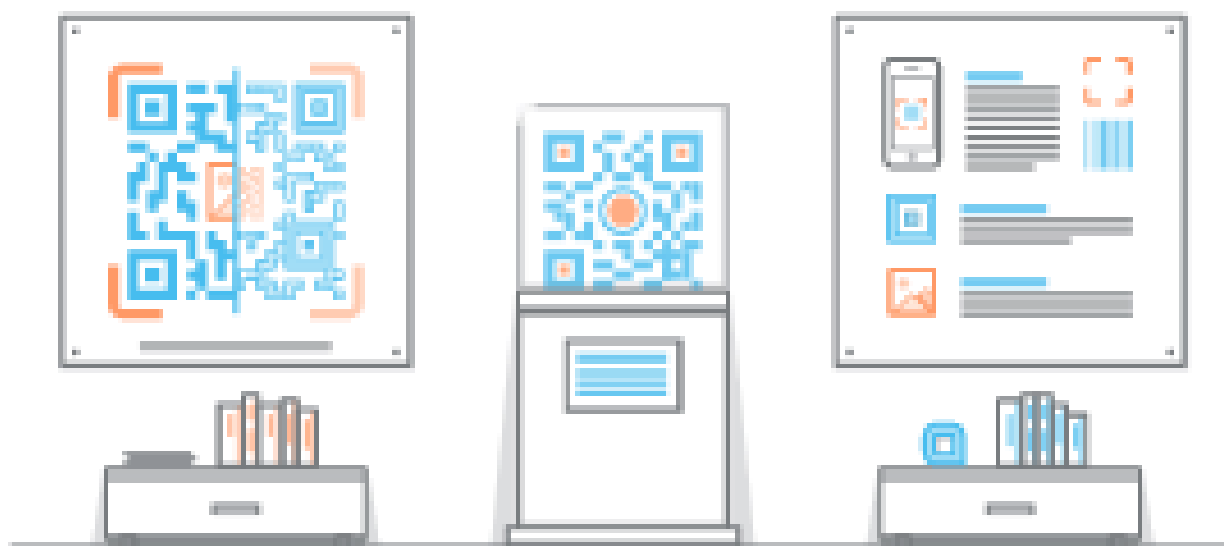
(5 levels: Nice, Good > Accepted > Normal > Not Good > Not Have)

SUBJECTS	<u>LIVINSOFT</u>	<u>Quang Trung Software</u>	<u>Chipchipsoft</u>
FEATURES			
Đối tượng user	Std/Adm/Tenant/Landlord	Std/Admin	Std/Admin
Bảng tin	Good	Good	Good
Book phòng	Normal	Good	Not good
Giữ chỗ	Normal	Normal	Normal
Thanh toán	Good / Online	Accepted/Online	Not good/Manual
An ninh, khẩn cấp	Normal	Good	Not have
Bảo dưỡng	Good / Automatic	Normal / Manual	Not good/Manual
Giao diện	Nice	Normal	Not Good
Quản lí thông tin	Accepted	Good / Use RFID	Good
Quản lí điện nước	Not have	Good	Good
Dạng lưu trữ TT	Cloud-based		
GENERAL EVALUATION	These are 3 dormitory management applications / software, including 1 international software and 2 Vietnamese ones, all supporting features such as student bulletin board, book room, room reservation, bill payment. , manage assets, and manage user information. All 3 programs student and dormitory manager can use.		
PRIVATE EVALUATION	This is a Turkish application, with both web and app platforms. Livinsoft is a test program that manages dormitories or houses for rent. Livinsoft has an eye-catching interface design, modern, easy to use. However, the program is quite focused on information and money	This is a computer program that supports dormitory management very well, with most standard features and lots of creative features, supporting multiple needs of users. However, the program is not developed on phones, has no phone applications and does	This is a program with basic features but not optimized. The tasks are still very rudimentary and need further development. The program has no phone app and no innovative, new features. The weakest point is that the room booking feature is not

	management, so it does not focus on emergency items and build security management much. App does not classify user accounts.	not classify users so it will be more difficult to use for newbies. Program interface design is also very simple, not eye-catching	implemented by students, but automatically by the system or manually by the management. Students are not allowed to book rooms, only support creating online invoices and paying offline.
APPLICABILITY	Can choose interface design concept according to this app. Features such as student information management do very well, in addition to adding many other important and creative features.	Strict management software, good. However, many large and redundant features, including OCD, are not available and are not necessary, so they should be removed. Redesigned interface and added necessary creative features	Applying strict management mechanism in terms of security as well as managing and selecting these features to apply reasonably.

1.2.2.5. Technology

1.2.2.5.1. QR Code



DEFINITION: The QR Code is a two-dimensional version of the barcode, known from product packaging in the supermarket. Originally developed for process optimization in the logistics of the automotive industry, the QR Code has found its way into mobile marketing with the widespread adoption of smartphones. "QR" stands for "Quick Response", which refers to the instant access to the information hidden in the Code. QR Codes are gaining popularity because the technology is "open source", i.e. available for everyone. Significant advantages of QR Codes over conventional barcodes are larger data capacity and high fault tolerance.

STRUCTURE: The black and white checkered pixel patterns appear at first glance to be a small crossword puzzle and seem to be composed at random. But if you look closely, certain structures can be identified. For the scanner to recognize a QR Code as such, the Code must always be square. A number of additional elements ensure that the information is read correctly.



Positioning markings

They indicate the direction in which the Code is printed.



Alignment markings

If the QR Code is large, this additional element helps with orientation.



Timing pattern

Using these lines, the scanner determines how large the data matrix is.



Version information

These specify the QR Code version that is being used. There are currently 40 different QR Code versions. For marketing purposes, versions 1-7 are normally used.



Format information

The format patterns contain information about the error tolerance and the data mask pattern and make it easier to scan the Code.



Data and error correction keys

These patterns hold the actual data.



Quiet zone

This spacing is important for the scanning program in order to distinguish the QR Code from its surroundings.

INFORMATION RECOVERY AND SELF-PROTECTION: To ensure that the information contained in the QR Code can be read even if it is damaged, the data keys include duplications (redundancies). Because of this, up to 30% of the Code structure can be destroyed without affecting the readability of the Code.

DATA CAPACITY: Up to 7089 digits or 4296 characters, including punctuation marks and special characters, can be entered in one Code. In addition to numbers and characters, words and phrases (e.g. Internet addresses) can be encoded as well. As more data is added to the QR Code, the Code size increases and the Code structure becomes more complex.

CREATE: Creating a QR Code takes only a few seconds. The first step is to go to a website which generates QR Codes, e.g. www.qr-code-generator.com. There you can choose the type of the Code you want to create and then enter the appropriate data. Simply click on "Create QR Code", and your personal QR Code is ready. Now you just decide, in which image format you want to use the Code and download the file easily.

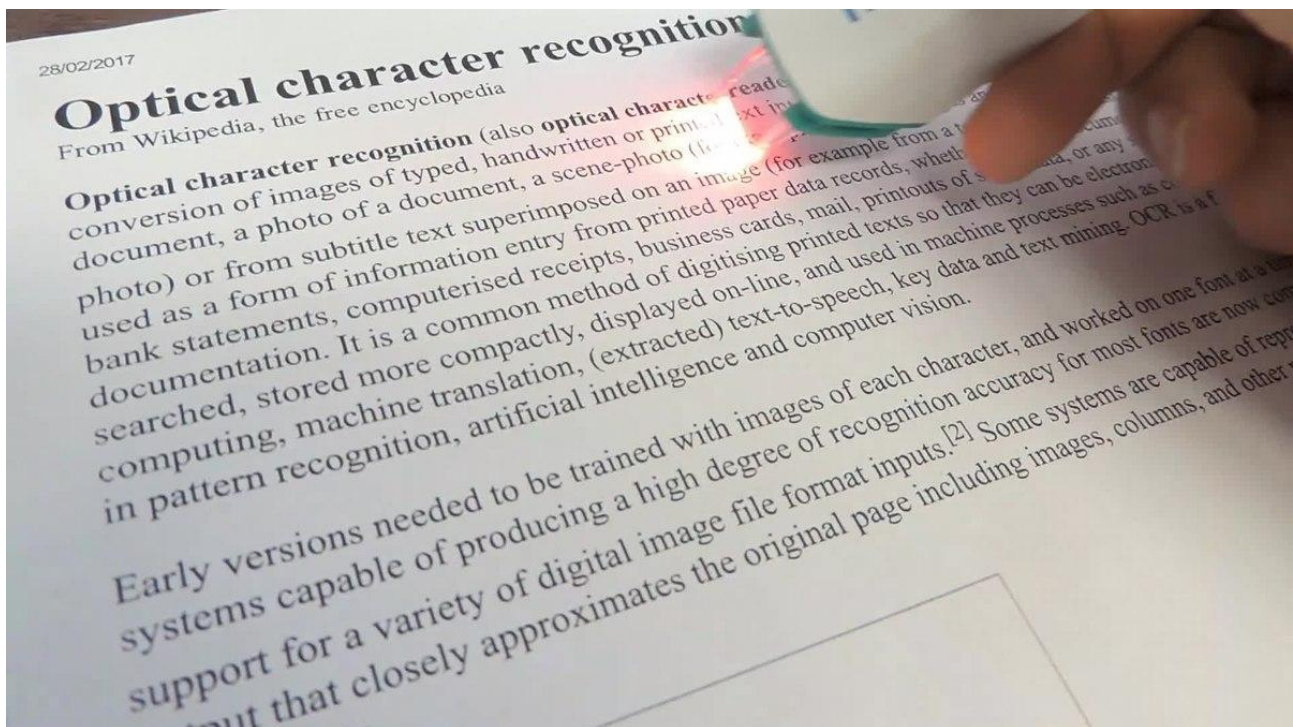
SCAN: To scan a QR Code, you first need to have a scanner app on your smartphone. A large selection of these can be downloaded for free in the various app stores. When you have installed one, start the application and keep the camera of your smartphone over the QR Code to scan it. If the Code is readable, the encoded address or action will be accessed automatically.

APPLICATION: Logistic, preservation, voting, searching, information management, purchasing, selling, wifi access, advertising, entertainment, subscription

APPLICATION in OCD:

- Create a QR code with the data of room name and type of meter. Eg: E-D311R
- Stick the QR to a meter's front face
- Use camera in OCD App to scan the QR to acquire the meter ID

1.2.2.5.2. Optical Character Recognition



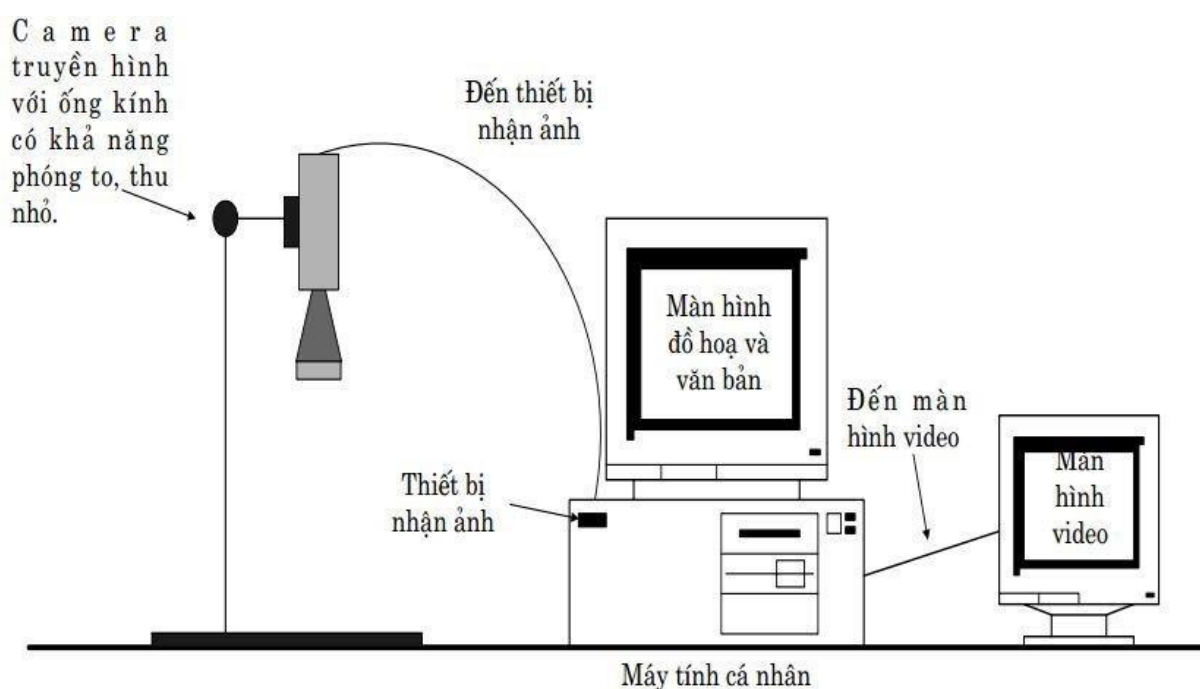
OCR read text on an image file into text format

OCR is used as a software integrated on a computer or directly into a certain hardware.



DEFINITION: OCR is an abbreviated term from the phrase Optical Character Recognition which can be roughly translated as Optical Optical Character Recognition. This technology is applied to read text on an image file into text format.

Optical Character Recognition (OCR) is a character recognition technology built on artificial Neuron network. It is the technique used to convert text images into editable text in computers. OCR will take the input of images with separate characters and produce the corresponding text characters, in addition to pattern matching algorithms are also applied depending on the situation.



LIMITATIONS of OCR: Besides, OCR also has many limitations such as:

- Most OCR software only recognizes about 80-90% on clear images.
- For images with background colors without significant differences in font color, or for handwritten images, the identification results are not very satisfactory
- Up to now, OCR has not supported all languages.

APPLICATION: You have probably once used technology but did not pay attention, because we only use it indirectly is the Scanner. OCR is used as a software integrated on a computer or directly into a certain hardware. Some well-known software such as ABBYY FineReader, PDF OCR, <http://www.onlineocr.net>, ...

OCR technology applied in handling traffic violations: learn about optical character recognition technology (OCR - Optical Character Recognition) applied in traffic law detection and handling software through the system. surveillance camera system.

APPLICATION in OCD:

- Use camera OCD App to scan the digits in the picture of the meter
- Acquire the digits of meter and match up with the meter ID

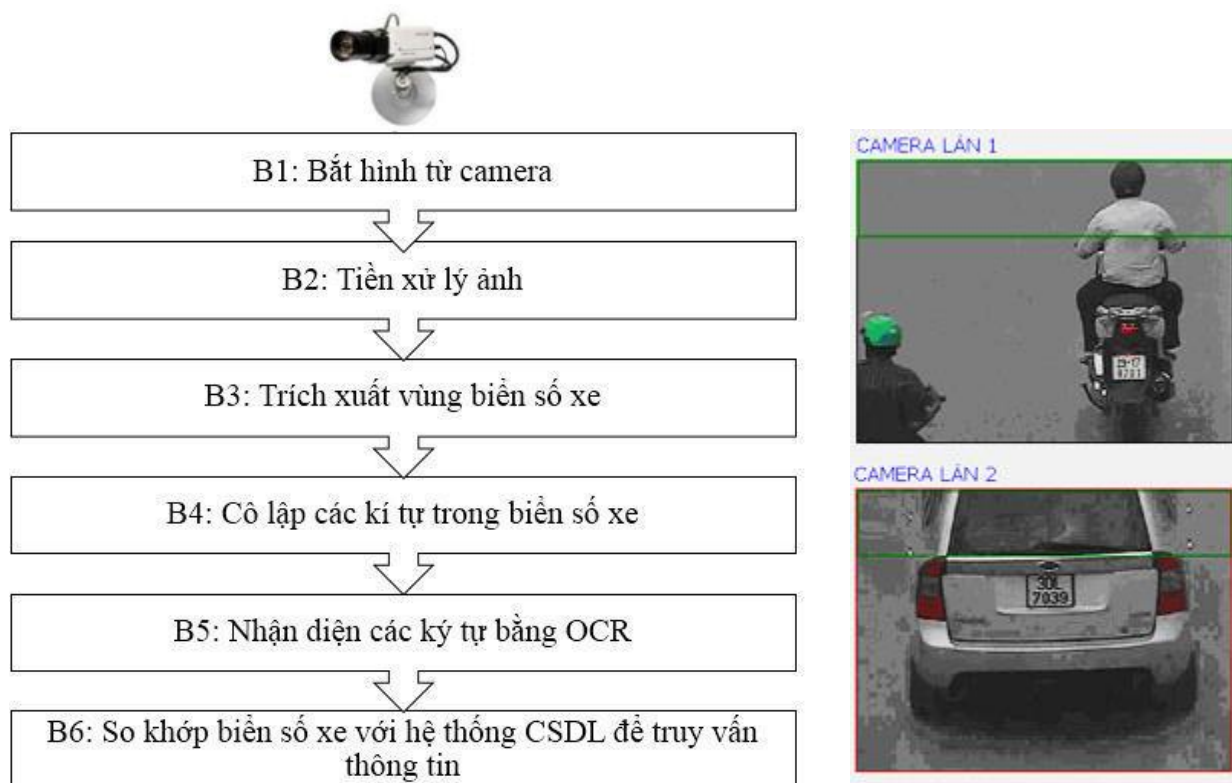




Image of OCR application in traffic handling

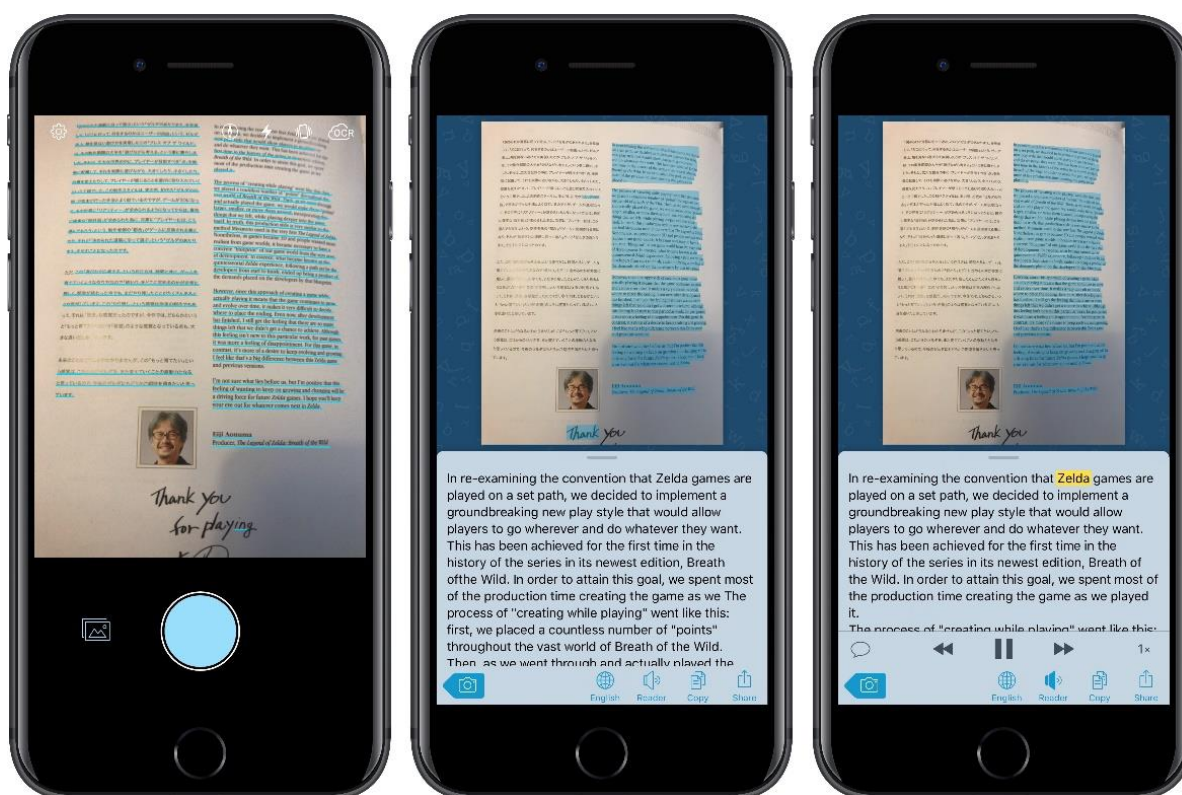
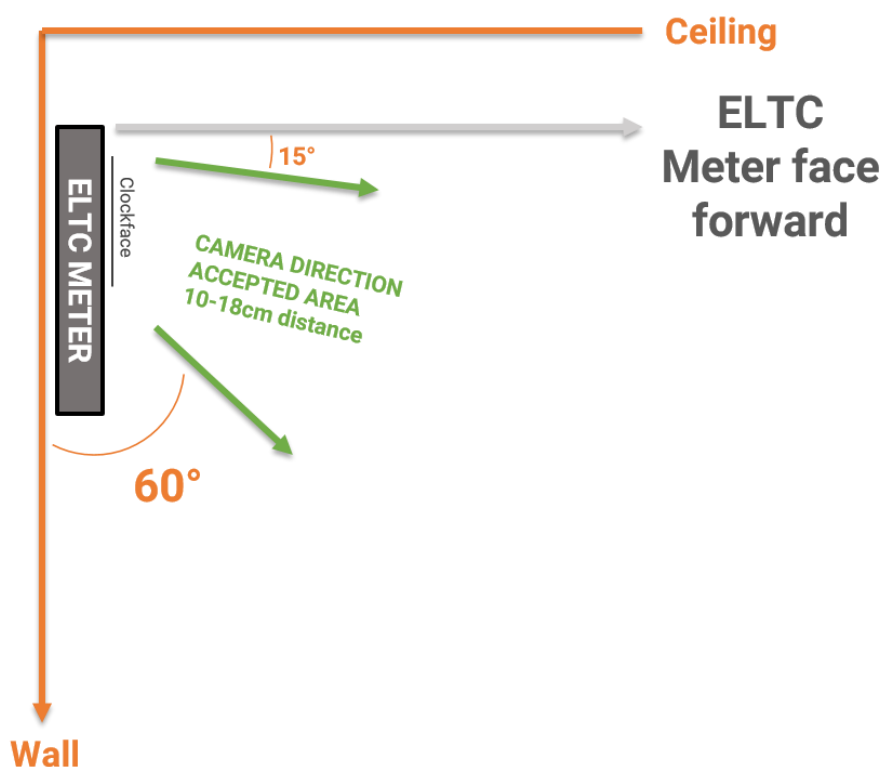
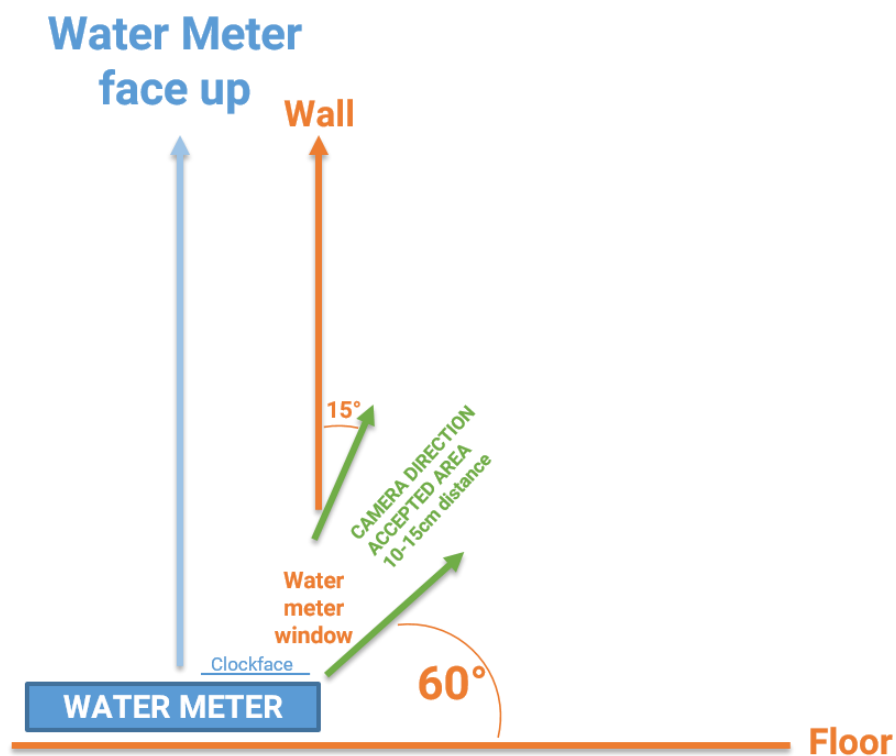


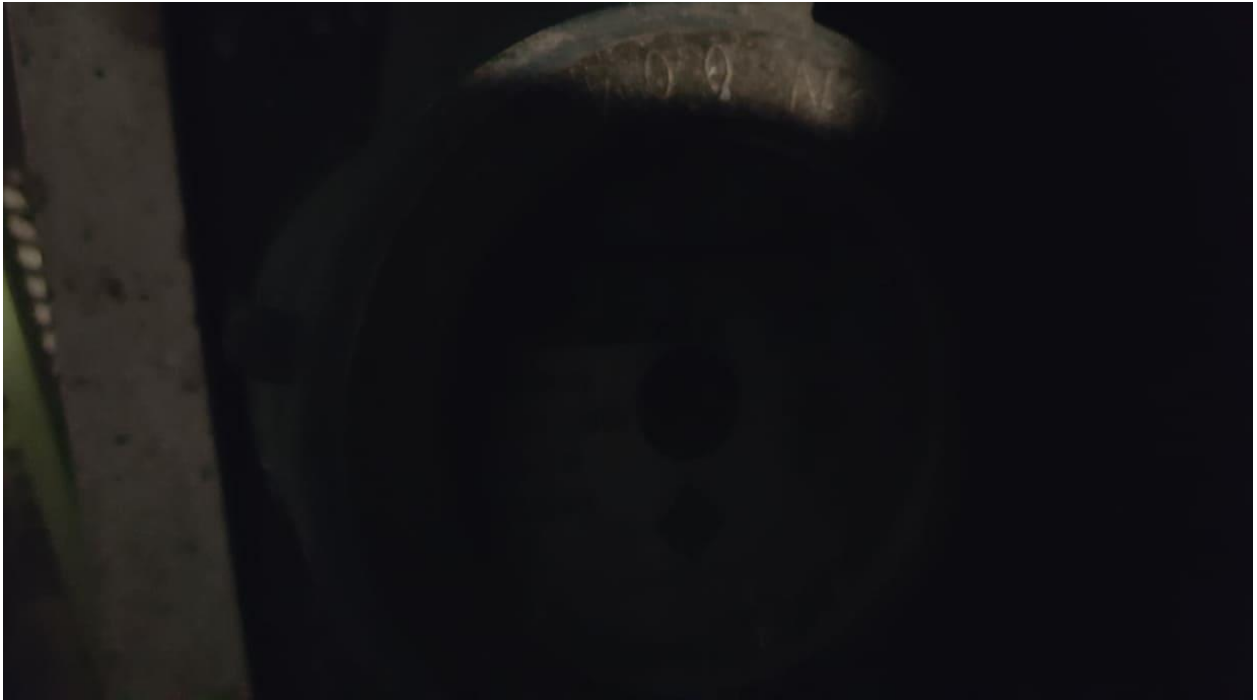
Image of OCR application in smartphone app

1.2.2.5.3. Photo taking technique

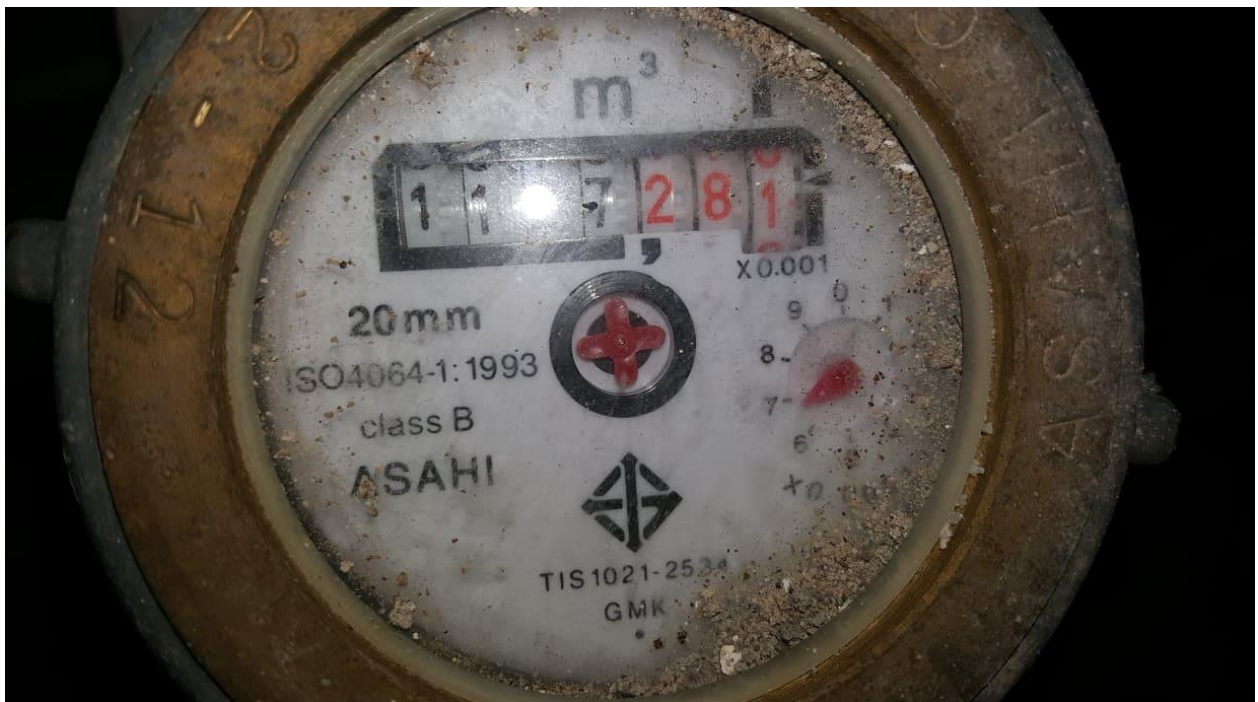
(Must use Flashlight while taking photo)



SOME TEST PHOTOS
- Unqualified photos



(No flashlight, too dark)



(Perpendicular Direction, too much glare)



(Use exposure camera app, no flash, still not bright enough and shaking)

- Qualified photos



1.2.2.5.4. Supporting Selfie-Stick

(For high position photos)



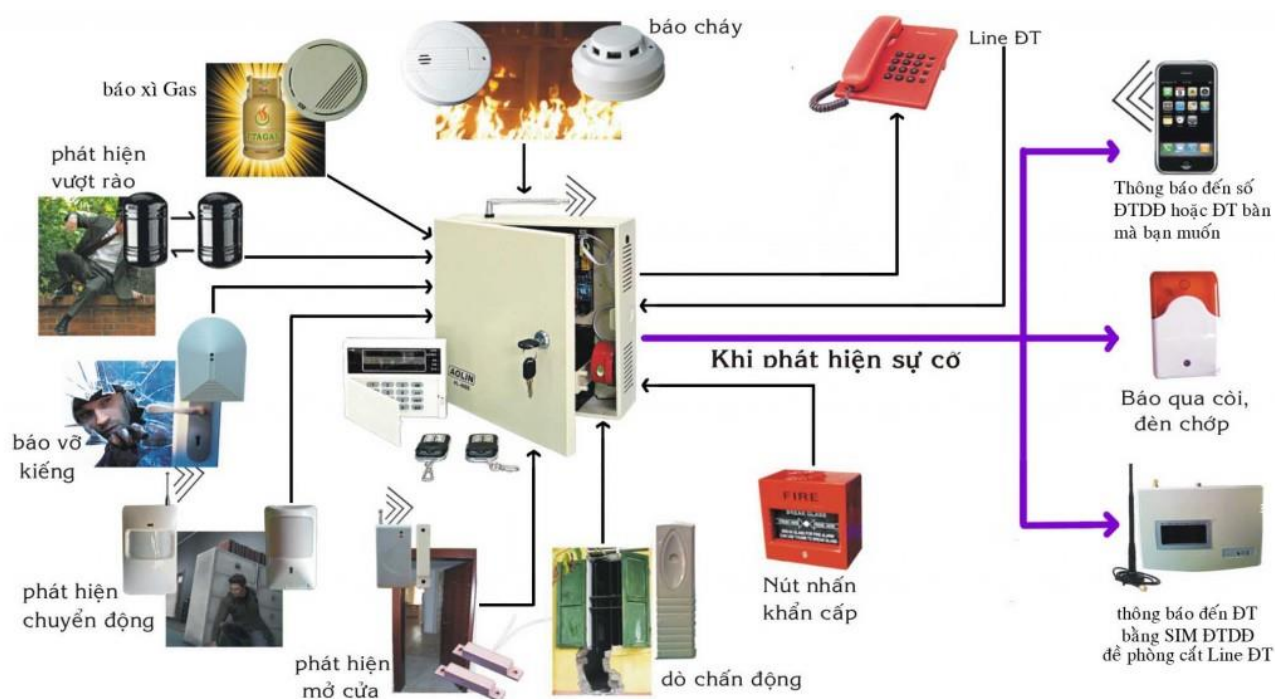
PRICE: 200.000 VND

Provide 3 sticks for each groups of guard

1.2.2.5.5. Fire Alert Smart System



Basic Fire Alert system components



Basic Automatic Alert system components



Đèn báo cháy

Còi báo cháy



Dò khói quang



**Đầu dò khói nhiệt
kết hợp**



Đầu dò khí carbon



Đầu dò lửa



**Đầu dò nhiệt
cố định**



**Đầu dò nhiệt
gia tăng**



Chuông báo cháy

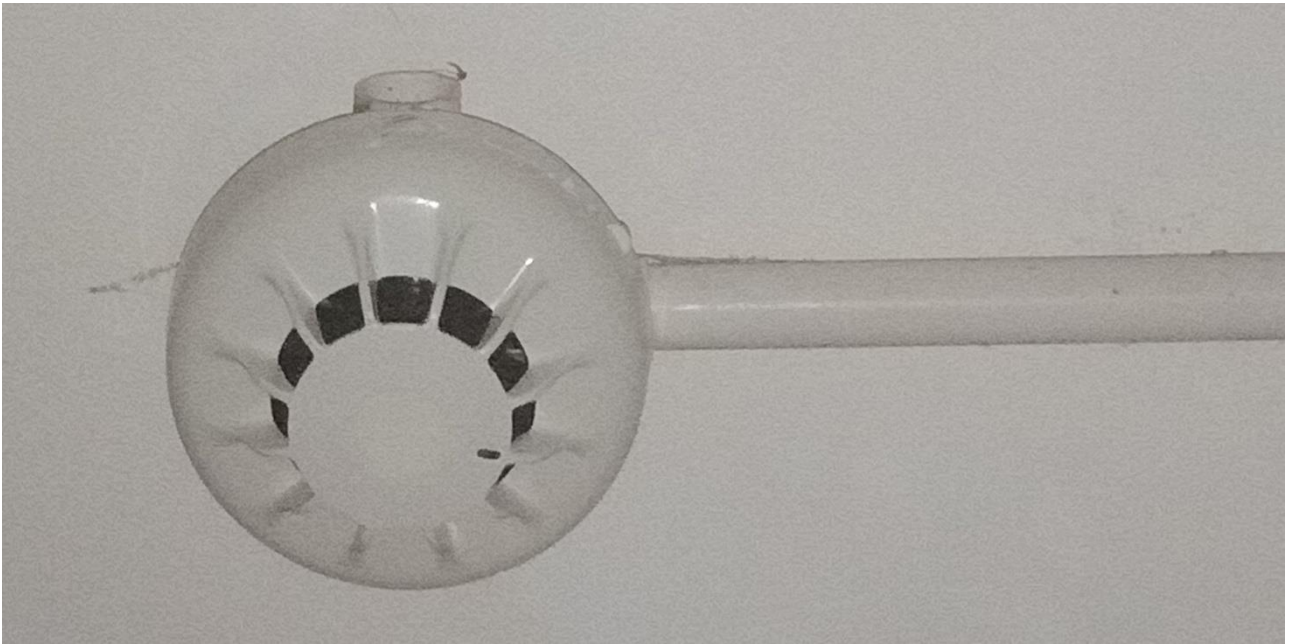


Nút nhấn khẩn

Types of Alarm signal device and Alarm Sensors



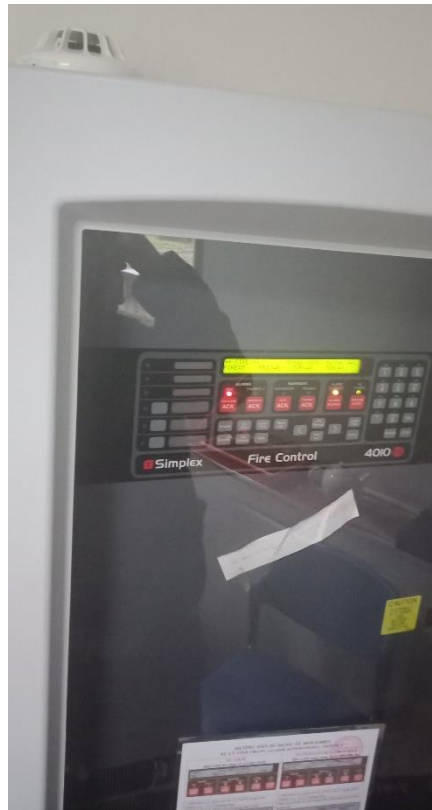
Fire Alert Panel



Current FPT University Dormitory's Alarm sensor



Current Manual
Pull-Down Station x2/floor

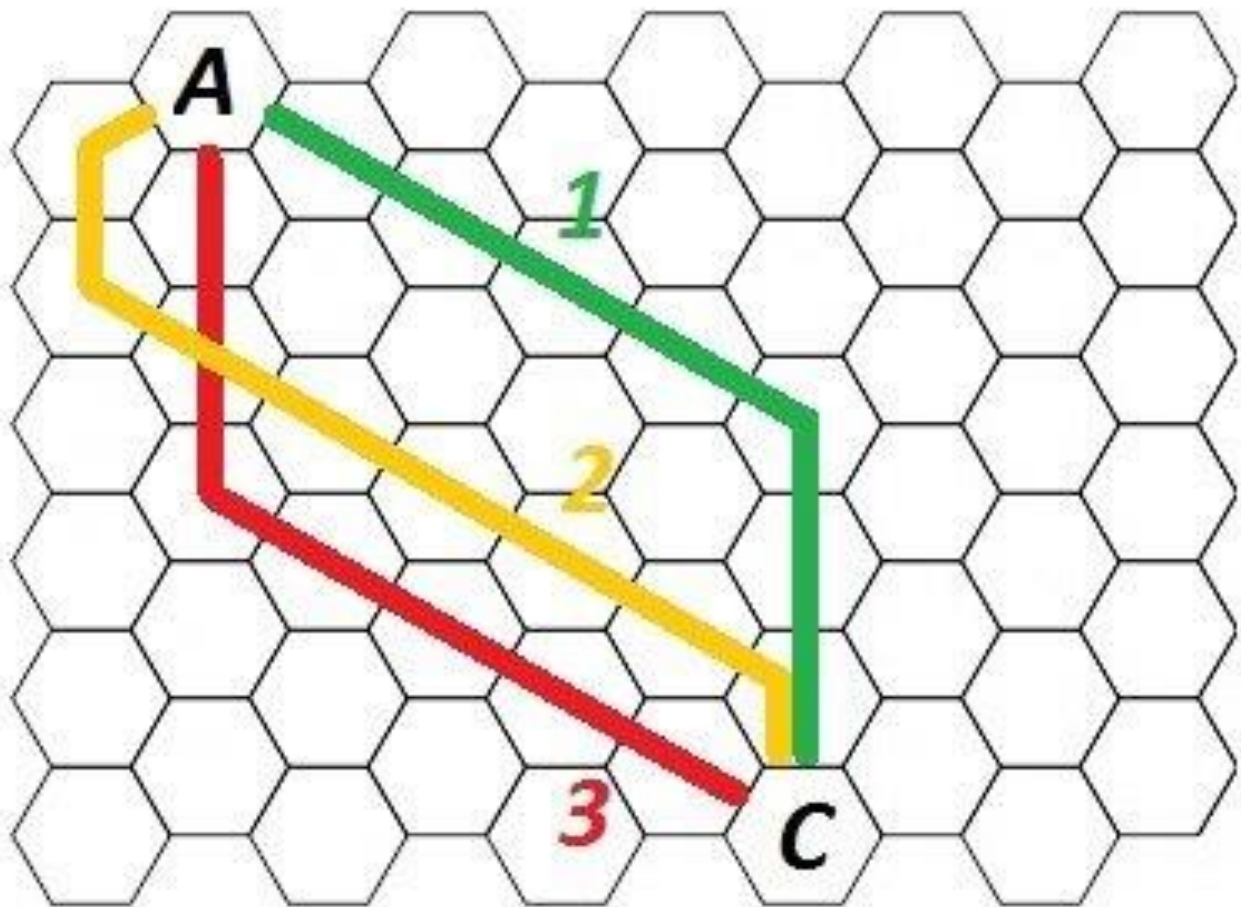


Fire Control Panel



Fire Hosereel

1.2.2.5.6. Zigbee technology

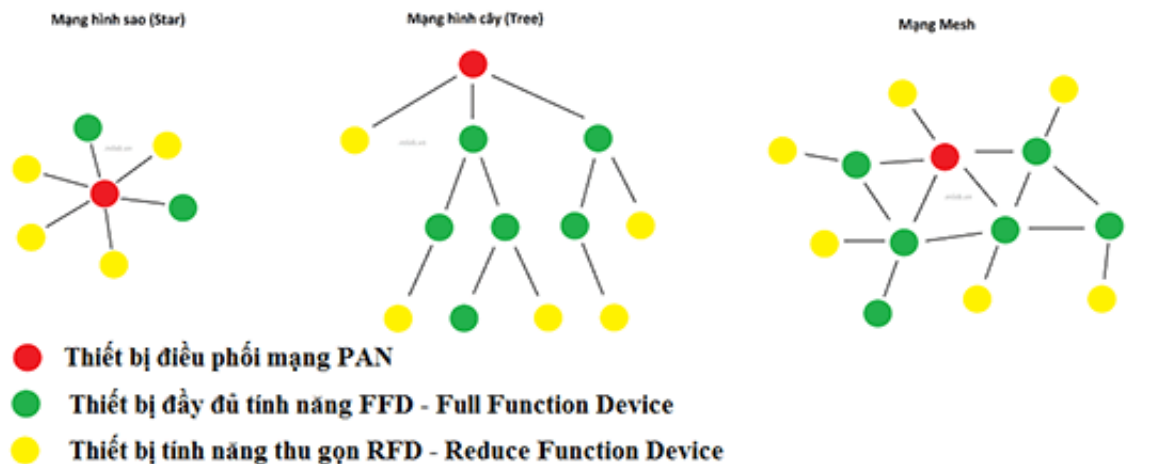


Structure: Physic Floor, Mac Floor, Web Floor, APS Floor, ZDO Floor, APO Floor

Components: ZC - Zigbee Coordinator, ZR - Zigbee Router, ZED - Zigbee End Device

Network Types: Star Topology, Mesh Topology, Cluster Topology

Các dạng mạng lưới trong ZigBee



Advantages: Easy installation, Internet connection, Energy saving, Extremely large and easy expansion, high security

Co-work Brand: Samsung, Philips, Ember, Invensys, Mitsubishi, Motorola, Honeywell

1.2.2.5.7. Fire Alert System with Zigbee

Price: **600.000 VNĐ**



Xiaomi Honeywell Smoke Alarms Help to quickly detect the signs before a fire occurs, which can prevent fires or limit damage to people and property.

Xiaomi Honeywell smoke alarms are designed in a circular shape, compact size of 90 × 90 × 36mm. The entire body of the device is made entirely from ABS plastic.

On the body of the device is equipped with sensors, which can detect the appearance of smoke in the air. The most obvious sign from the time the fire appears until it spreads into a fire. This is considered a key point, can help prevent timely fires or partly limit the loss of life and property when a fire occurs.



Thanks to being equipped with alarm speaker. When there is an indication of smoke, the Xiaomi Honeywell smoke detector will detect and start emitting a warning with a pass. Help people can detect and timely to evacuate and handle.

In addition to direct alarms by means of a push, using ZigBee cloud technology, the device can be connected to the Mijia application on the phone and send alert notifications to the smartphone. This will help you get alerts even when you're not at home. This ensures the timeliness of the alert when there is a fire, increasing the safety rate for people and property at home. Thanks to being equipped with alarm speaker. When there is an indication of smoke, the Xiaomi Honeywell smoke detector will detect and start emitting a warning with a pass. Help people can detect and timely to evacuate and handle.

In addition to direct alarms by means of a push, using ZigBee cloud technology, the device can be connected to the Mijia application on the phone and send alert notifications to the smartphone. This will help you get alerts even when you're not at home. This ensures the timeliness of the alert when there is a fire, increasing the safety rate for people and property at home.



Xiaomi smoke alarms use the energy coming from the CR123A battery, according to the manufacturer, which can help the device operate for 5 years to be replaced by another battery.



1.2.3.Specify Requirement

- Use QR for meter's ID assign
- Use OCR to scan numbers then upload to database
- Add automatical payment method for FAP wallet
- Suitability for both Guards and Students
- Provide wifi around the dormitory and university area
- Account management for 2 kinds of users
- Need a database for transferring information and alert
- Reduce Inaccuracies
- Simplify Usability & Accelerate all process

Report No.2: **DESIGN PROPOSAL**

2.1.User Requirement Specification

2.1.1.User Sketch

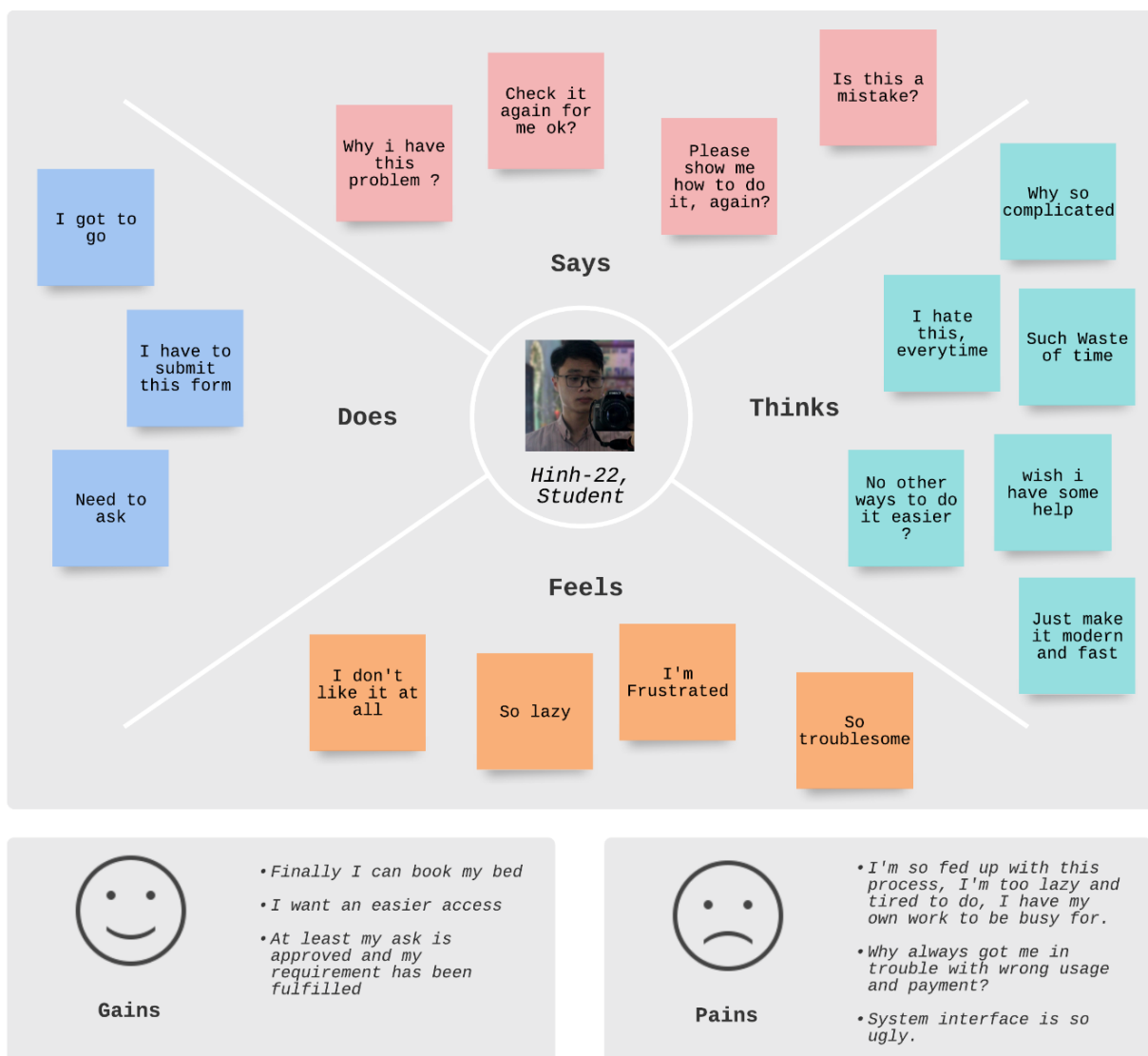
Based on the initial market research and what we have learned from the user researches, we can figure out various traits from our product's target audience.

Age	18-24	35-65
Occupation	Student	Guard
Income	No Income / Low Average	Low average
Hobbies	- Using Smartphone for facebook and games - Using PC, laptop to play games, watch clips - Joining extracurricular activities - Drinking Coffee, eating junk food	- Reading Newspaper - Write down notes - Talking and Making Acquaintance - Using Smartphone for Radio and Watch TV or news - Drinking tea, smoking
Signature traits	- Hate complicated process - Usually get distracted from living environment. - Spend a lot of time on Social Networks.	- Bad Health - Hard to Read and See, usually make mistakes - Slow approach to Modernity

	- Don't use the working time effectively.	- Takes long time to solve, usually disturbing - Old-fashioned - Work hard but ineffectively
Objectives	- Simple and Fast - Easy to Use - Fewer Mistakes	- Simple and Fast - Easy to Use - Easy to Read - Fewer Mistakes
Operating system	iOS, Android, MacOS, Window	iOS, Android

2.1.2. Empathy Map

We create empathy maps to provide insight into users and external impact on their needs and decisions.



(Student)



Gains

- I got good feedback from most of student
- Student helps me a lot in finishing my job
- This job is ok
- All is under control
- Mistake can be fixed

Pains

- I'm exhausted sometimes
- Mistake happens usually
- Security is good but some student does not follow it
- It takes too much workforce from us to do the job by manual actions

(Guard)

2.1.3. User Persona

As a result of the discussion in empathy maps and overview, together with survey result and interview direct approach, we have gone to 2 summarized personas to specify more about our users.

Trần Xuân Hình

Sinh viên K11 - FU



"Một cuộc sống hiện đại là một cuộc sống đơn giản, đầy đủ và dễ dàng"

Bio

Hình có một tính cách rất cá tính. Hơi lười vận động, thích những công việc ngồi một chỗ. Không thích người lạ làm phiền khi đang làm việc hoặc chơi game, giải trí. Tuy nhiên Hình bị tật hay quên, đầu óc lơ đãng nên Hình hay gặp khó khăn trong việc ghi nhớ kế hoạch để hoàn thành các công việc phức tạp.

Personality

Hướng nội		Hướng ngoại
Phân tích		Sáng tạo
Trung thành		Hay thay đổi
Bị động		Chủ động

Pain - Points

- Đầu óc hay lơ đãng, hay quên
- Gặp khó khăn trong việc ghi nhớ, xử lý các vấn đề phức tạp
- Hơi lười vận động

Needs and Goals

- Một ứng dụng có thể xử lý đơn giản những vấn đề về KTX
- Ứng dụng có tính năng giúp tăng độ an toàn cho KTX
- Không muốn bảo vệ vào phòng làm phiền mỗi lần đi kiểm tra số điện nước
- Có thể ra mắt trong thời gian sớm nhất
- Dễ sử dụng, giao diện đơn giản
- Có thêm tính năng báo cháy để tăng độ an toàn cho KTX, nếu xảy ra cháy có thể thông báo ngay lập tức về điện thoại để kịp thời xử lý

Pattern Behavior

Công nghệ ưu tiên

Mạng xã hội	
Phần mềm	
App di động	
IT & Internet	
Real life	

Nhãn hiệu ưa thích

Google

Canon

DELL

SAMSUNG

Tổng quan

Đơn giản

Hơi lười

Thông minh

Đẳng trí

(Student)



"Tôi yêu công việc này. Tôi muốn nó được làm theo cách hiện đại nhưng hãy chỉ cho tôi hiểu theo cách của người già chúng tôi"

Demographics

Họ và Tên	Nguyễn Văn Sơn
Tuổi	55
Nghề nghiệp	Bảo vệ cty TN
Đơn vị	KTX FU-HL
Tình trạng QH	Đã lập gia đình

Bio

Bác Sơn là một bảo vệ có kinh nghiệm nghề nghiệp lâu năm. Hiện tại đã làm việc ở KTX - FU được gần một năm. Tuy nhiên vì bác cũng đã lớn tuổi nên đầu óc và trí nhớ có đôi chút giảm sút nên trong công việc bác đều phải rất tập trung và ghi chép lại mọi thứ thật kỹ lưỡng. Vì vậy sẽ tốn thêm nhiều thời gian hơn để hoàn thành các công việc.

Personality

Hướng nội		Hướng ngoại	
Phân tích		Sáng tạo	
Trung thành		Hay thay đổi	
Bị động		Chủ động	

Pain - Points

- Vì tuổi cao nên đầu óc và trí nhớ có đôi chút giảm sút
- Thị lực không còn tốt
- Sức khoẻ có chút giảm sút

Needs and Goals

- Có một ứng dụng có thể giúp quản lý và xử lý các vấn đề về KTX
- Ứng dụng dễ sử dụng
- Giao diện dễ nhìn, chữ và nút bấm to rõ ràng
- Ứng dụng có tính năng báo cháy để tăng độ an toàn cho KTX, khi xảy ra sự cố có thể thông báo ngay về điện thoại để kịp thời xử lý

Pattern Behavior

Công nghệ ưu tiên

Mạng xã hội	
Phần mềm	
App di động	
IT & Internet	
Real life	

Nhãn hiệu ưa thích



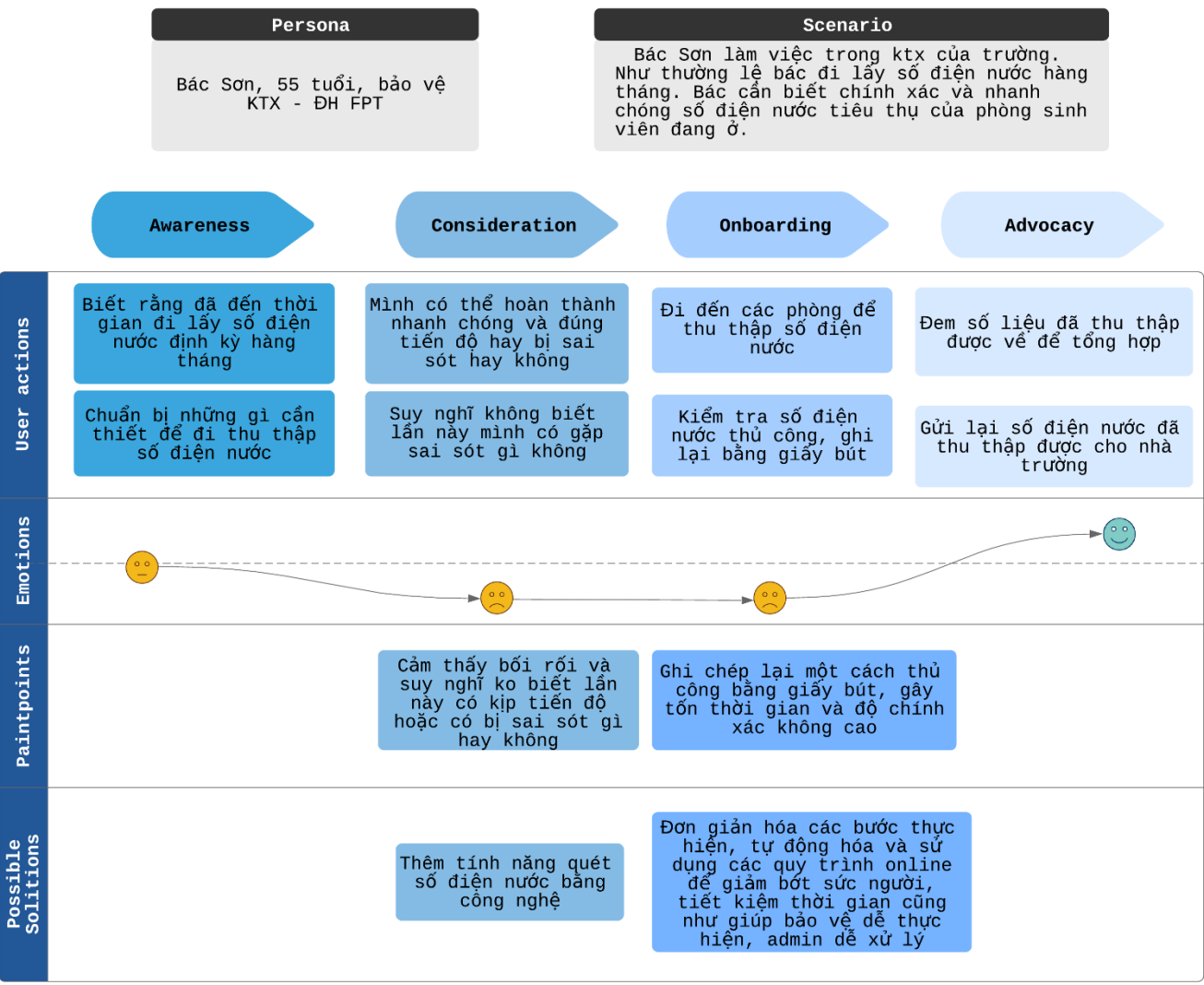
Tổng quan

Siêng năng	Tốt bụng
Cao tuổi	Đãng trí

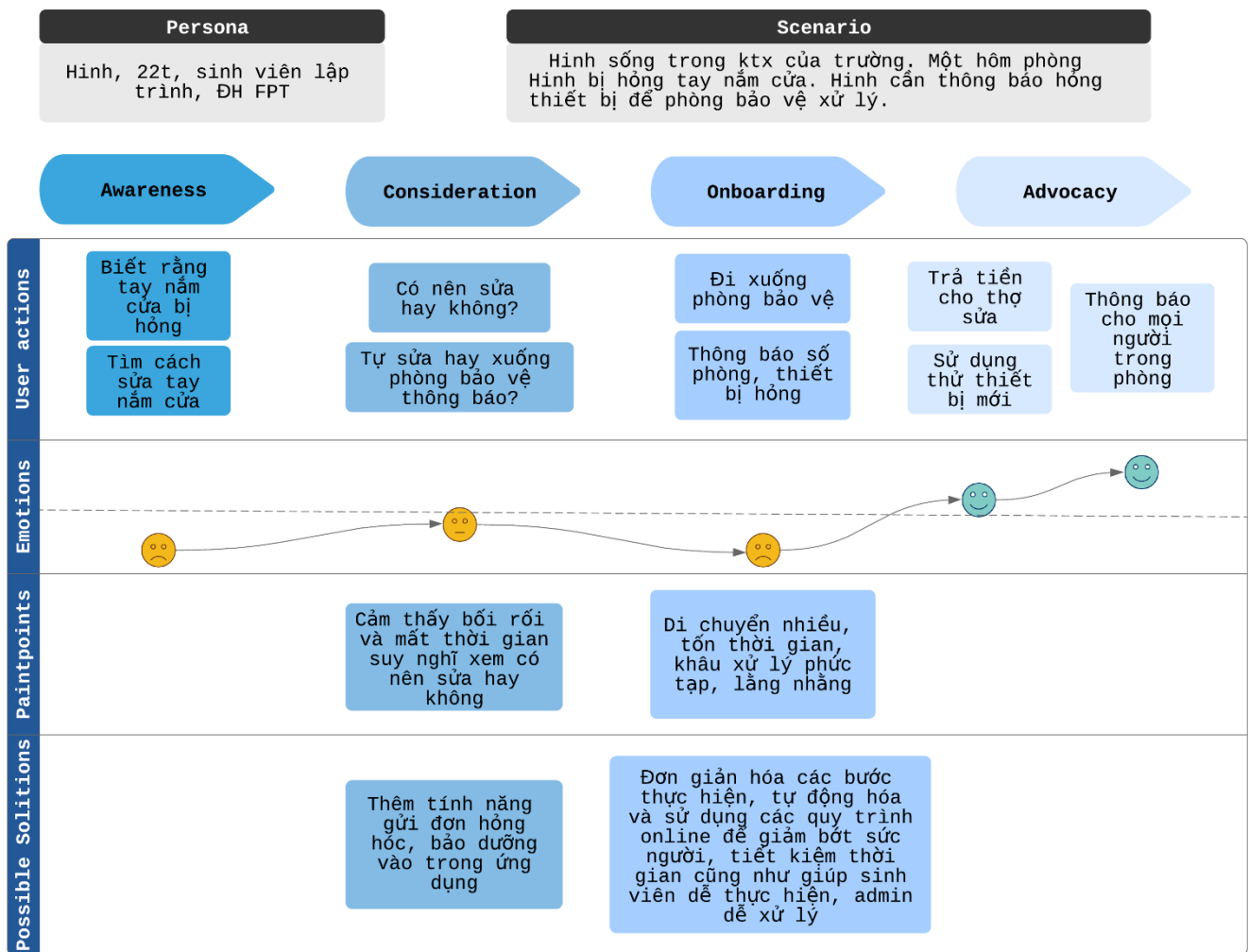
(Guard)

2.2.Building First Sitemap

2.2.1.User Journey Map



(Guard)



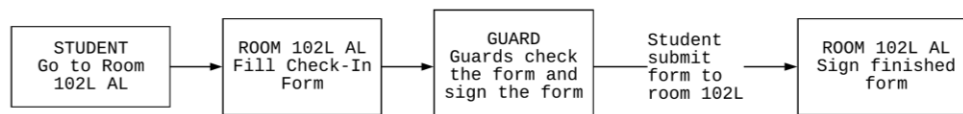
(Student)

2.2.2.Workflow Analysis

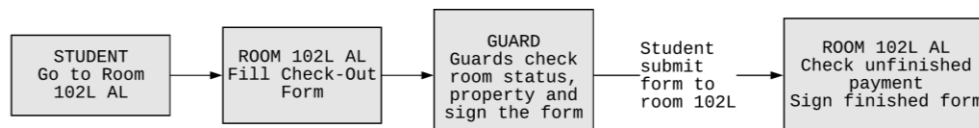
2.2.2.1. Old Workflow

BEFORE OCD METHOD

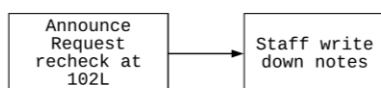
CHECK IN PROCESS



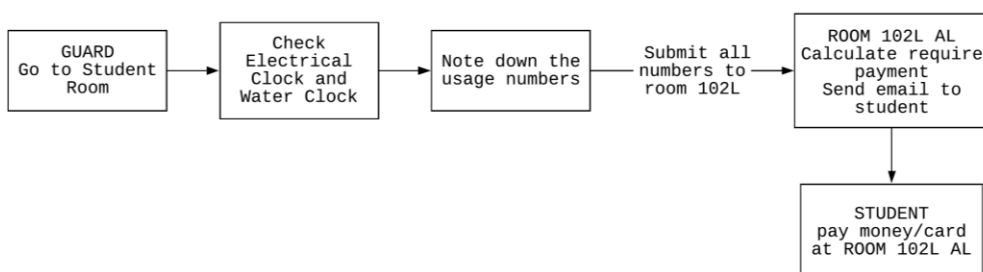
CHECK OUT PROCESS



REQUEST A RE-CHECK IN USAGE COLLECTION

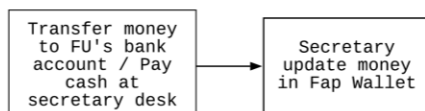


COLLECT MONTHLY E/W USAGE

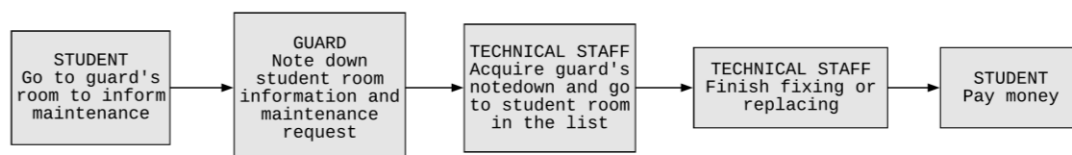


PAY FOR ABUNDANT MONTHLY E/W USAGE

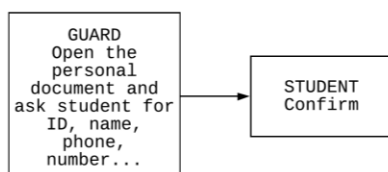
TOP-UP FAP WALLET



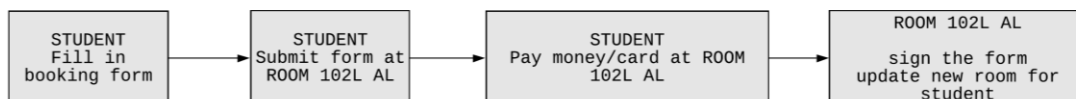
MAINTENANCE REQUEST



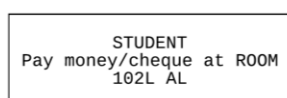
STUDENT INFORMATION MANAGEMENT



BOOK NEW BED / CHANGE BED

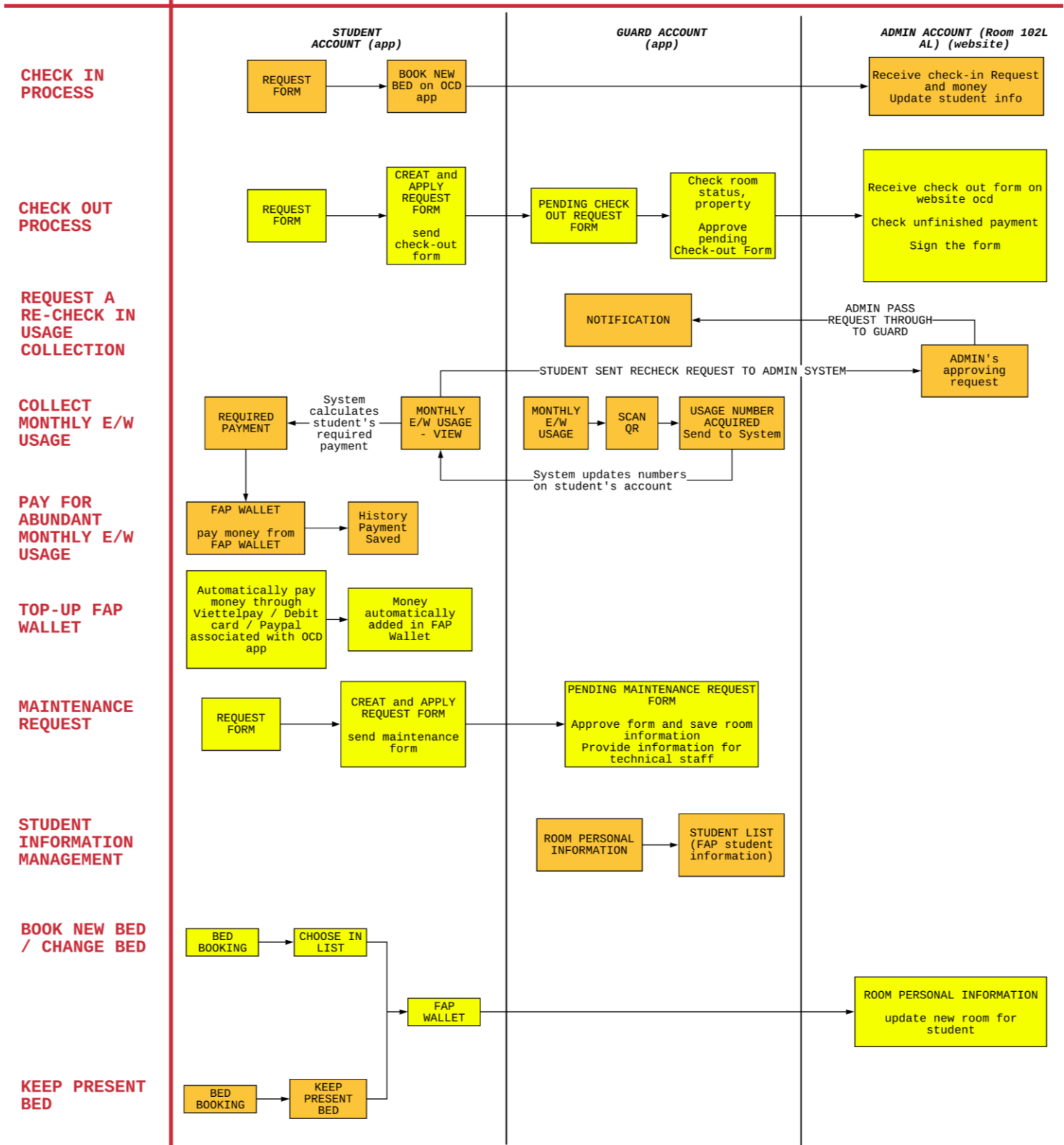


KEEP PRESENT BED

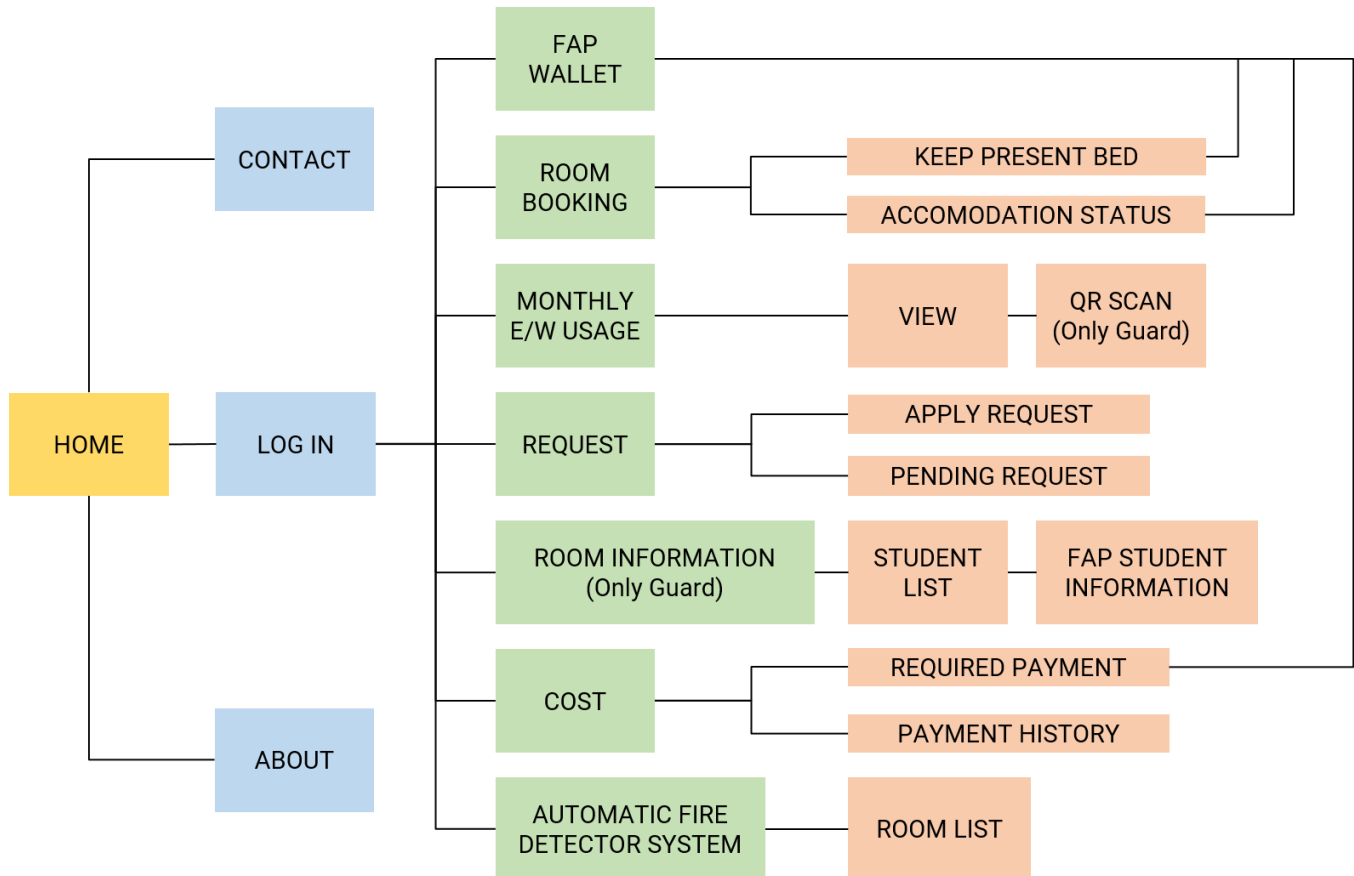


2.2.2.1. OCD Workflow

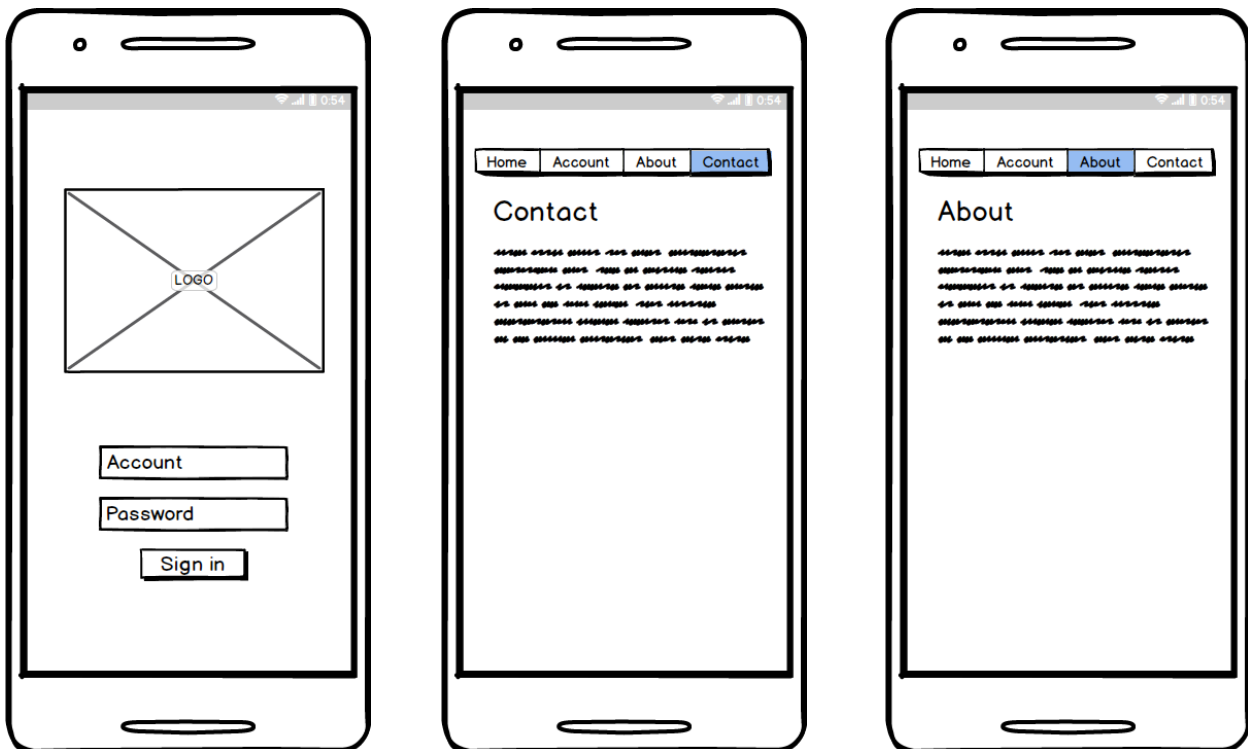
AFTER OCD METHOD (Some methods are developed idea compared with current OCD website)

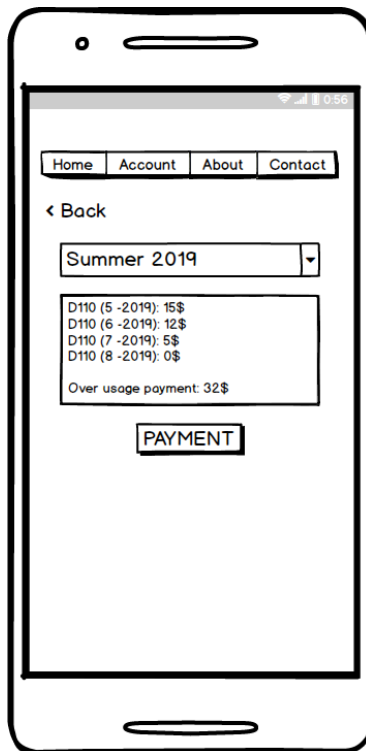
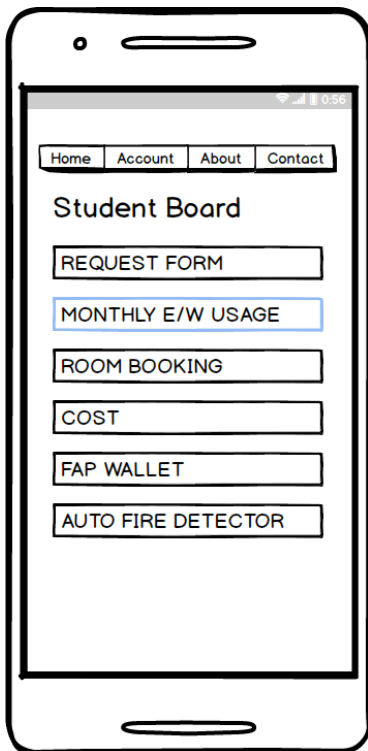
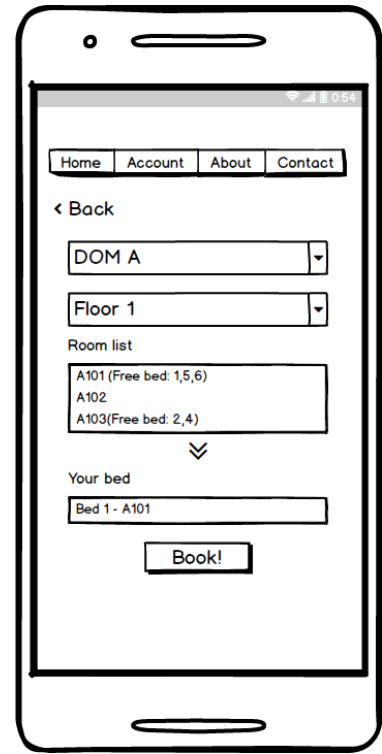
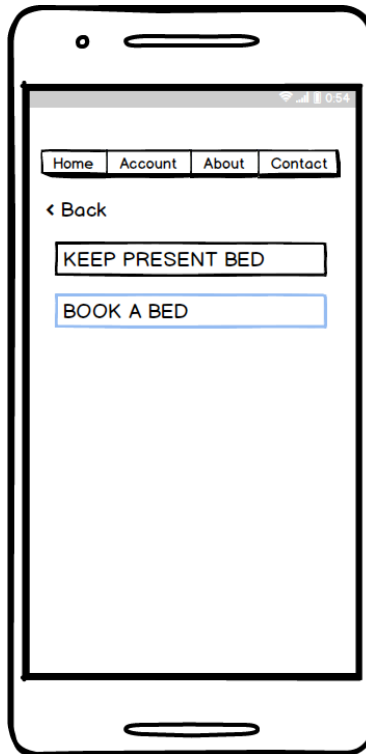
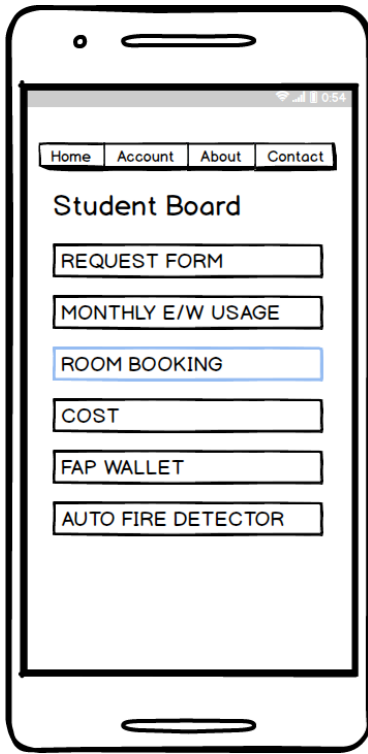


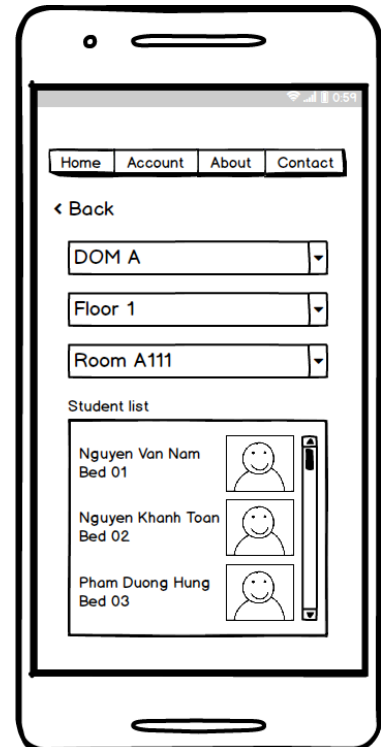
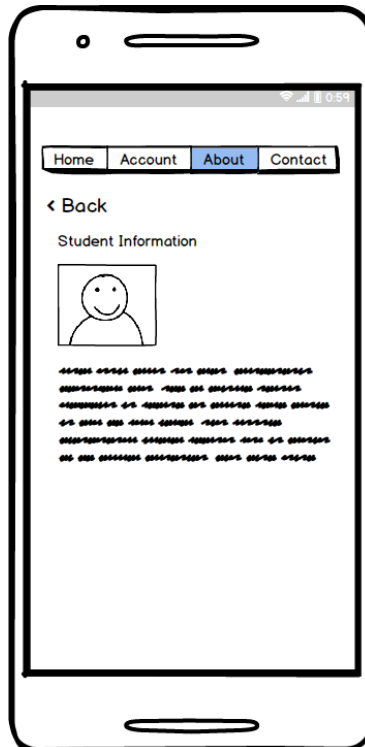
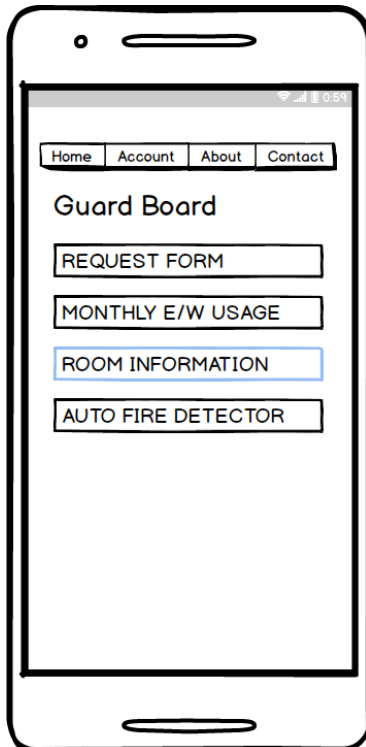
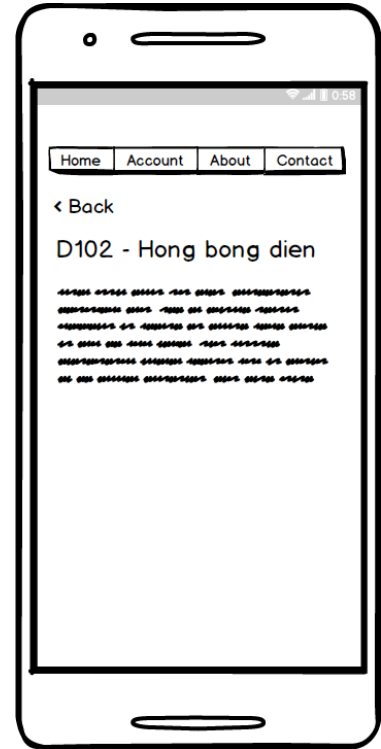
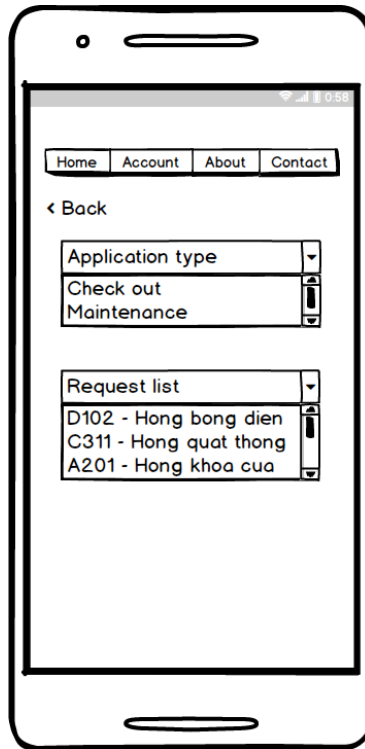
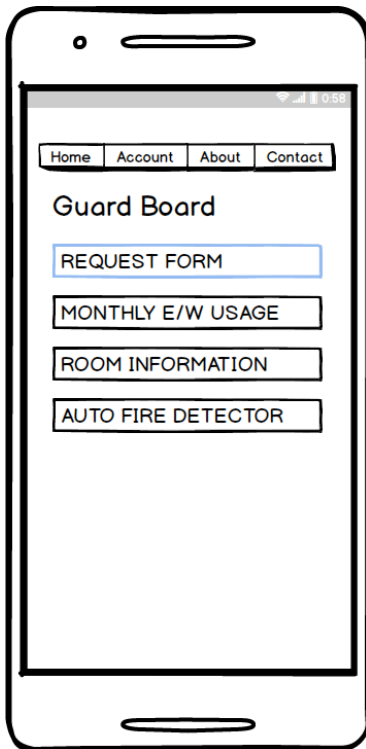
2.2.3.First Sitemap



2.3.Building First Prototype







Report No.3: **Pre Design**

3.1. User Test

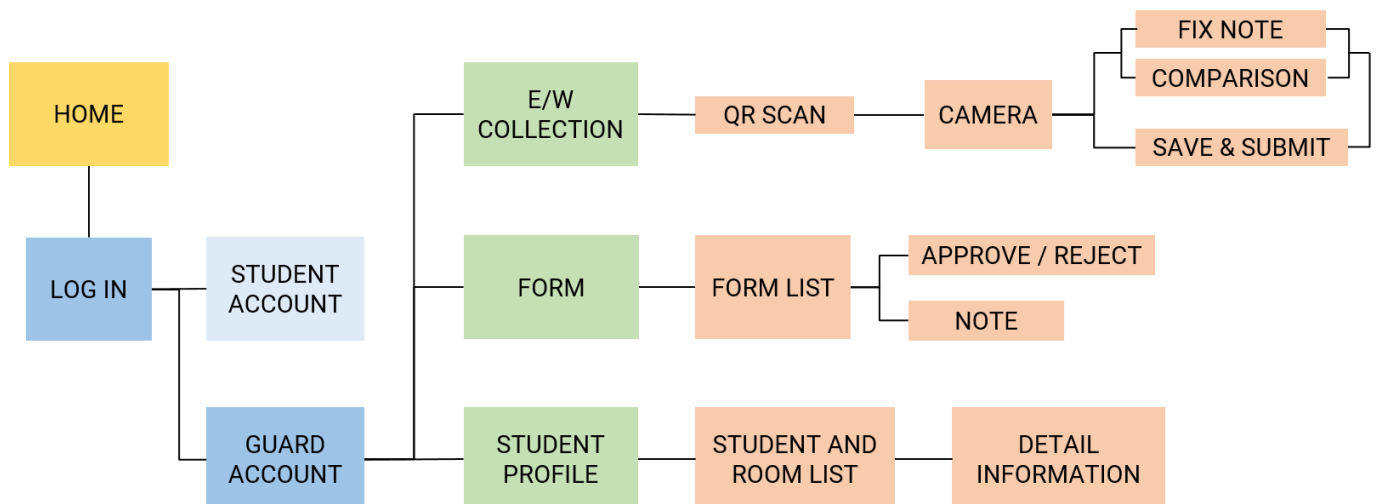
We discussed and consulted the instructor to improve the next prototype. Here are what we got for development:

WEAKNESSES POINTED OUT	HOW WE FIX
Guard will not be able to read and understand english	Enlarge the font size for guard account Default Vietnamese
What happen when students cannot make an emergency call?	Add an emergency chat box for student to chat with guards
FAP Wallet should not let out on Home as a function, that's too redundant	Put FAP wallet inside payment. Just let balance show outside on a small cornet
Fire Alert is a special feature, should not let it out at HOME as a normal main function	Only let Fire Alert show up in a special pop-up, has its own design and only appear when needed
Spell Mistake	"Request" changed to "Form
Guard will not be able to see clearly sometimes especially when doing some important process like USAGE COLLECTION	Add a voice to read for Guards.
RFID cannot be applicable due to uncessary and it brings back too much hardship. Also expensive, and impossible to add to recognize meter ID. Also many RFID chips near each other, producing same waves at the same time, can create many conflicting waves which makes smartphone confuse and cannot detect the write wave.	Omit RFID, change to QR code and OCR only
Sitemap must not add both account types together because the website will not work, and it's impossible to create two parallel kinds of user in one account.	Must let guard account and student account be seperated. Two sitemap would be considered.

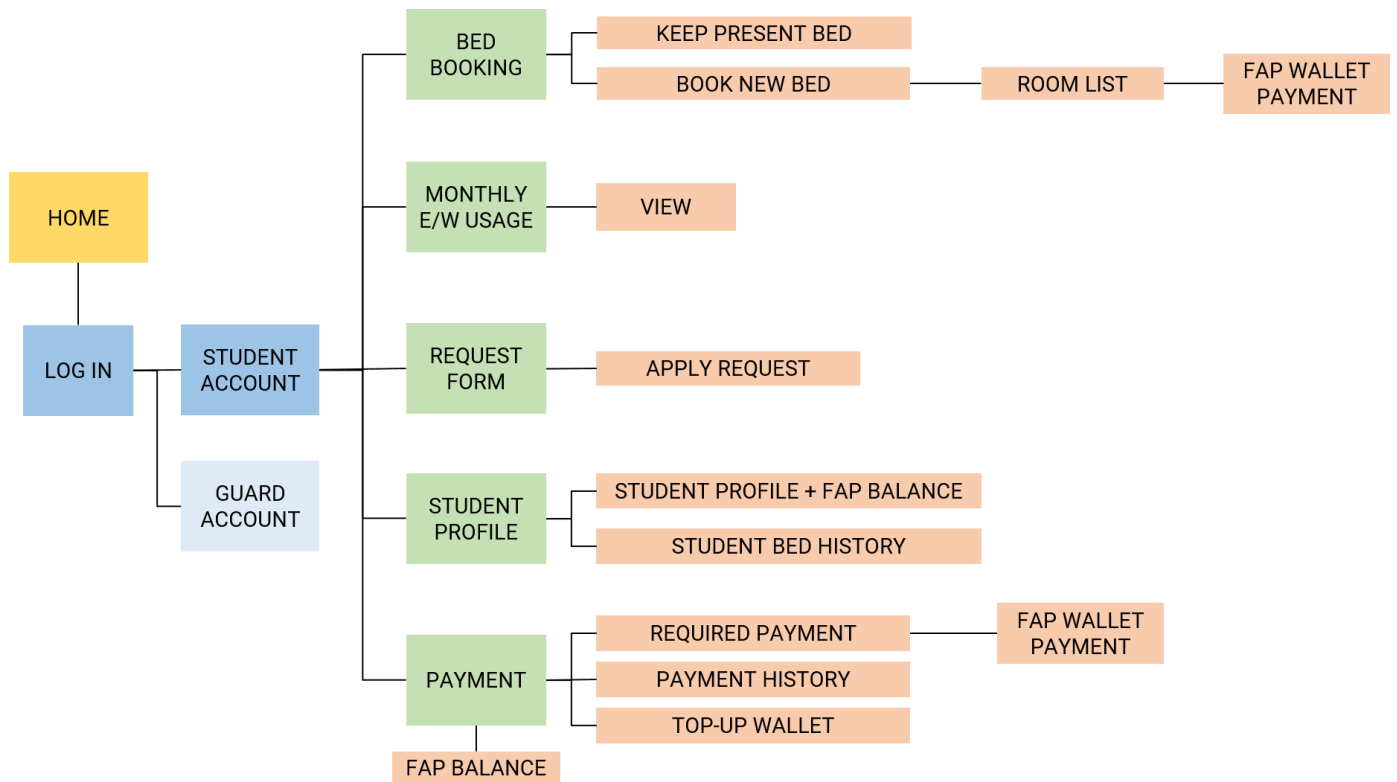
	We made one extra interview specialized on the idea of TOP-UP FAP Wallet online on OCD app with the present FPT secretary at 102L and already recorded it the dialouge. At first the secretary seemed to disapprove our idea. But after explaining, she agreed that it was a good idea and support one of our new feature. We are very glad to develop all creative features.
--	--

3.2. Building Second Sitemap

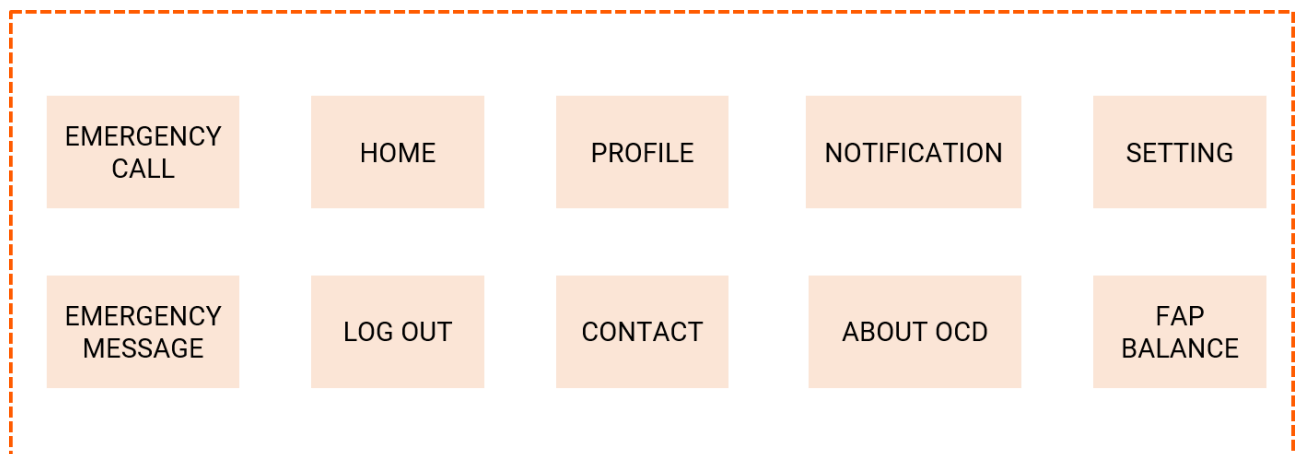
3.2.1.Second Sitemap



(Guard)

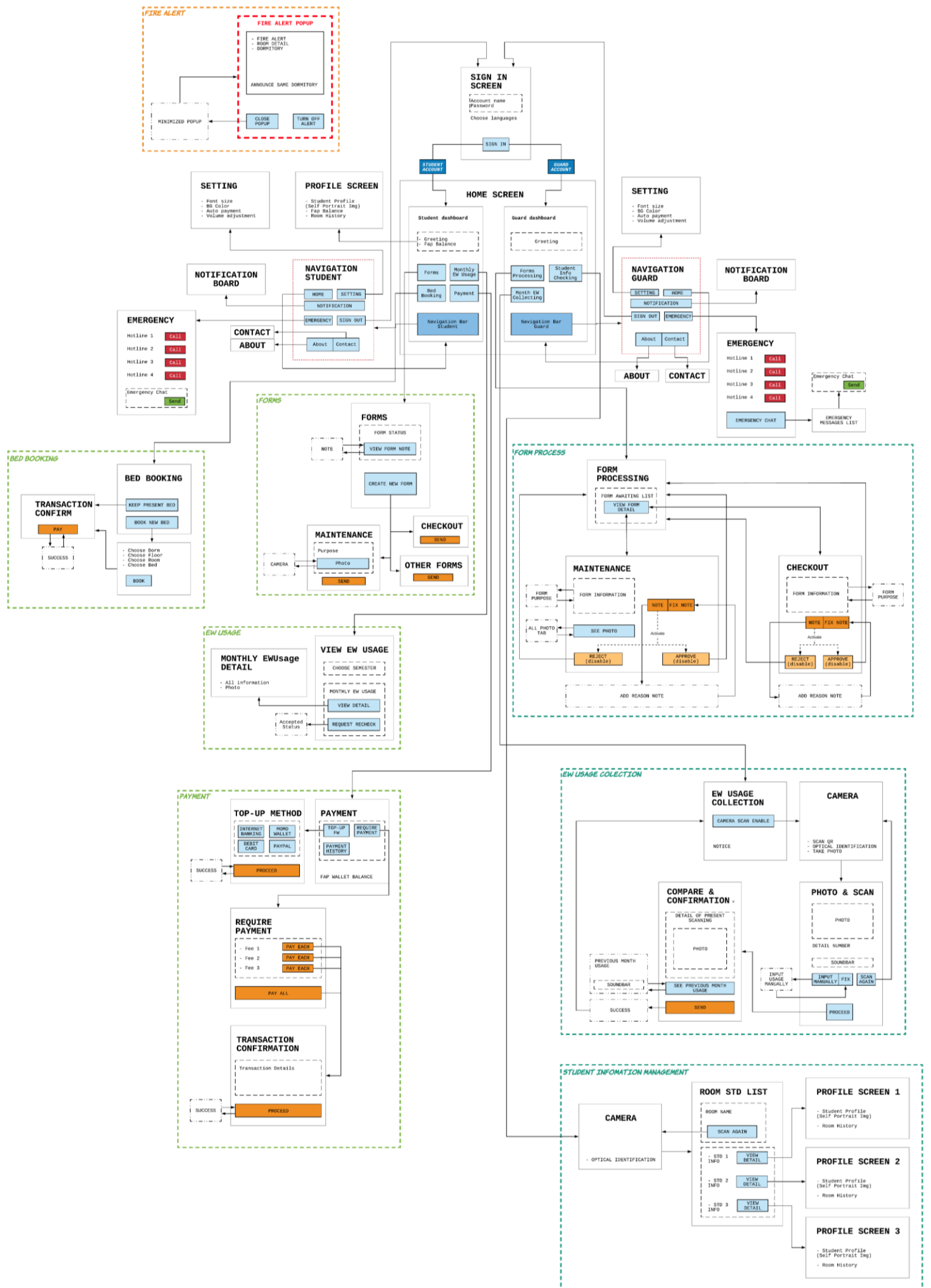


(Student)



(Navigation bar)

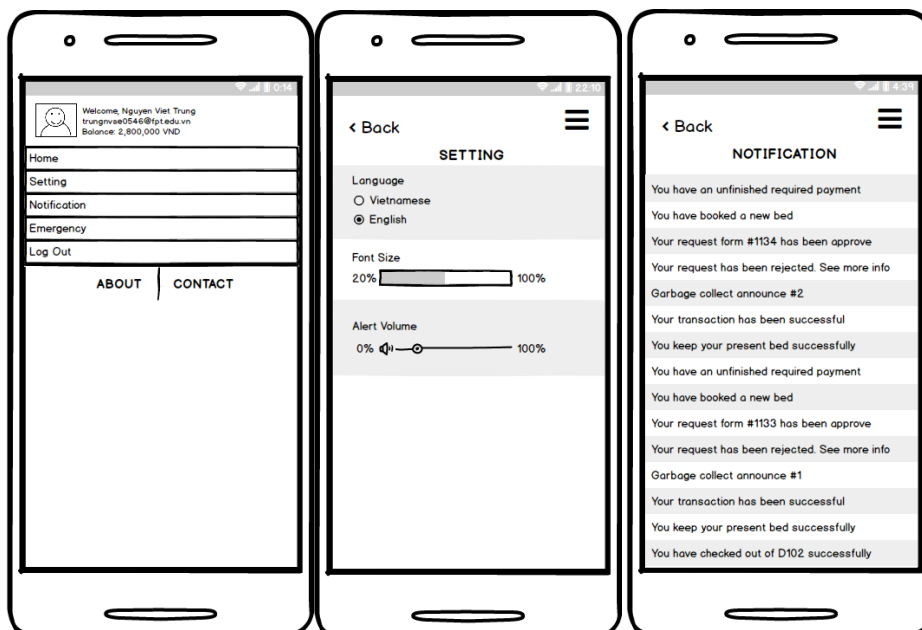
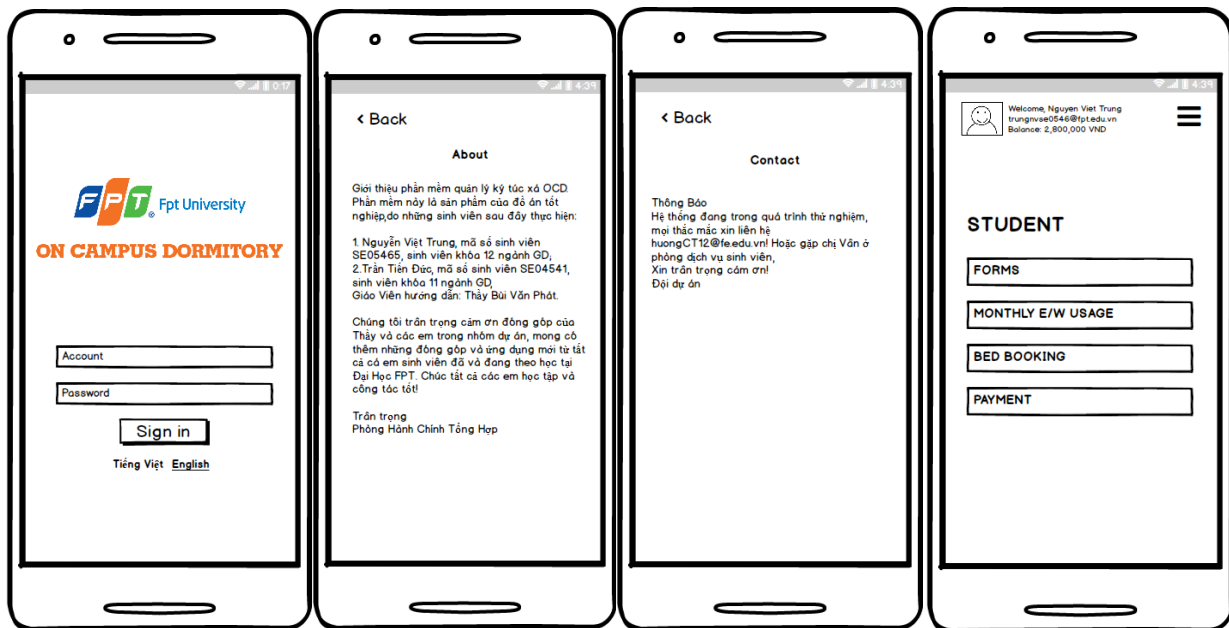
3.2.2.Screen Map

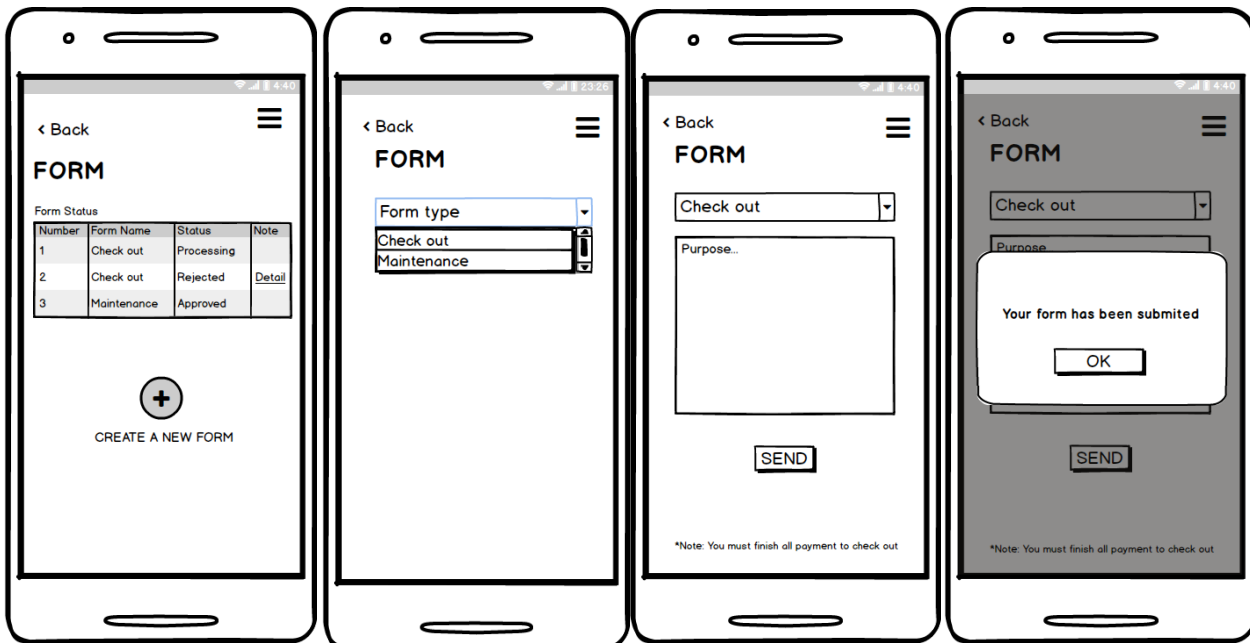
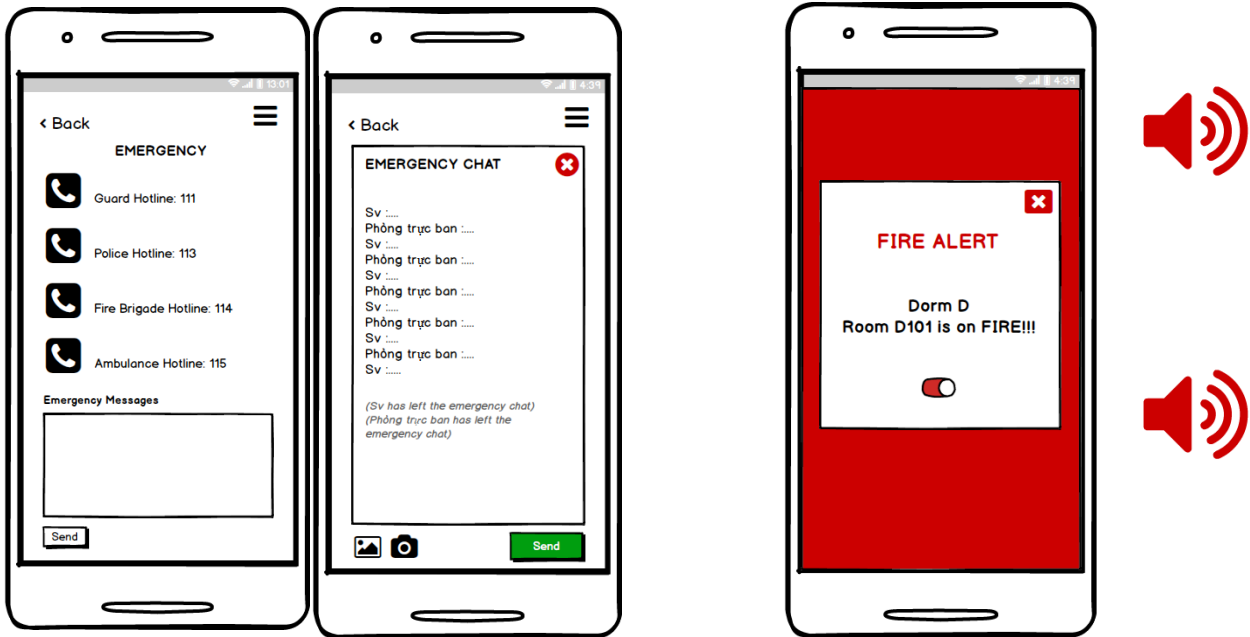


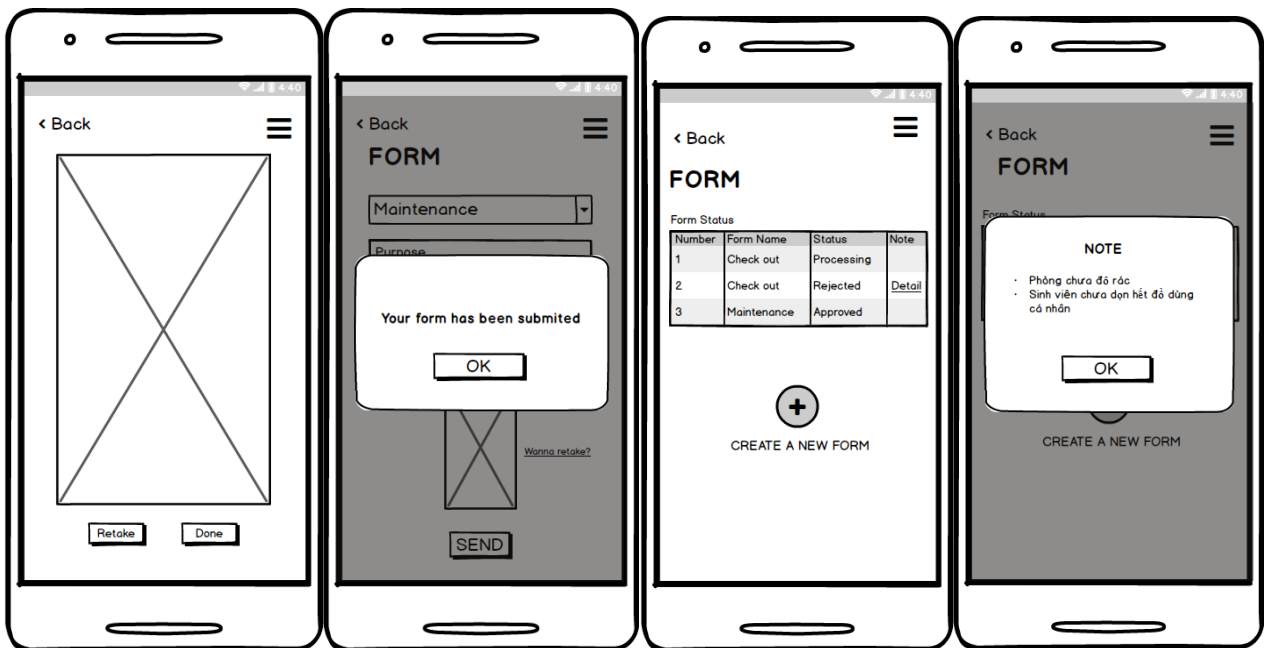
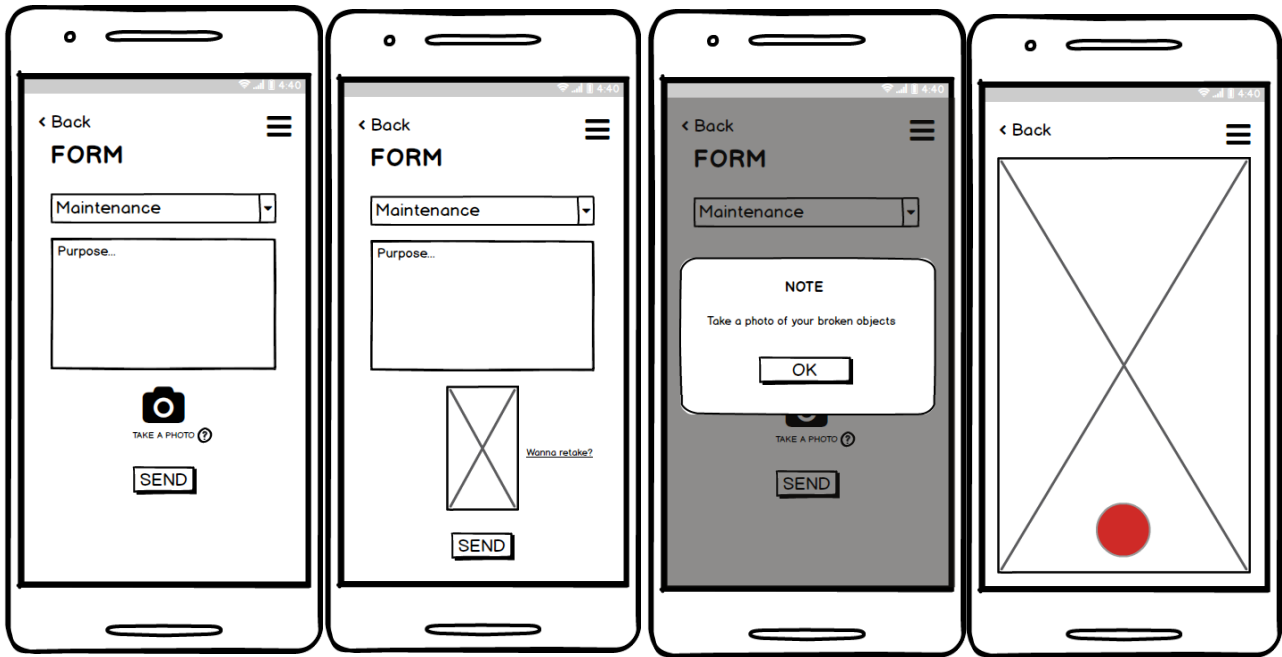
3.3. Building Second Prototype

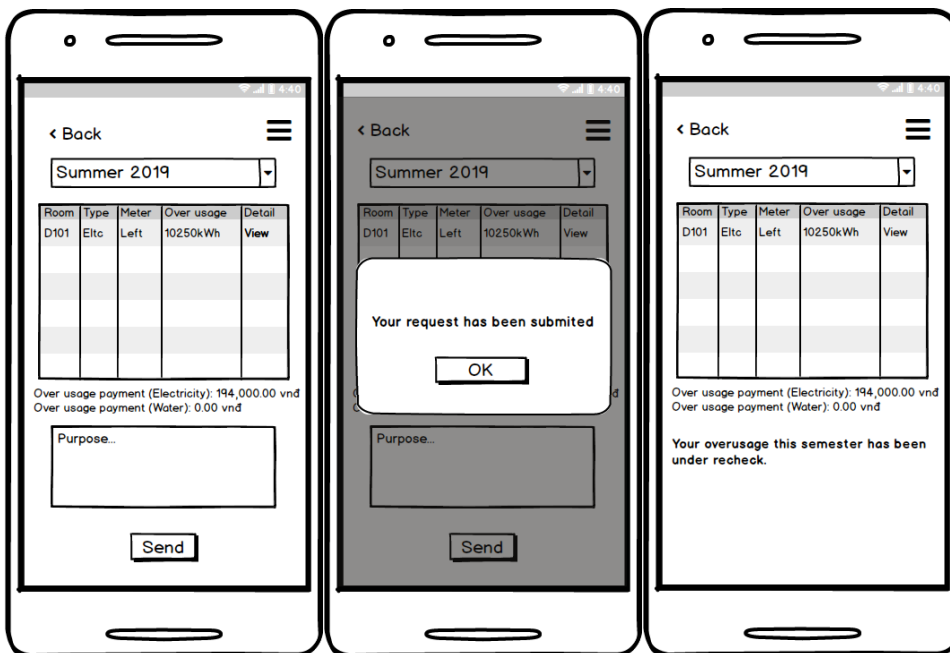
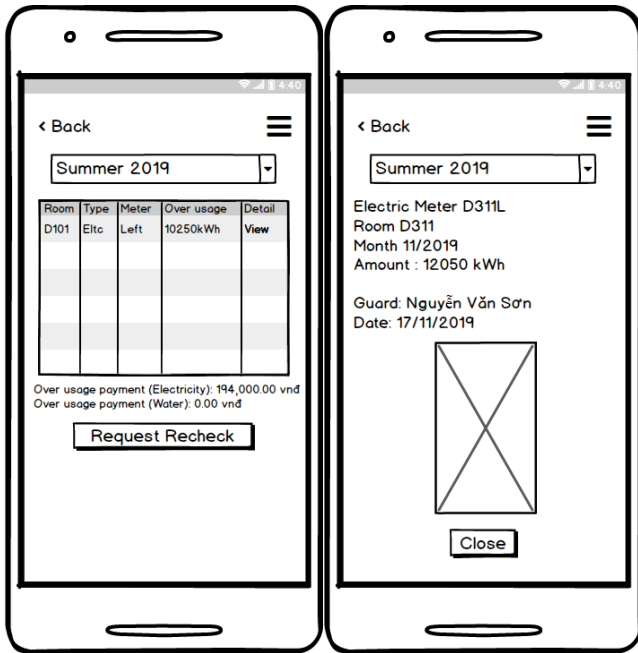
3.3.1.Second Prototype

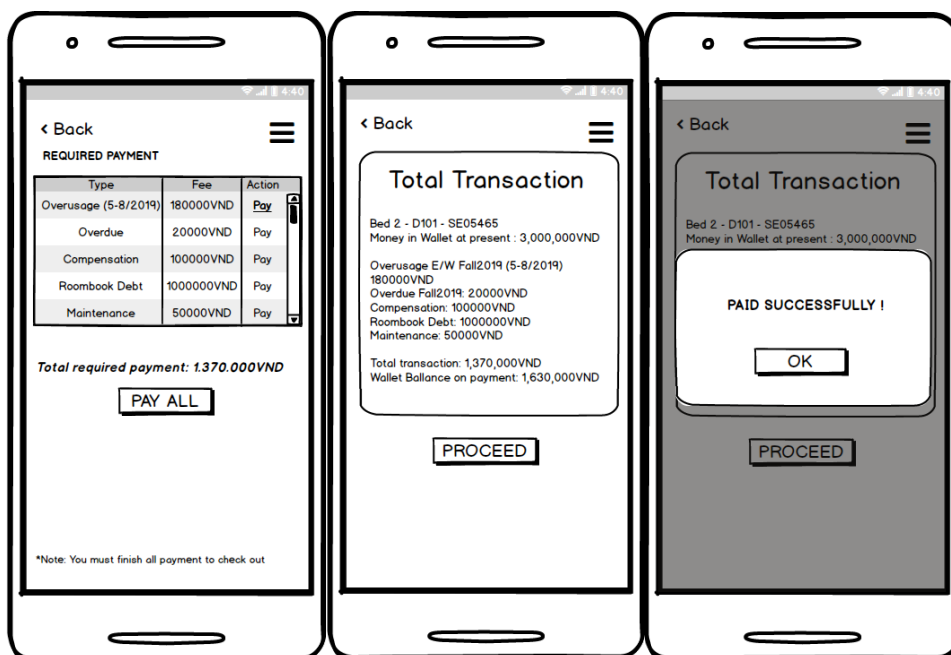
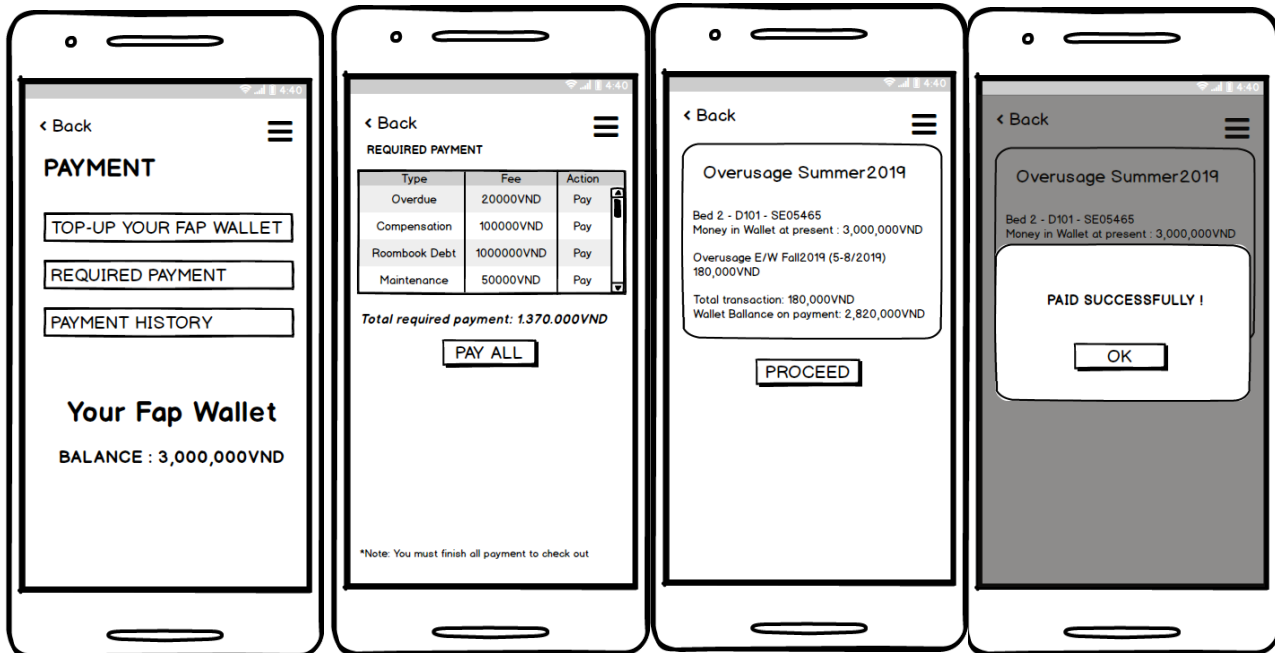
3.3.1.1.Student

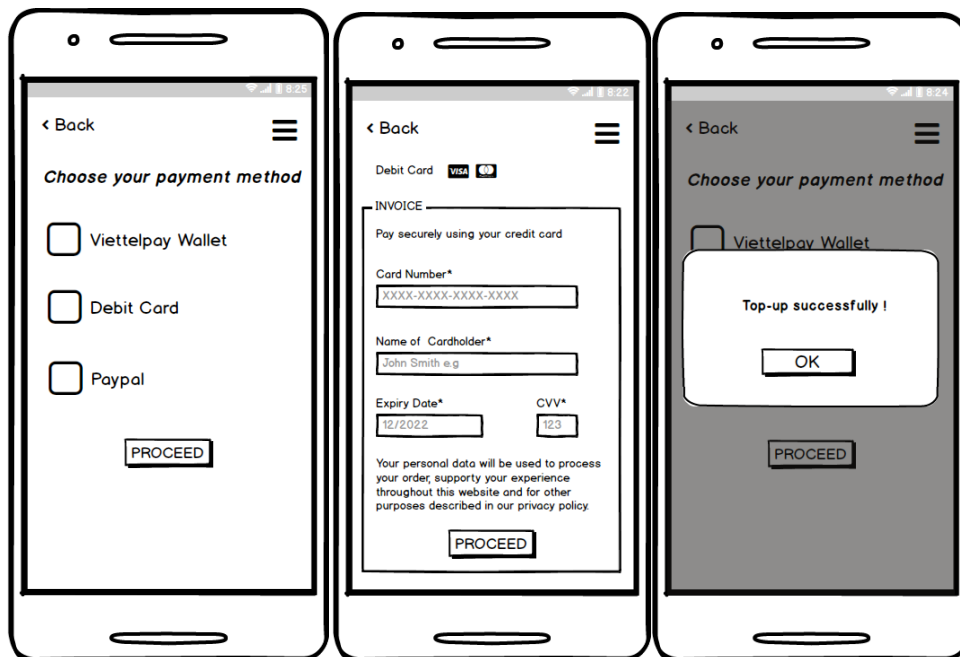


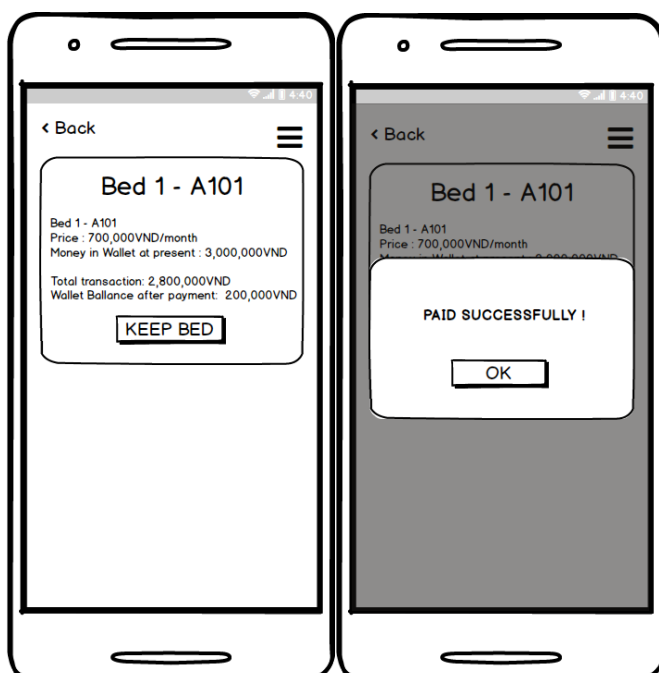
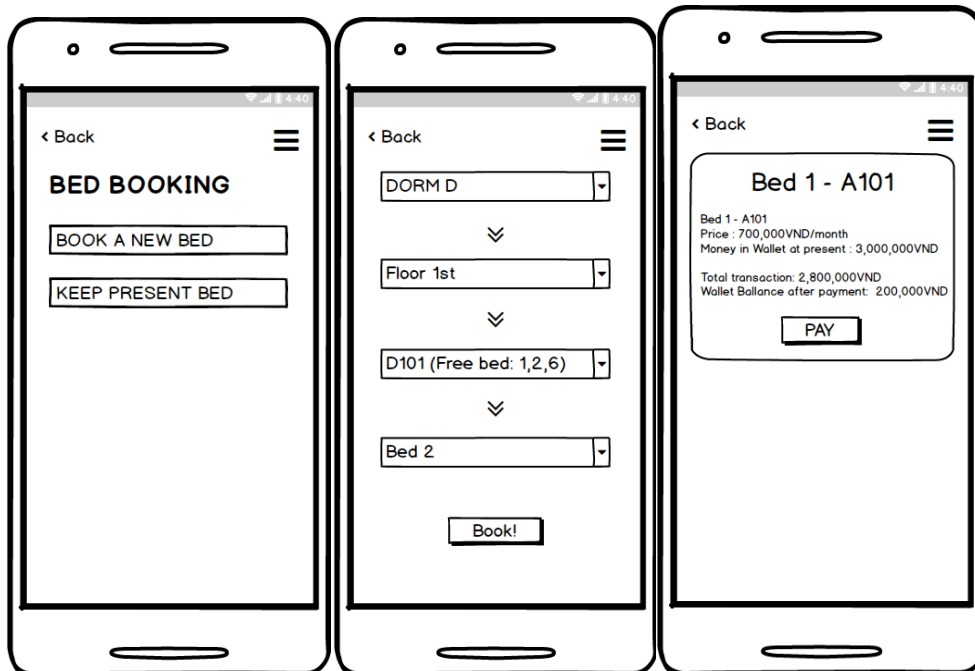




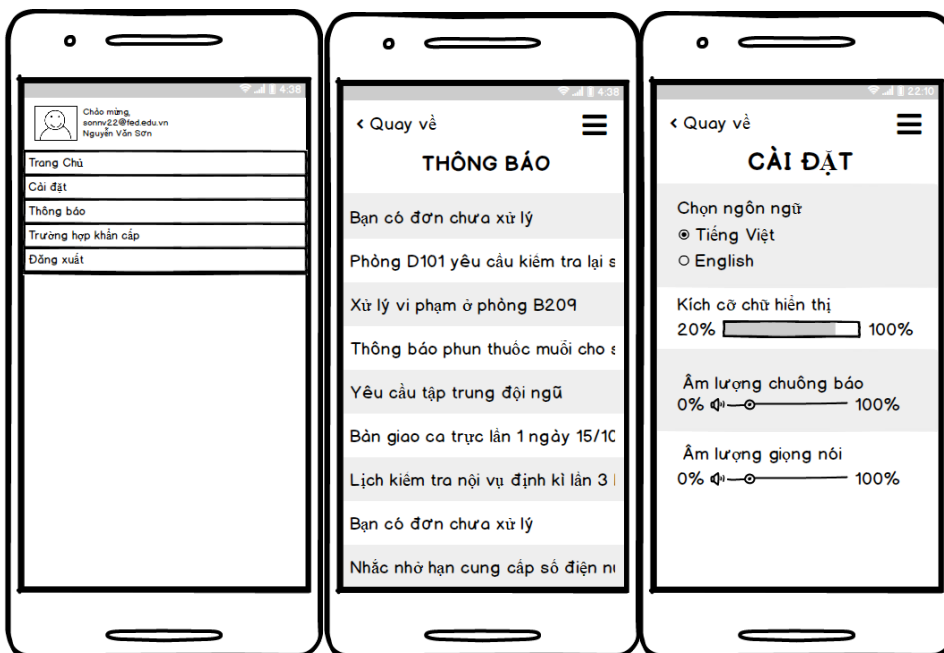
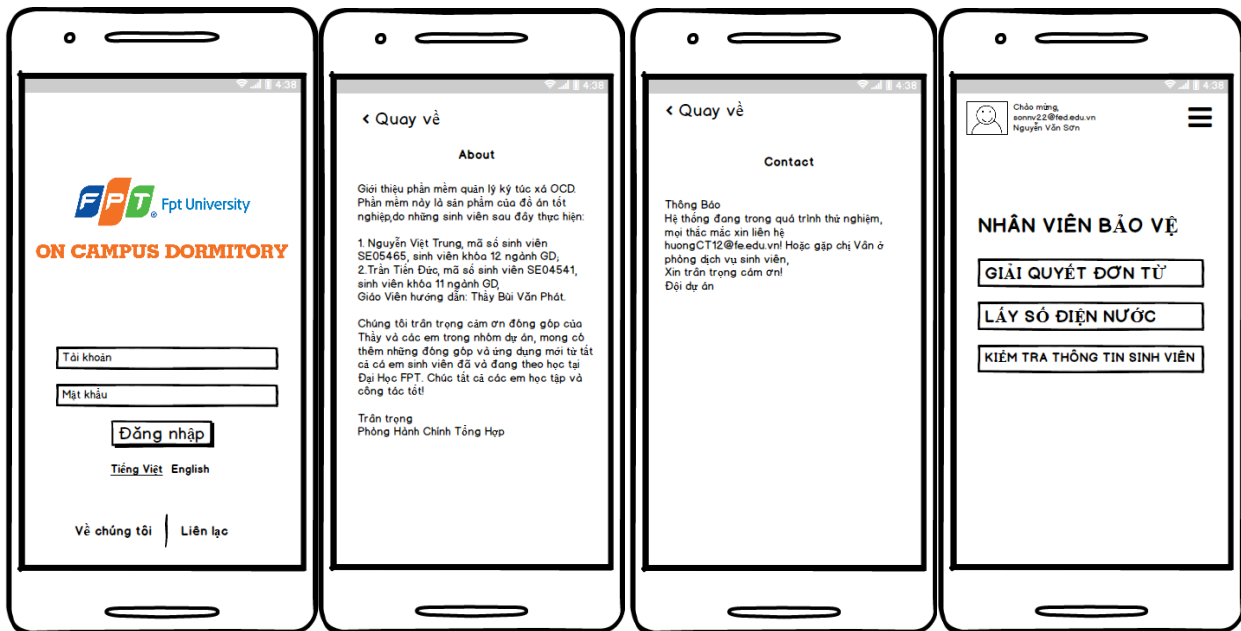


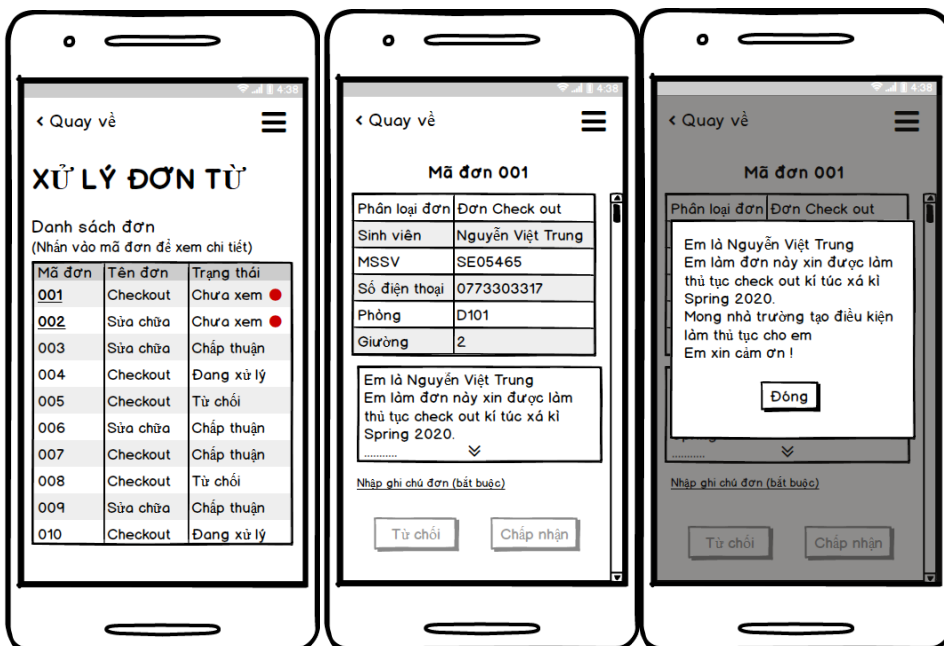
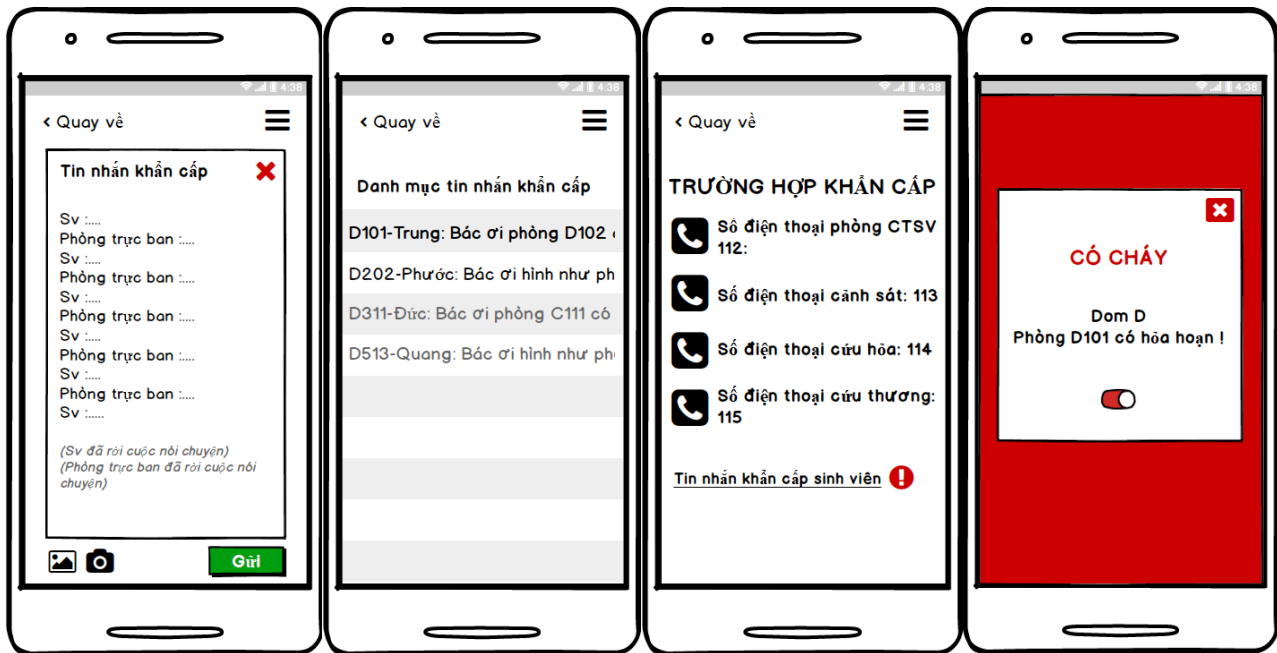


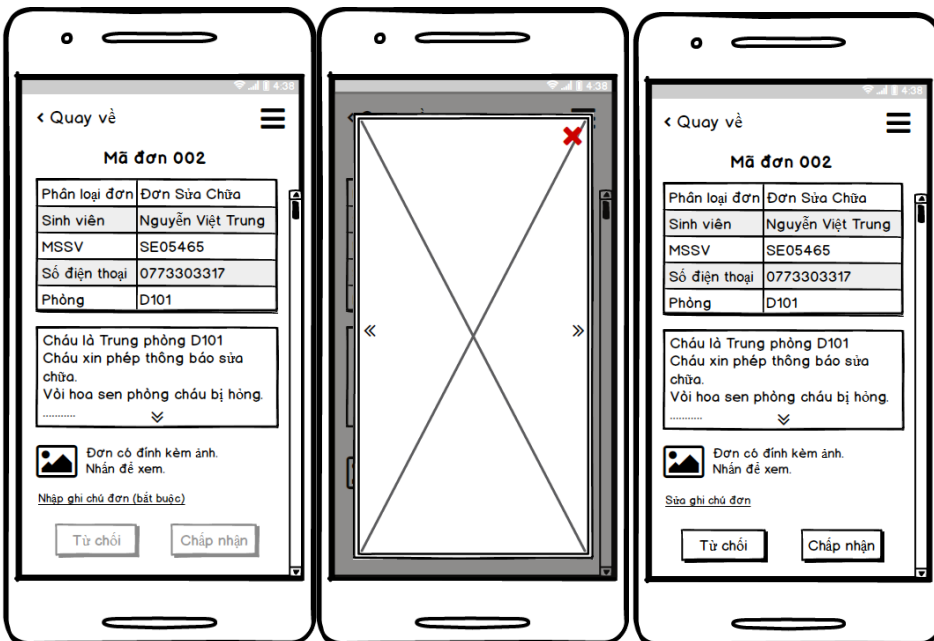
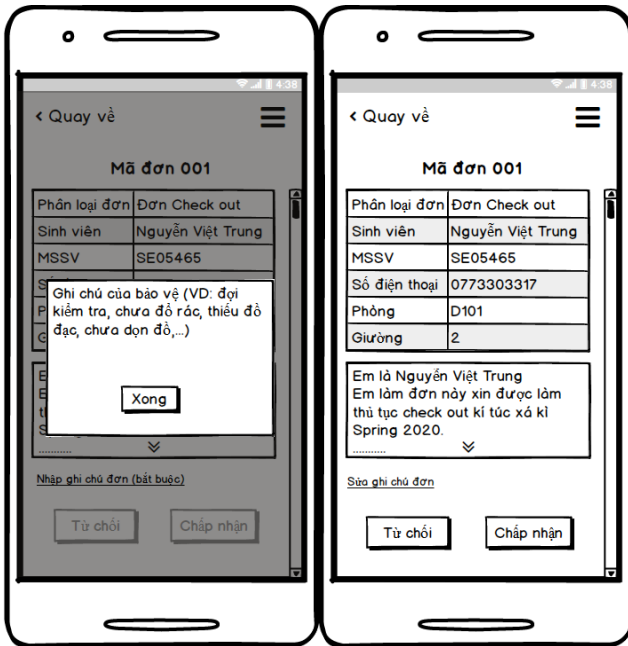


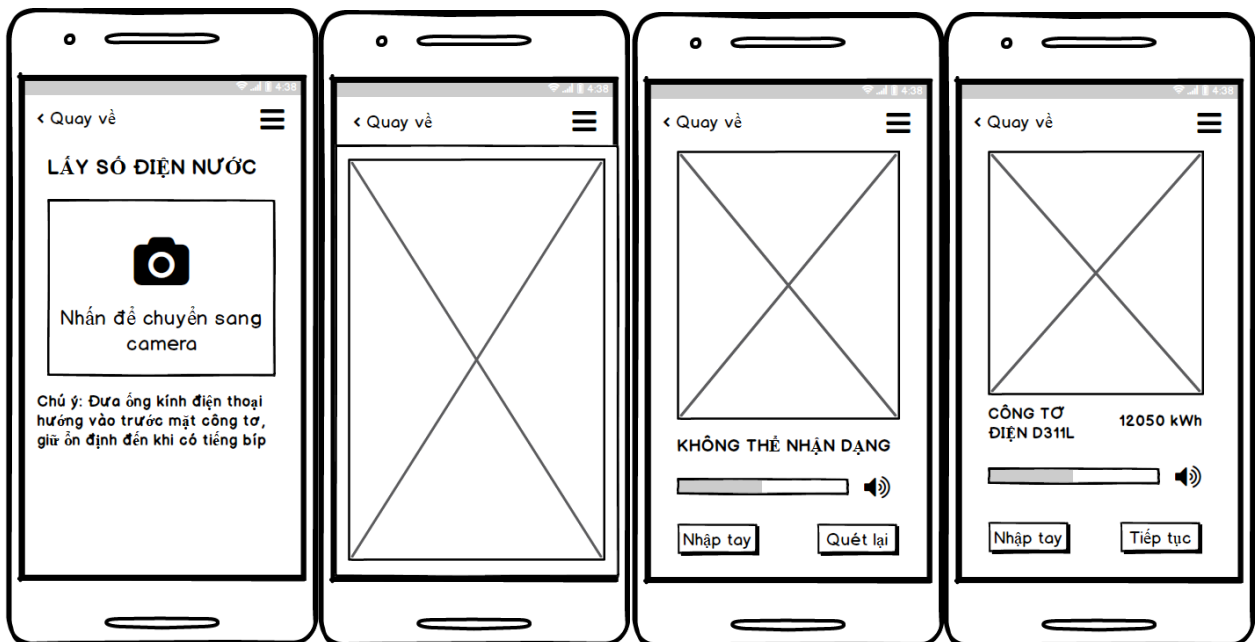
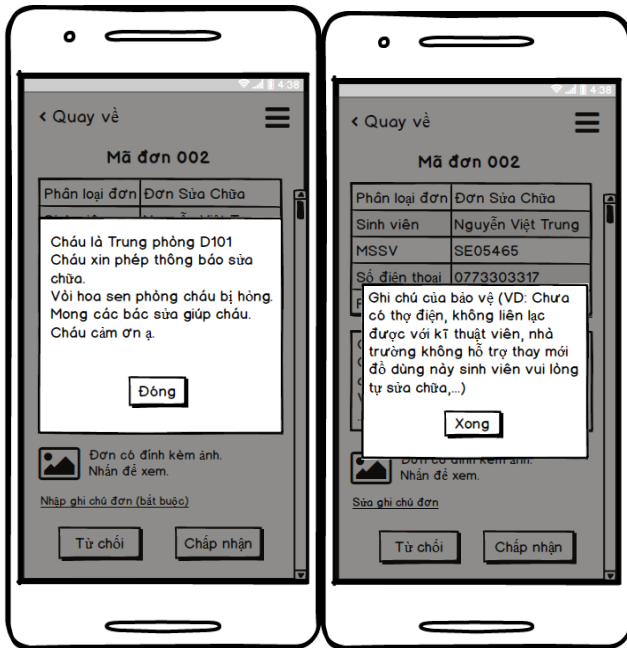


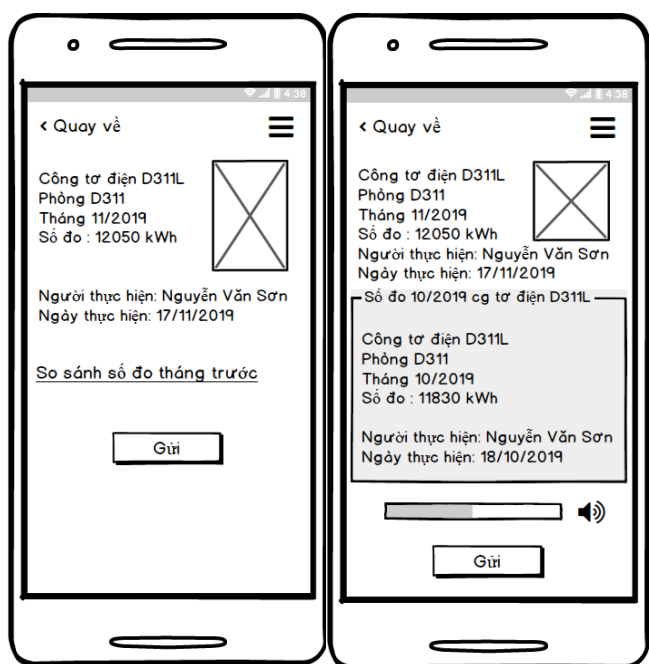
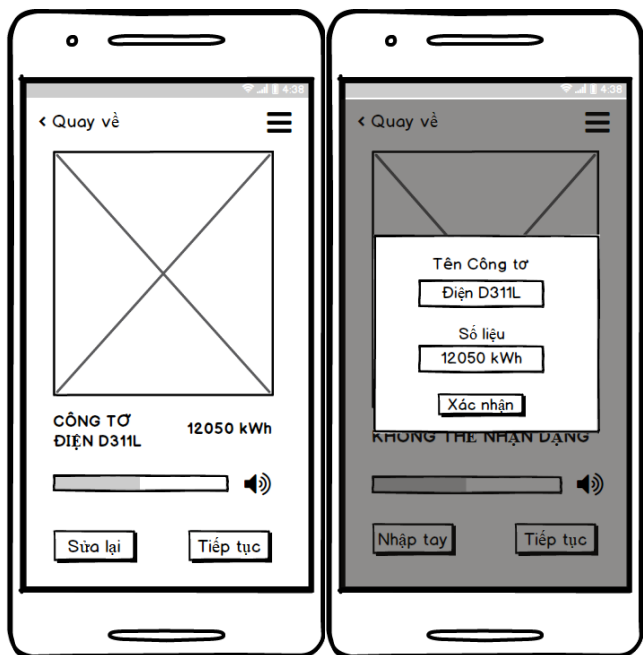
3.3.1.2.Guard

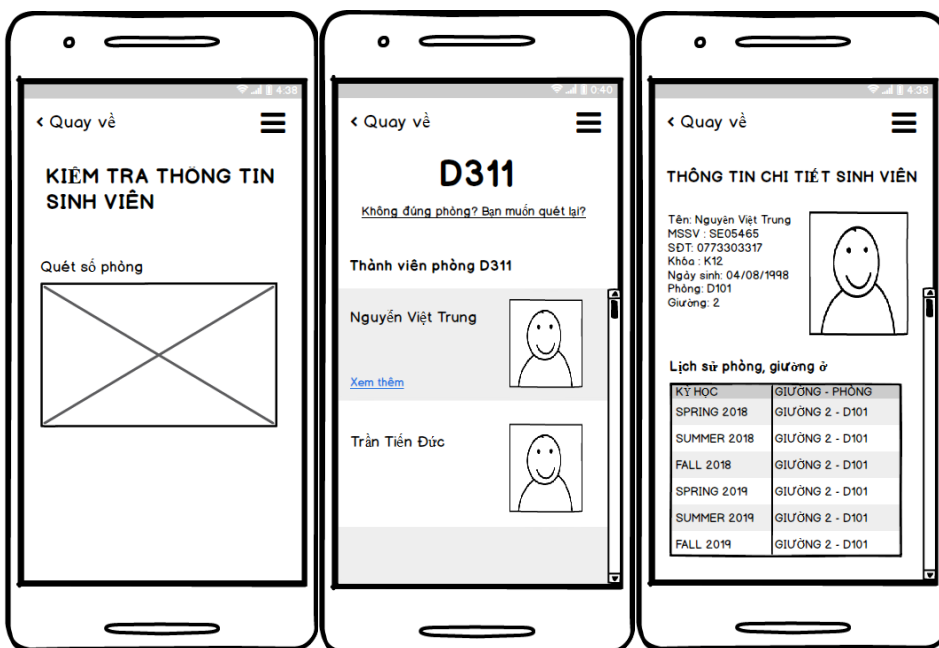
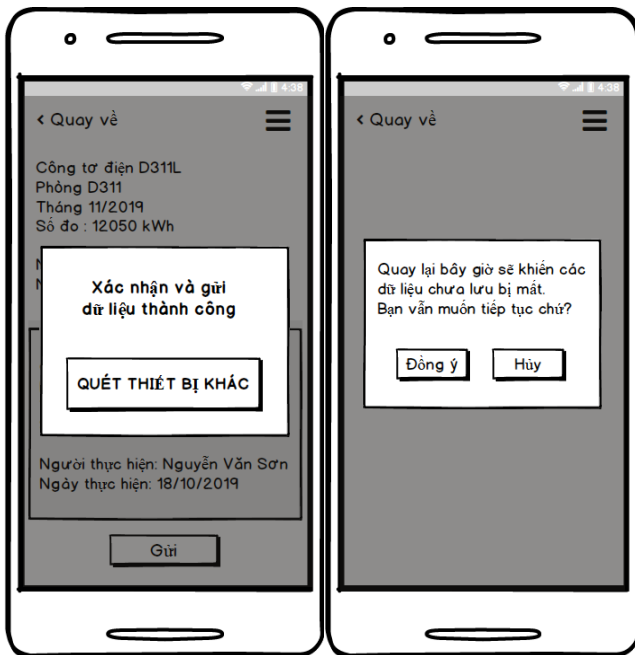












3.3.2.Second Prototype Test

Using the second balsamiq prototype, we test 5 students. Thanks to their warming contributions, we have caught the pros and cons existing in our project core and have gained better UX for the following phase.

3.3.2.1.Testing methodology overview

To perform the first usability test, we used the prototype created on Balsamiq with the clickable button and the basic switching between screens to help users feel like they are using a real application.

Supervise the tester and ask them questions after they finish using the app:
Specify the tasks that participants need to perform. We observe them, the way they interact with the app give us much UX information.

We should let participants use the app themselves, gain their own experience

3.3.2.2.Questions to ask

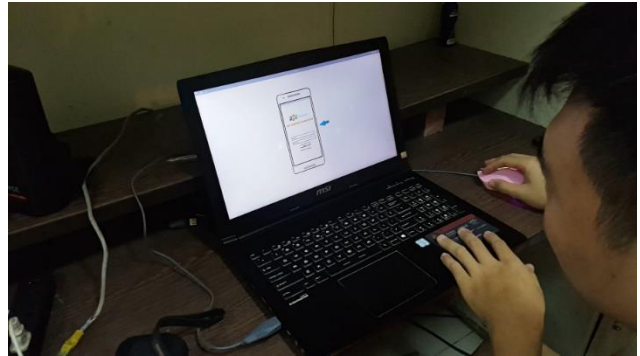
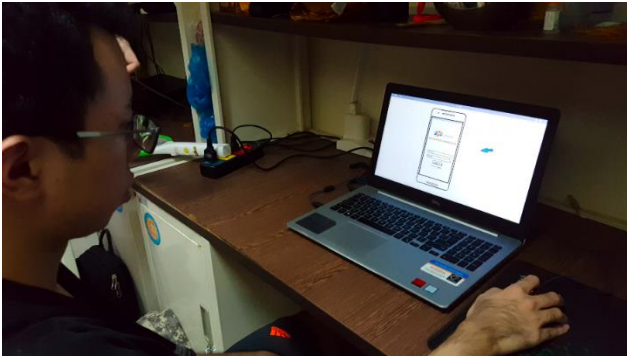
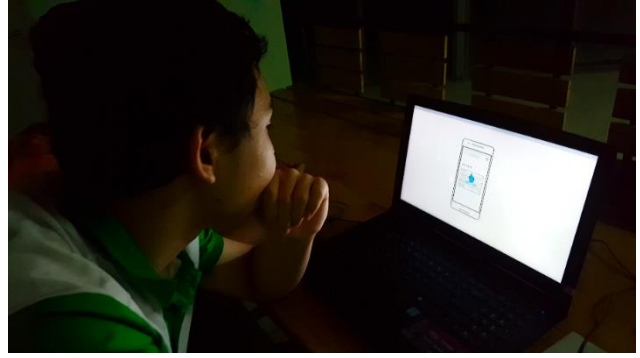
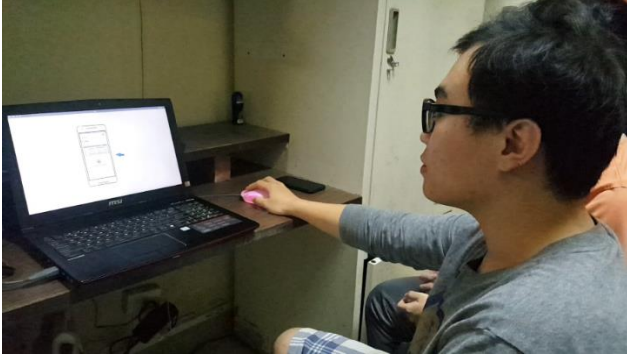
- Do they understand and get accustomed to the app fast or slow ? Or cannot understand?
- Give the task and ask them to do it themselves.
- Can they finish all? Without any errors or delay?
- Can they easily find all navigation among all functions?
- How is the connection between each main function? How do the tester feel when using the app?
- Is any design pattern that causes dissatisfaction?
- This function is okay? Easy to approach ?
- How is your feeling? Any suggestions and comments?
- Any impressions? Is there any function that makes you really interested?

3.3.2.3.Testers' Information

Name	General Information	Overview Characteristics
Trần Đức Trung	22 yo, SE Student	Lazy, Unsociable, Untalkative, Game Addicts
Lê Hoàng Giang	20, SE Student	Sociable, Sporty, Energetic
Bùi Anh Tú	21 yo, SE Student	Energetic, Sociable, Studious, Intelligent, Generous, Kind
Nguyễn Quang Trường	21 yo, SE Student	Sociable, Intelligent, Game Addict, Caring, Generous
Trần Ngọc Hưng	19 yo, SE Student	Studious, Game addict, Unsociable, Untalkative

Total testing screen of second balsamiq prototype (for student only: **43 Screens**

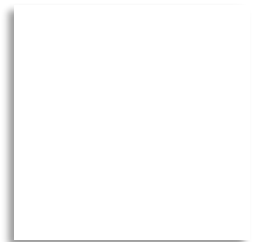
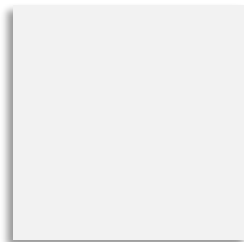
3.3.2.4.Results and Conclusions



QUESTIONS THAT TO BE ANSWERED	CONCLUSION ANSWERS AFTER TESTING
Do the testers like Fire Alert on app?	Yes, everyone show deep interest in this function, some tester like Trường and Hung are eager to ask further about its technology and Trường also offer to code for this idea.
Can everyone approach the app function and navigation easily ?	Yes, absolutely smooth. 4/5 of them say the app is easy and simple to get along.
Is everything all seems to be fine?	Not really, there maybe some additional suggestions and also fix some small features.
All button's signs and words are working well right? No misuse ?	Yes they are. Not a single misuse. All test can finish all required task on the first attempt.
What are the small changes that they advise ? What are the further feedbacks?	-Trường want more photos able to be uploaded in maintenance form. -Trường love top-up online feature -Hung want the alert pop up show people around that are going to help you. -Giang want to know if the new bed you book has anyone book at the same time with you or earlier than you a little bit -Tú want the omit the request check, just keep the input text box to send immediately -Tú want to create a new form instantly, no need to wait text box open after having done chosen the form type. -Tú show enthusiastic excitement about the Fire Alert on App feature -Trung show great support for the app -Trường also like the fire alert on app -Trường suggests that we should let user to fix or delete a form if it's still at unseen status.
How is the testers' emotion and feelings? What are their reactions?	-Trường and Tú are excited, 2 of them tend to discover more about the app and ask for more about the idea. - Hung are eager to help. -Trung and Giang are neutral.

3.4. User Interface Design

3.4.1.Moodboard



3.4.2.Style Guide

3.4.2.1.Color Palette

Main Colors



#F27123
Primary

#595959
Secondary

Background Colors



#F5F5F5

#FFFFFF

Additional Colors



#6EBD52

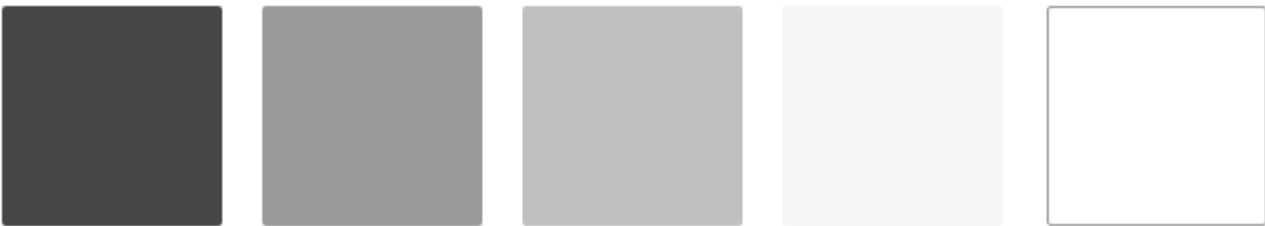
#EF2D38

#51B748

#BFBFBF

#FFFFFF

System Colors



#464646

#999999

#BFBFBF

#F5F5F5

#FFFFFF

3.4.2.2. Typography

Primary Font Family - Roboto

Weights:

Thin	Medium
<i>Thin Italic</i>	<i>Medium Italic</i>
Light	Bold
Condensed Light	Condensed Bold
<i>Light Italic</i>	<i>Bold Italic</i>
<i>Condensed Light Italic</i>	<i>Condensed Bold Italic</i>
Condensed	Black
<i>Italic</i>	<i>Black Italic</i>
<i>Condensed Italic</i>	

Characters:

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890~!@#\$%^&*()-_+=[]{};':"<>/\?|

Headline Bold 01

Font size: 20px - Font weight: Bold

Headline Bold 02

Font size: 15px - Font weight: Bold

Headline Bold 03

Font size: 12px - Font weight: Bold

Headline Bold 04

Font size: 10px - Font weight: Bold

Headline Regular 01

Font size: 20px - Font weight: Regular

Headline Regular 02

Font size: 15px - Font weight: Regular

Headline Regular 03

Font size: 12px - Font weight: Regular

Headline Regular 04

Font size: 10px - Font weight: Regular

Paragraph

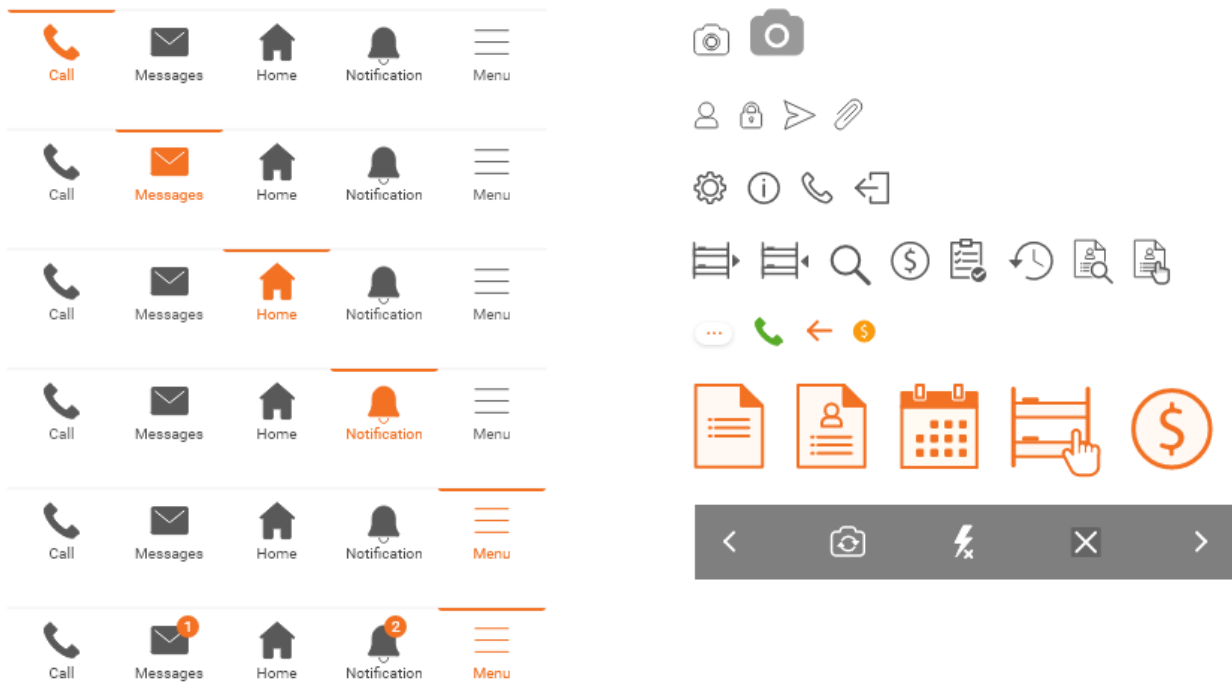
This is a paragraph using Roboto Regular at 15px, with a 18px Line Spacing in the colour #464646. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Note

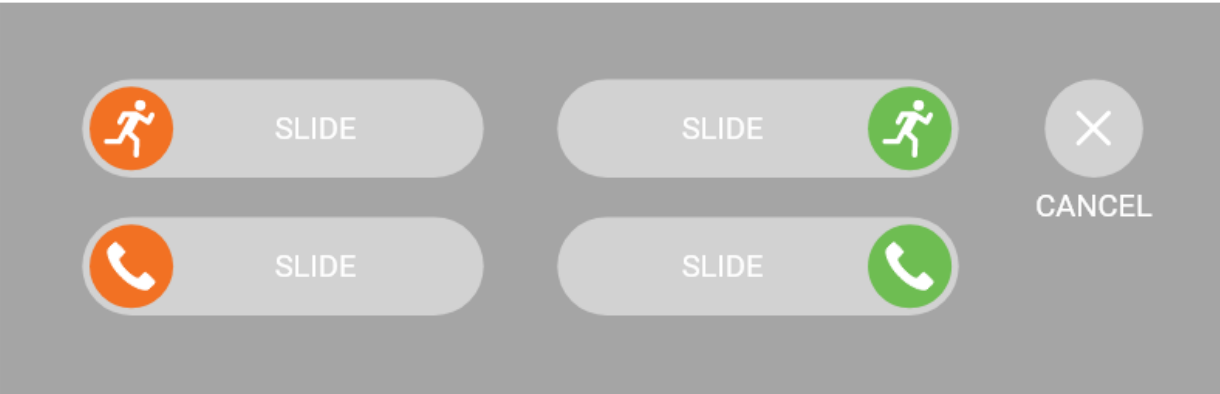
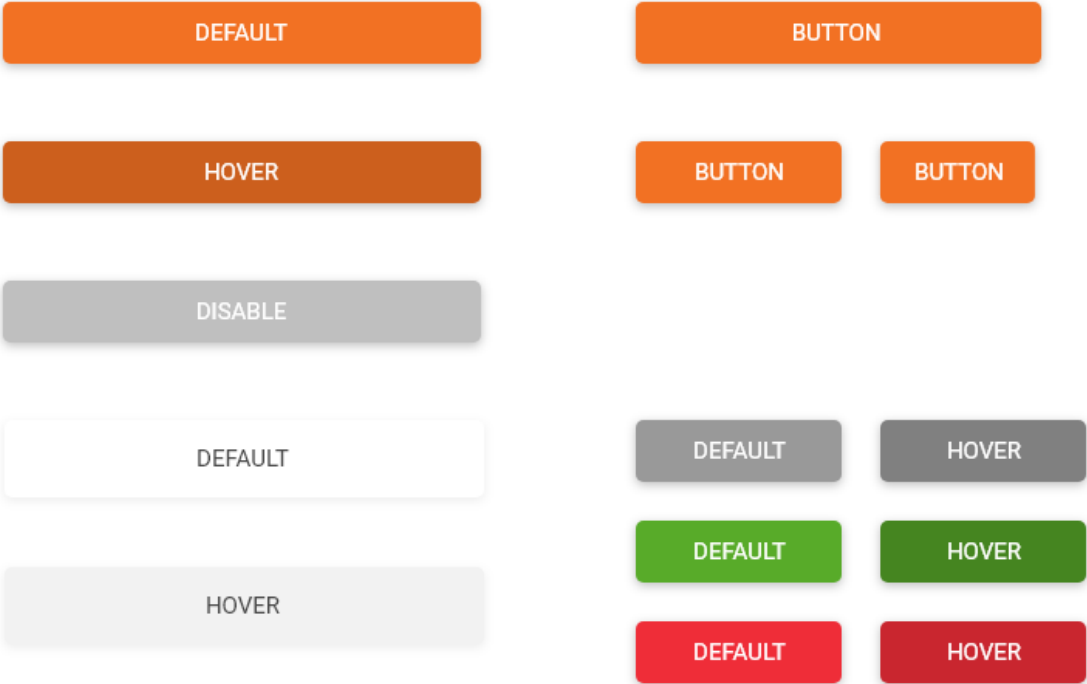
*Lorem Ipsum is simply dummy text of the printing and typesetting industry.

*Lorem Ipsum is simply dummy text of the printing and typesetting industry.

3.4.2.3.Icon



3.4.2.4.Button



3.4.2.5.Fields

Dropdown

Dropdown ▾

Action one (hover)

Action two

Value



Line



Label

- ☒ Label (Selected)
- ☐ Label
- ☒ Label (Checked box)
- ☐ Label

Sound On

Sound Off

Active

Area

Purpose...

Table

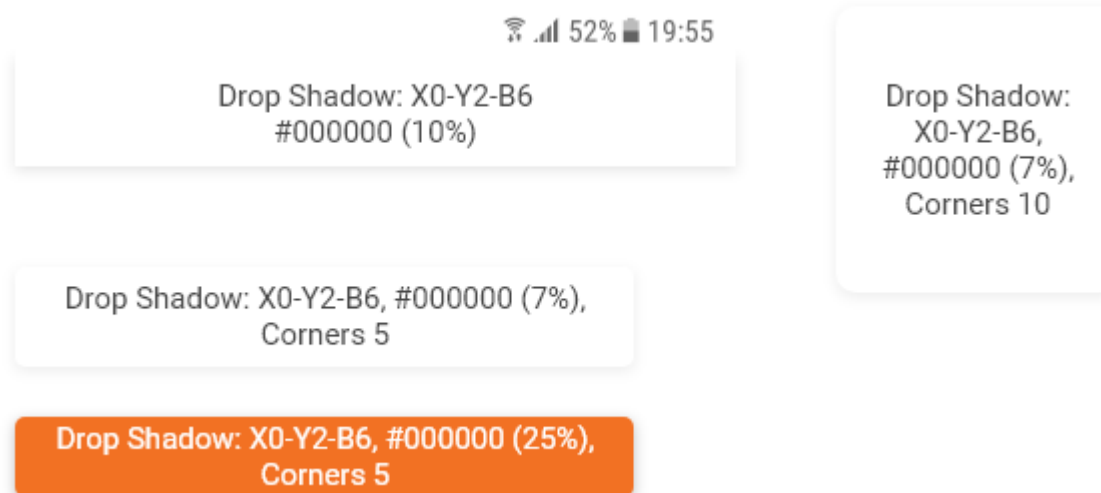
Abc	Abc	Abc	Abc	Detail
Abc	Abc	Abc	Abc	...
Abc	Abc	Abc	Abc	...
Abc	Abc	Abc	Abc	...
Abc	Abc	Abc	Abc	...

3.4.2.6.Grid

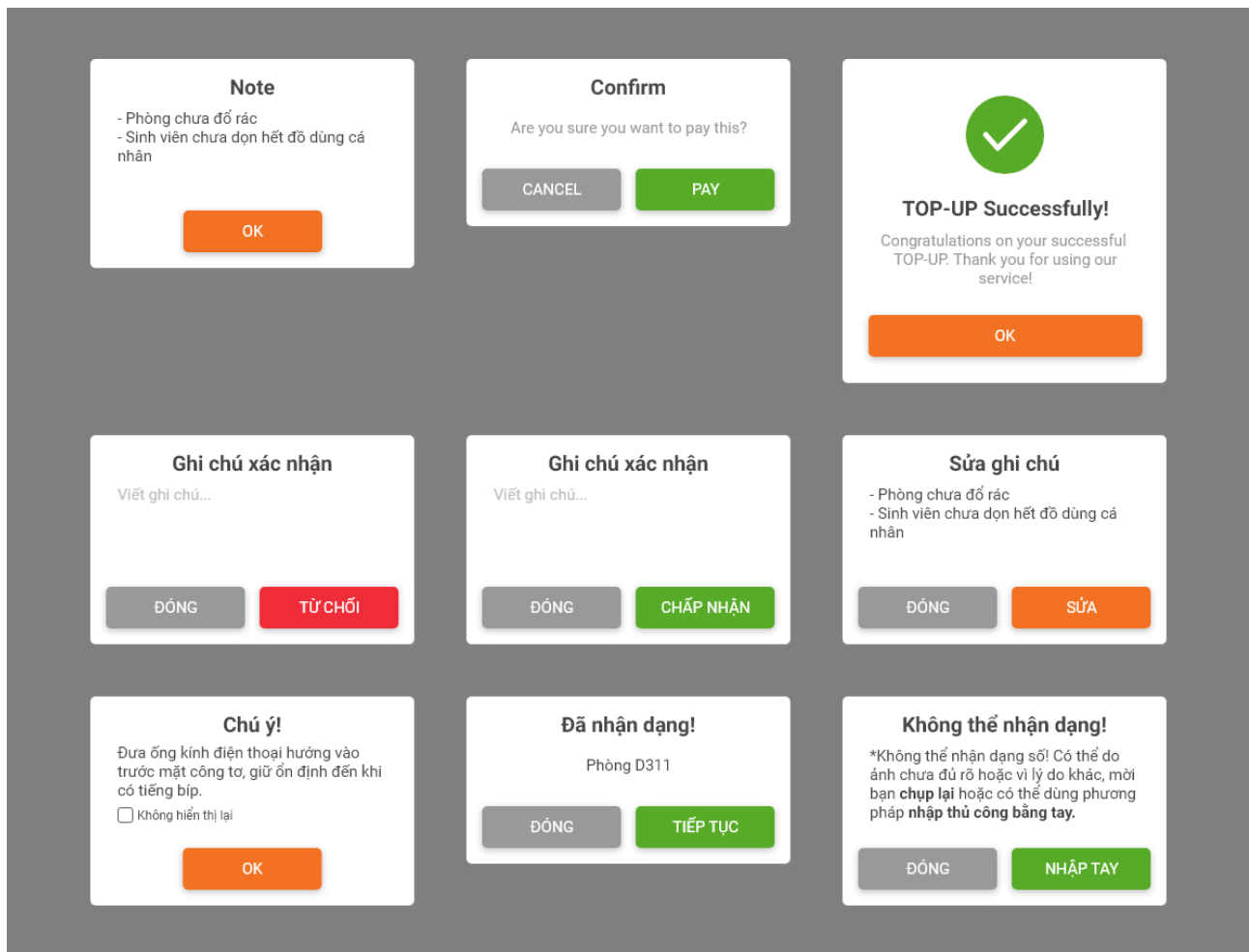
Linked left/right margins: 25px



3.4.2.7.Others



3.4.2.8.Pop-up



3.4.3. Logo



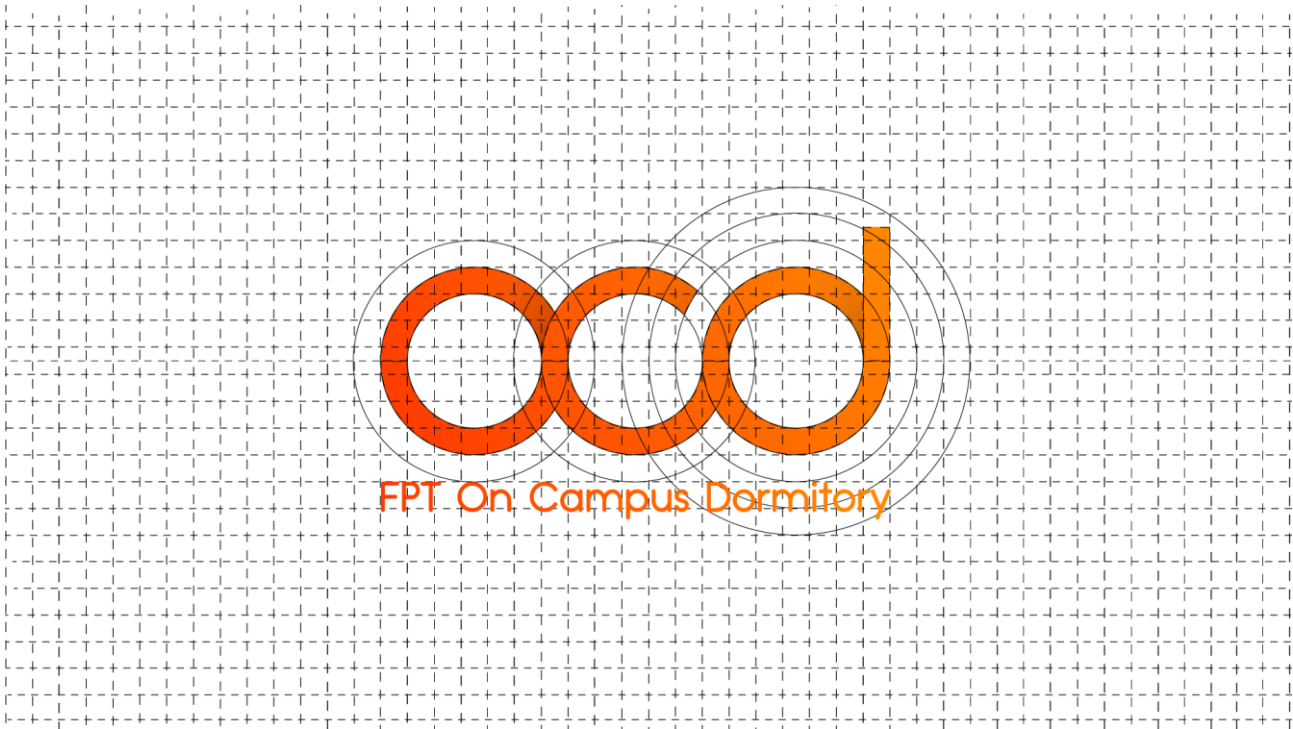
FPT On Campus Dormitory



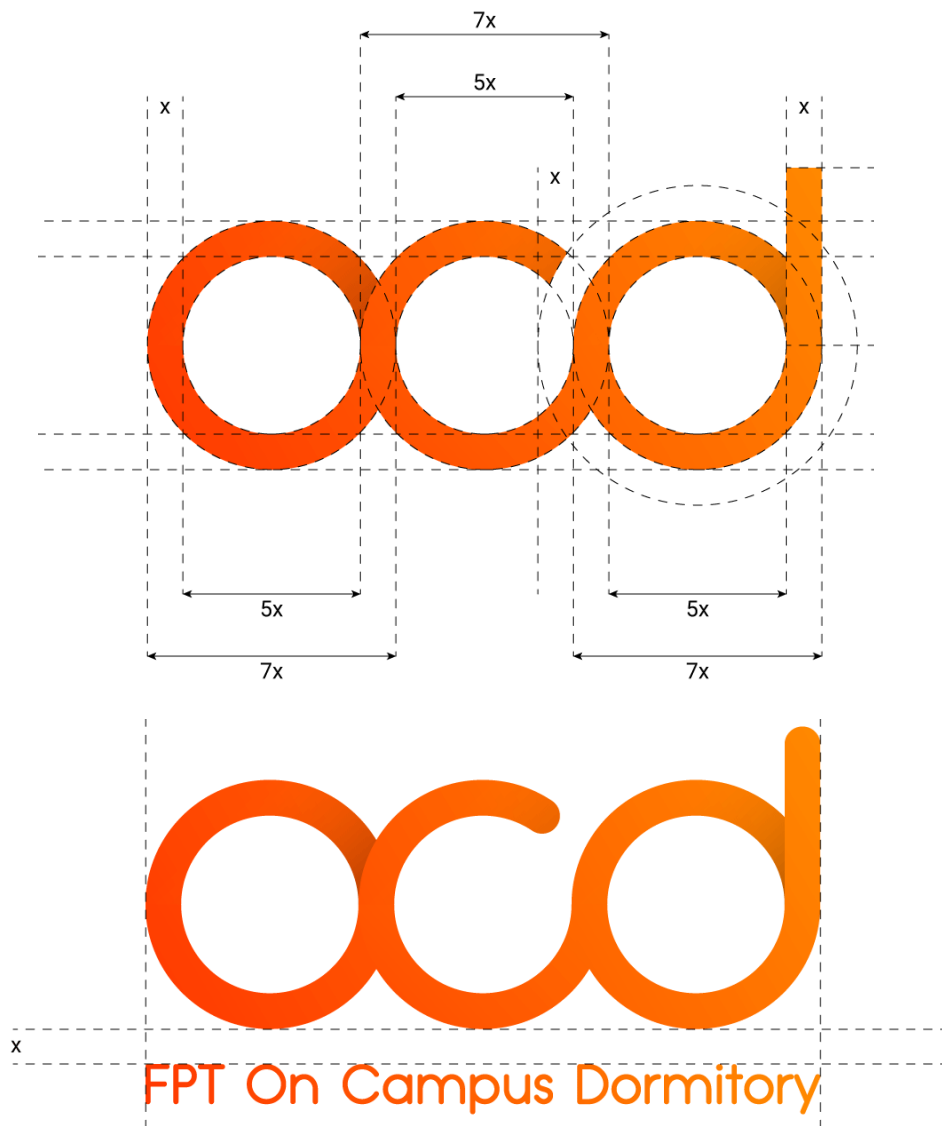
FONT: TYPO GROTESK ROUNDED

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
!@#\$%^&*()

Logo Typo & Logo Color



Logo in Grid



Logo Size and Distance Rule



FPT On Campus Dormitory



Logo Variations

3.4.4.First Interface Design

3.4.4.1.Student



ON CAMPUS DORMITORY

Username

Password

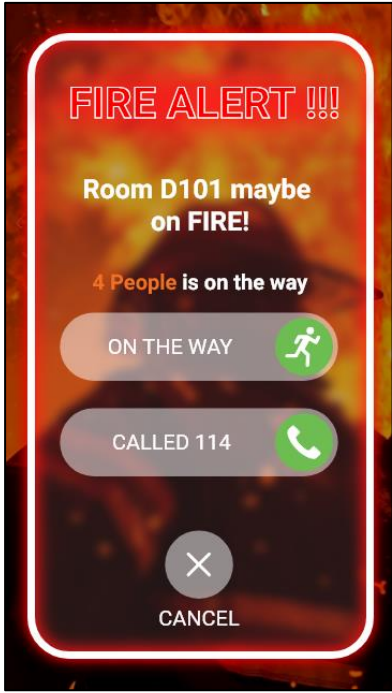
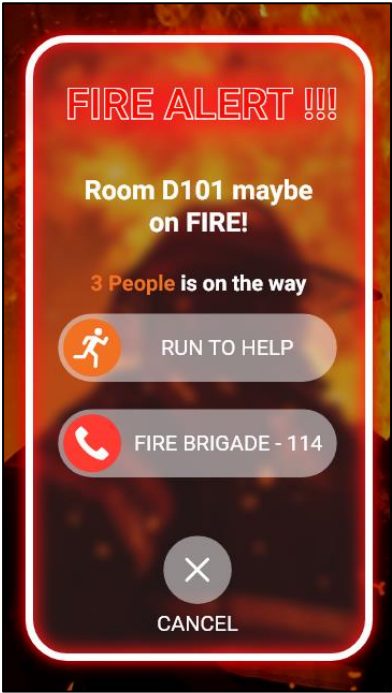
Remember me

LOGIN

Or

Login with Google

Tiếng Việt | English



STUDENT

Forms

Monthly E/W Usage

Bed Booking

Payment

Contact

Thông tin liên hệ

Thông Báo

Hệ thống đang trong quá trình thử nghiệm, mọi thắc mắc xin liên hệ huongCT12@fe.edu.vn! Hoặc gặp chị Vân ở phòng dịch vụ sinh viên, Xin trân trọng cảm ơn!

Đội dự án

About

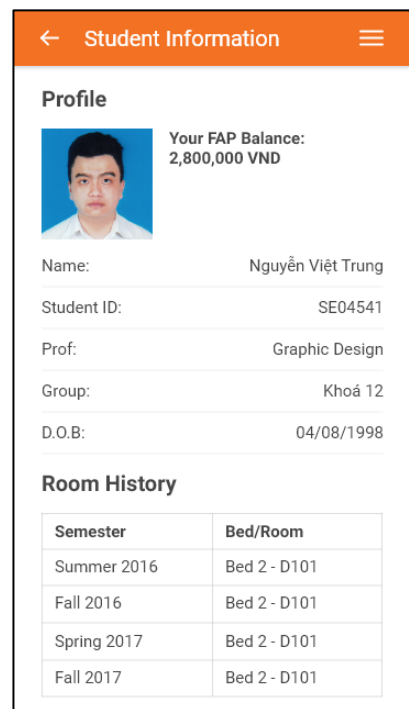
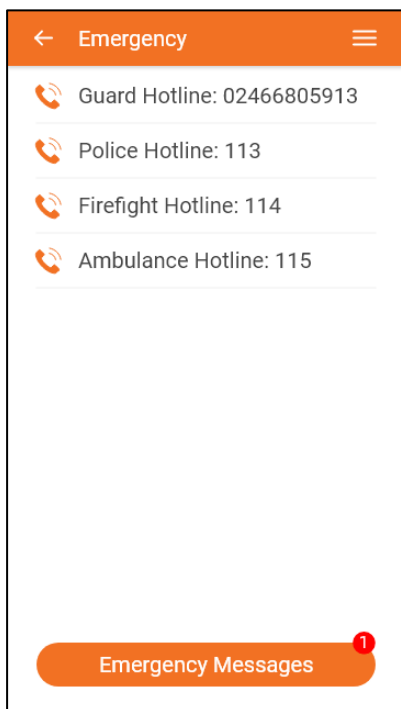
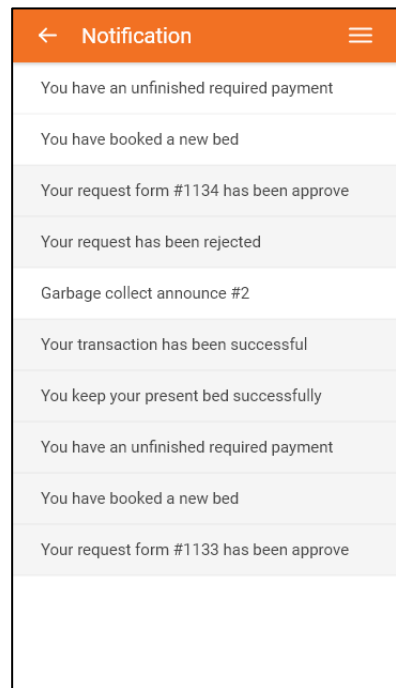
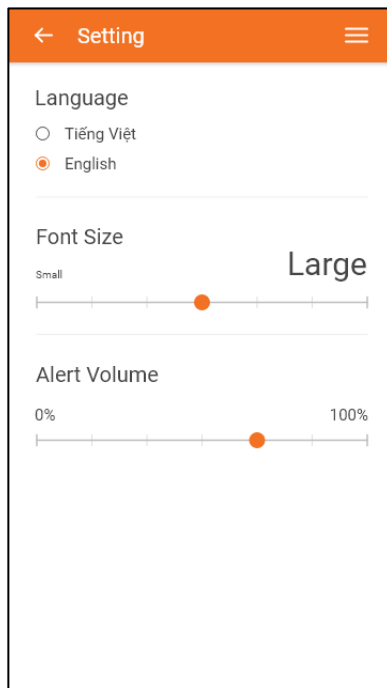
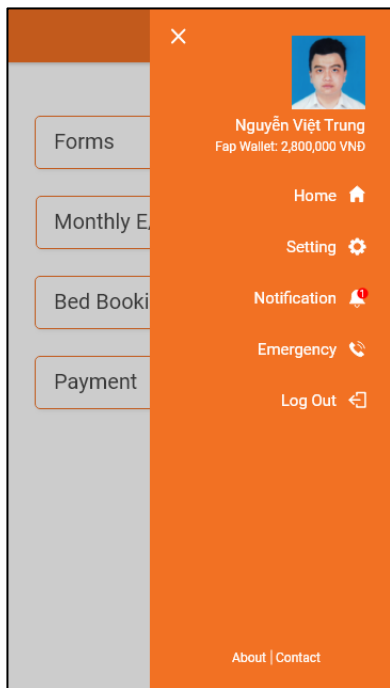
Giới thiệu phần mềm

Giới thiệu phần mềm quản lý ký túc xá OCD. Phần mềm này là sản phẩm của đồ án tốt nghiệp, do những sinh viên sau đây thực hiện:

1. Nguyễn Việt Trung, mã số sinh viên SE05465, sinh viên khóa 12 ngành GD;
2. Trần Tiến Đức, mã số sinh viên SE04541, sinh viên khóa 11 ngành GD;
Giáo Viên hướng dẫn: Thầy Bùi Văn Phát.

Chúng tôi trân trọng cảm ơn đóng góp của Thầy và các em trong nhóm dự án, mong có thêm những đóng góp và ứng dụng mới từ tất cả các em sinh viên đã và đang theo học tại Đại Học FPT. Chúc tất cả các em học tập và công tác tốt!

Trân trọng
Phòng Hành Chính Tổng Hợp



Forms

Form Status

N	Form Name	Status	Status
1	Check out	Processing	
2	Check out	Rejected	Detail
3	Maintenance	Approved	
4	Maintenance	Approved	

Create A New Form

Forms

N	Form Name	Status	Status
1	Check out	Processing	
2	Check out	Rejected	Detail

Note

- Phòng chưa đổ rác
- Sinh viên chưa dọn hết đồ dùng cá nhân

OK

Create A New Form

Forms

Forms type

Purpose...

Send

*Note: You must finish all payment to check out

Forms

Form Type

Check out

Maintenance

Send

*Note: You must finish all payment to check out

Forms

Check out

Purpose...

Note

Your form has been submitted

OK

← Forms

Maintenance

Purpose...



*Note: Take some photo of your broken objects

Send



Forms

Maintenance

Purpose...



Add +

Send

Forms

Maintenance

Purpose...

Note
Your form has been submitted

OK

Send

Monthly E/W Usage

Summer 2019

Room	Type	Meter	Over Usage	Detail
D101	Eltc	Left	10250 kWh	View

Over usage payment (Electricity):
194,000.00 vnd

Over usage payment (Water):
0.00 vnd

Request Recheck

Purpose...

Send

Monthly E/W Usage

Summer 2019

Detail

Electric Meter: D311L

Room: D311

Month: 11/2019

Amount: 12050 kWh

Guard

Name: Nguyễn Văn Sơn

Date: 17/11/2019



OK



Monthly E/W Usage

Summer 2019

Room	Type	Meter	Over Usage	Detail
D101	Eltc	Left	10250 kWh	View

Note
Your request has been submitted

OK

Request Recheck
Purpose...

Send

Monthly E/W Usage

Summer 2019

Room	Type	Meter	Over Usage	Detail
D101	Eltc	Left	10250 kWh	View

Over usage payment (Electricity):
194,000.00 vnd

Over usage payment (Water):
0.00 vnd

Your overusage this semester has been under recheck.

Bed Booking

Book A New Bed

Keep Present Bed

Keep Present Bed

Bed: Bed 1 - A101

Price: 700,000 VNĐ/Month

Your FAP Balance: 3,000,000 VNĐ

Total transaction: **2,800,000 VNĐ**

Balance after payment: 200,000 VNĐ

PAY

Keep Present Bed

Bed: Bed 1 - A101

Price: 700,000 VNĐ/Month

Note
Paid Successfully !

OK

PAY

Book A New Bed

Choose Your New Bed

Dom D

Floor 1

D101 (Free bed: 1, 2, 6)

Bed 2

BOOK

Book A New Bed

Book A New Bed

Bed:Bed 2 - D101

Price:700,000 VNĐ/Month

Your FAP Balance:3,000,000 VNĐ

Total transaction:**2,800,000 VNĐ**

Balance after payment:200,000 VNĐ

PAY

Book A New Bed

Book A New Bed

Bed:Bed 2 - D101

Price:700,000 VNĐ/Month

Your FAP Balance:3,000,000 VNĐ

Total transaction:**2,800,000 VNĐ**

Balance after payment:200,000 VNĐ

Note

Are you sure?

YES

CANCEL

PAY

Book A New Bed

Book A New Bed

Bed:Bed 2 - D101

Price:700,000 VNĐ/Month

Your FAP Balance:3,000,000 VNĐ

Total transaction:**2,800,000 VNĐ**

Balance after payment:200,000 VNĐ

Note

Paid Successfully !

OK

PAY

←

Payment

☰

TOP-UP Your FAP Wallet

Required Payment

Payment History

←

TOP-UP Your FAP Wallet

☰

Choose Your Payment Method

☐ ViettelPay Wallet



☒ Debit Card



☐ Paypal



PROCEED

←

Debit Card

☰

Invoice



Pay securely using your credit card

Card Number:

XXXX-XXXX-XXXX-XXXX

Name of Cardholder:

Text here...

Expiry Date:

.../...

CVV:

...

Money Amount:

...

*Your personal data will be used to process your order, support your experience throughout this website and for other purposes described in our privacy policy.

PROCEED

←

Debit Card

☰

Invoice



Pay securely using your credit card

Card Number:

XXXX-XXXX-XXXX-XXXX

Name of Cardholder:

Text here...

Note

Are you sure?

YES

CANCEL

PROCEED

←

TOP-UP Your FAP Wallet

☰

Choose Your Payment Method

☐ ViettelPay Wallet



☒ Debit Card



Note

TOP-UP Successfully !

OK

PROCEED

←

Required Payment

☰

Required Payment

N	Type	Fee	Action
1	Overusage (5 - 8/2019)	180,000 VNĐ	Pay
2	Overdue	20,000 VNĐ	Pay
3	Compensation	100,000 VNĐ	Pay
4	Roombook Debt	50,000 VNĐ	Pay

Total required payment:

1.370.000VNĐ

PAY ALL

←

Required Payment

☰

Overusage (5 - 8/2019)

Overusage cost:

180,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Total transaction:

180,000 VNĐ

Balance after payment:

200,000 VNĐ

PAY

←

Required Payment

☰

Overusage (5 - 8/2019)

Overusage cost:

180,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Note

Are you sure?

YES

CANCEL

PAY

←

Required Payment

☰

Overusage (5 - 8/2019)

Overusage cost:

180,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Note

Paid Successfully !

OK

PAY

←

Required Payment

☰

Total Required Payment

Required payment:

1,370,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Total transaction:

1,370,000 VNĐ

Balance after payment:

1,630,000 VNĐ

PAY

←

Required Payment

☰

Total Required Payment

Required payment:

1,370,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Note

Are you sure?

YES

CANCEL

PAY

←

Required Payment

☰

Total Required Payment

Required payment:

1,370,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Note

Paid Successfully !

OK

PAY

←

Payment History

☰

Payment History

Date	Cost	Detail
21/10/2019	+ 3,000,000 VNĐ	View
25/10/2019	- 2,800,000 VNĐ	View
12/11/2019	- 50,000 VNĐ	View

←

Payment History

☰

Detail

Student ID:

SE04541

Cost:

+ 3,000,000

Date:

21/10/2019

Time:

12:02 - PM

Description:

Nap tien

3.4.4.2.Guard


ON CAMPUS DORMITORY

 Tài khoản

 Mật khẩu

☐ Nhớ mật khẩu

ĐĂNG NHẬP

Hoặc

Đăng nhập với Google

Tiếng Việt | English

BẢO VỆ

GIẢI QUYẾT ĐƠN TỪ

LẤY SỐ ĐIỆN NƯỚC

THÔNG TIN SINH VIÊN

×


Nguyễn Văn Sơn
sonnv22@fe.edu.vn

Trang chủ

Cài đặt

Thông báo

Điện thoại khẩn cấp

Đăng xuất

About | Contact

GIẢI QUYẾT ĐƠN TỪ

LẤY SỐ ĐIỆN NƯỚC

THÔNG TIN SINH VIÊN

←

GIỚI THIỆU

≡

Giới thiệu phần mềm

Giới thiệu phần mềm quản lý ký túc xá OCD.
Phần mềm này là sản phẩm của đồ án tốt nghiệp, do những sinh viên sau đây thực hiện:

1. Nguyễn Việt Trung, mã số sinh viên SE05465, sinh viên khóa 12 ngành GD;
2. Trần Tiến Đức, mã số sinh viên SE04541, sinh viên khóa 11 ngành GD;
Giáo Viên hướng dẫn: Thầy Bùi Văn Phát.

Chúng tôi trân trọng cảm ơn đóng góp của Thầy và các em trong nhóm dự án, mong có thêm những đóng góp và ứng dụng mới từ tất cả cá em sinh viên đã và đang theo học tại Đại Học FPT. Chúc tất cả các em học tập và công tác tốt!

Trân trọng
Phòng Hành Chính Tổng Hợp

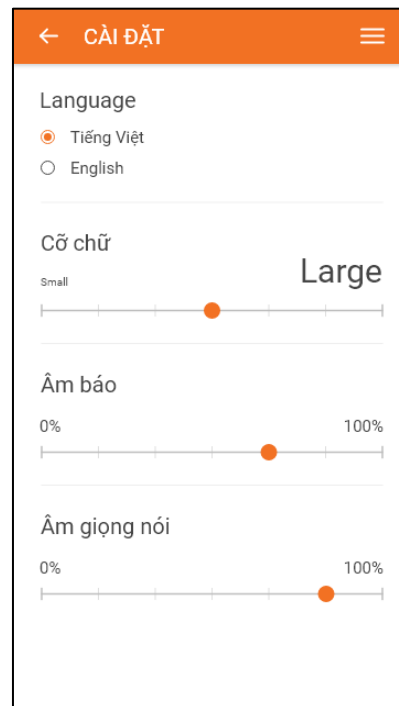
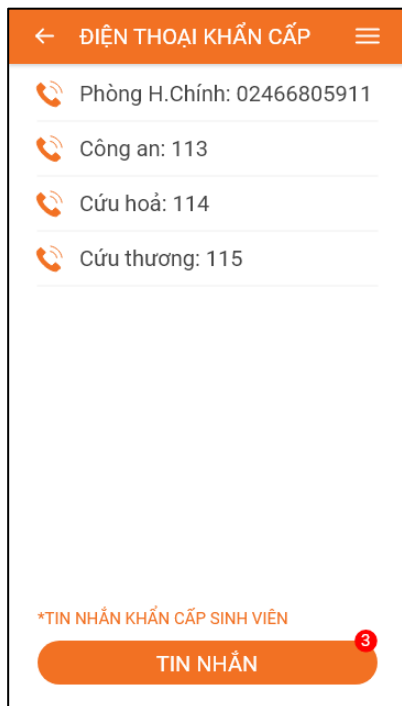
←

LIÊN HỆ

≡

Thông tin liên hệ

Thông Báo
Hệ thống đang trong quá trình thử nghiệm, mọi thắc mắc xin liên hệ huongCT12@fe.edu.vn! Hoặc gặp chị Vân ở phòng dịch vụ sinh viên,
Xin trân trọng cảm ơn!
Đội dự án



<
GIẢI QUYẾT ĐƠN TỪ

Danh sách đơn

TT	Tên đơn	Trạng thái
01	Check out	Chưa xem
02	Sửa chữa	Chưa xem
03	Sửa chữa	Chấp nhận
04	Check out	Đang xử lý
05	Check out	Từ chối
06	Sửa chữa	Chấp nhận
07	Check out	Chấp nhận
08	Check out	Từ chối
09	Sửa chữa	Chấp nhận

<
GIẢI QUYẾT ĐƠN TỪ

Đơn 001

Phân loại đơn:

Đơn check out

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Phòng:

D101

Số điện thoại:

0773303317

Nội dung

Em là Nguyễn Việt Trung

Em làm đơn này xin được làm thủ tục check out kí túc xá kì Spring 2020.

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

<
GIẢI QUYẾT ĐƠN TỪ

Đơn 001

Phân loại đơn:

Đơn check out

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

Đơn được chấp nhận.

CHẤP NHẬN

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

<
GIẢI QUYẾT ĐƠN TỪ

Đơn 001

Phân loại đơn:

Đơn check out

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

- Phòng chưa đổ rác

TỪ CHỐI

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

<
GIẢI QUYẾT ĐƠN TỪ

Đơn 001

Phân loại đơn:

Đơn check out

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Phòng:

D101

Số điện thoại:

0773303317

Nội dung

Em là Nguyễn Việt Trung

Em làm đơn này xin được làm thủ tục check out kí túc xá kì Spring 2020.

Xem thêm...

SỬA GHI CHÚ

<
GIẢI QUYẾT ĐƠN TỪ

Đơn 001

Phân loại đơn:

Đơn check out

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

- Phòng chưa đổ rác

- Sinh viên chưa dọn hết đồ dùng cá nhân

SỬA

ĐÓNG

Xem thêm...

SỬA GHI CHÚ

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Phòng:

D101

Số điện thoại:

0773303317

Nội dung

Cháu là Trung phòng D101

Cháu xin phép thông báo sửa chữa.

Tay nắm cửa phòng cháu bị gãy...

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Nội dung

Cháu là Trung phòng D101

Cháu xin phép thông báo sửa chữa.

Tay nắm cửa phòng cháu bị gãy. Bác cho người đến sửa giúp cháu với.

Cháu xin cảm ơn bác!

OK

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

Bác đã ghi nhận thông tin của cháu!

Bác sẽ cử người đến sửa trong thời gian sớm nhất.

CHẤP NHẬN

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

Nhà trường hiện đang chưa có đợt nhập thiết bị mới.

TỪ CHỐI

Xem thêm...

CHẤP NHẬN

TỪ CHỐI

Page 93 | OCD App

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Phòng:

D101

Số điện thoại:

0773303317

Nội dung

Cháu là Trung phòng D101

Cháu xin phép thông báo sửa chữa.

Tay nắm cửa phòng cháu bị gãy...

Xem thêm...

SỬA GHI CHÚ

←

GIẢI QUYẾT ĐƠN TỪ

☰

Đơn 002

Phân loại đơn:

Đơn sửa chữa

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận!

Bác đã ghi nhận thông tin của cháu!

Chiều nay sẽ có người qua sửa cho cháu nhé.

SỬA

ĐÓNG

Xem thêm...

SỬA GHI CHÚ

📷

⚡

✕

Chuyển Camera Trước/Sau

Bật/Tắt/Tự động đèn Flash

Tắt Camera (trở về trang chủ)

Chú ý!

Đưa ống kính điện thoại hướng vào trước mặt công tơ, giữ ổn định đến khi có tiếng bíp.

☐ Không hiển thị lại

OK

Nhập ảnh có sẵn trong máy

Nhấn nút này để chụp

Nhấn vào đây để Bật/Tắt loa

📷

📸

🔊

Loa/Bật

📷

⚡

✕

NG TƠ ĐIỆN 1 PHA 2 DÂY

3 2 1 7 6 2 kWh

CV140

Số SX: 12113304

220 V

20(80) A

50 Hz

vòng/kWh

27°C

Cấp 2

2012

Đặt tại Tổng công ty cổ phần Thiết bị điện Việt Nam

tu của :

QUÉT

CHỤP LẠI

📷

⚡

✕

NG TƠ ĐIỆN 1 PHA 2 DÂY

3 2 1 7 6 2 kWh

CV140

Số SX: 12113304

220 V

20(80) A

50 Hz

vòng/kWh

27°C

Cấp 2

2012

Đặt tại Tổng công ty cổ phần Thiết bị điện Việt Nam

tu của :

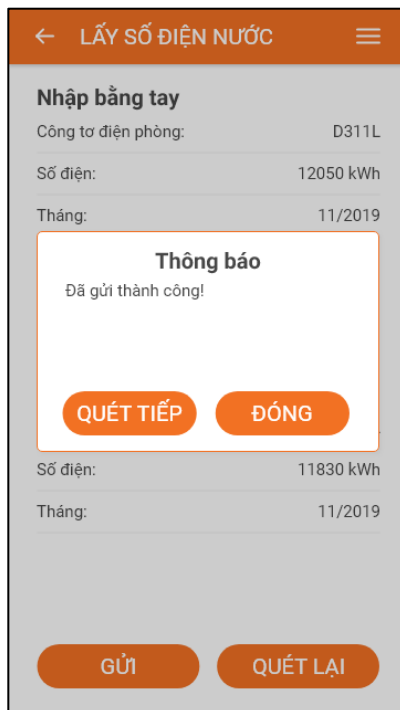
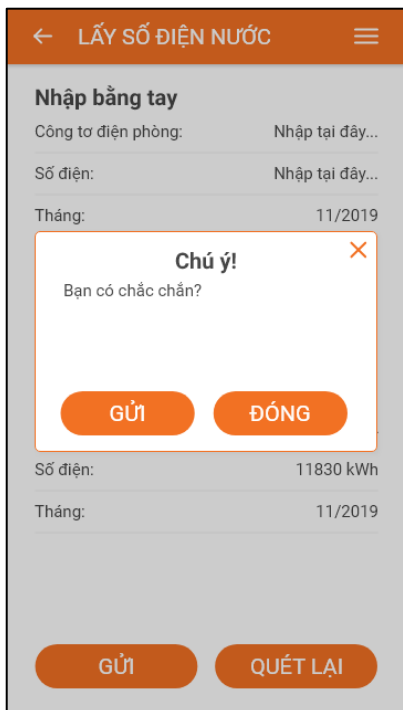
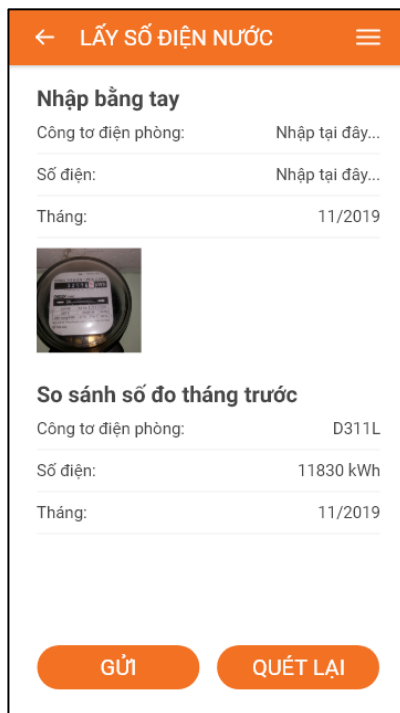
📷

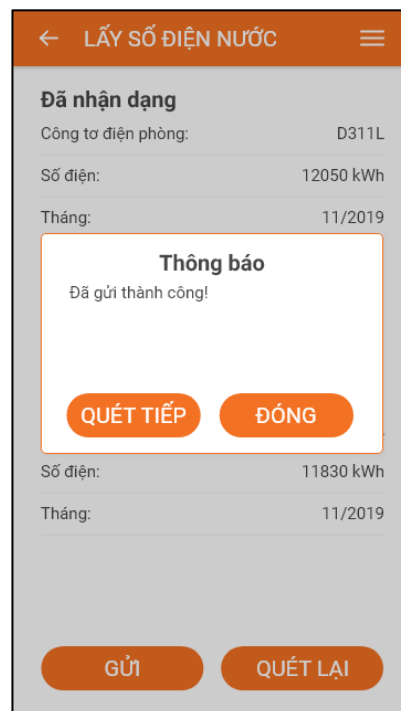
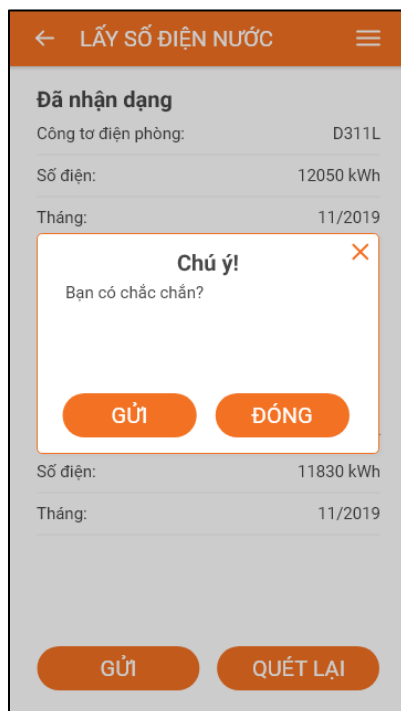
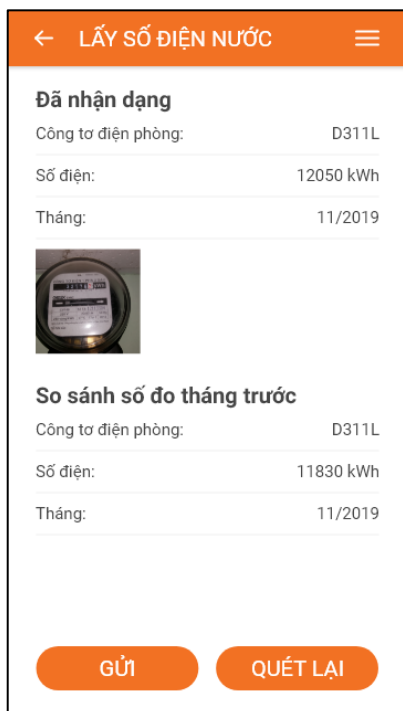
📸

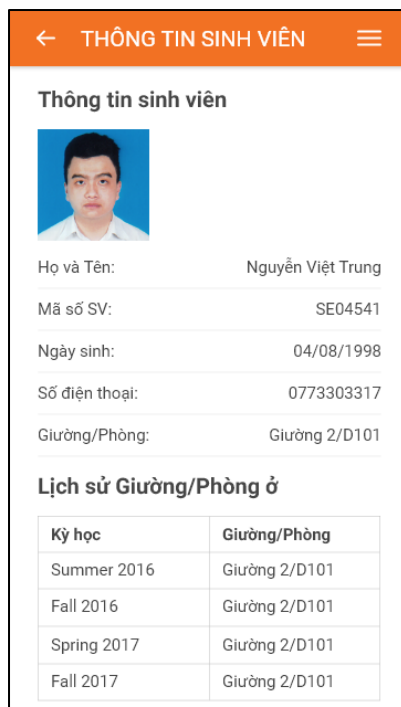
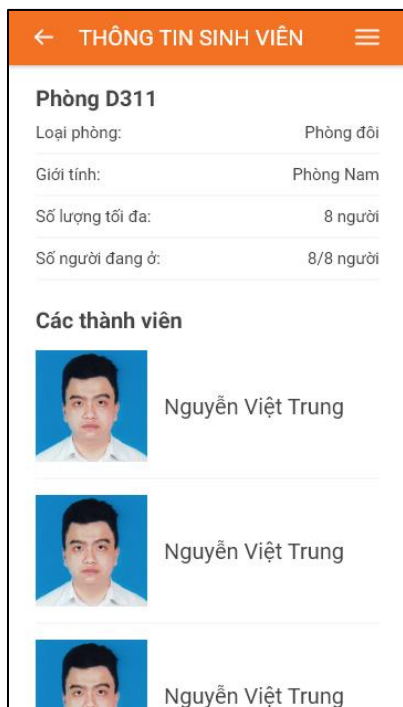
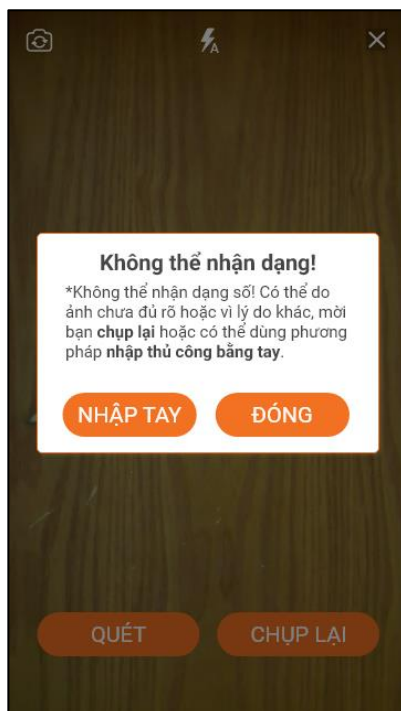
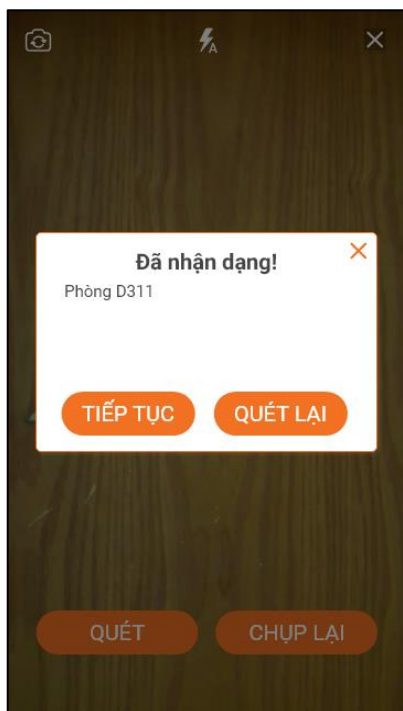
🔊

Loa/Bật

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Report No.4: **Design Finalization**

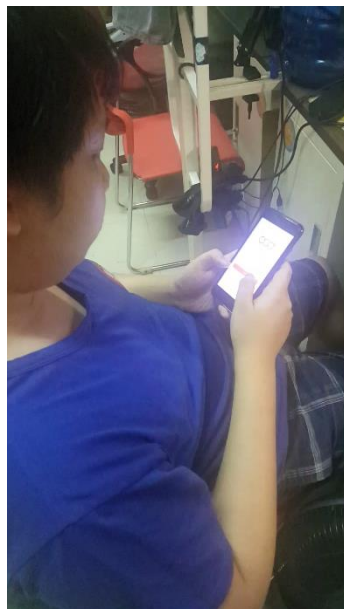
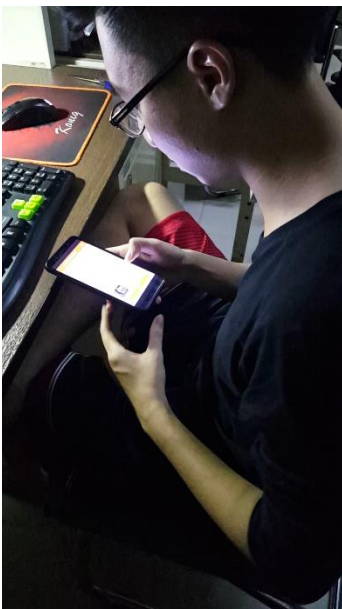
4.1.Design Overview

Based on what we have studied in user interface design, we want to bring a color that brings the feel of a simplicity, modernity, technology, advancement, energy and enthusiasm. And we choose orange. Choosing light background with grey and the remaining details in the dark grey - green - red. We use highlight by orange creates a motivating feeling and enthusiasm. Free style design going with classic and simple design optimize experience of both groups of users. We also adjusted the color and shadow box to make users more friendly-user and easy.

4.1.1.First UI Design Testers

3 Testers :

- Lê Dũng – 1997 – SE Student K11 – FPT University
- Hoài Nam – 1998 – SE Student K12 – FPT University
- A Guard – Leader of group working in afternoon shift – FPT University



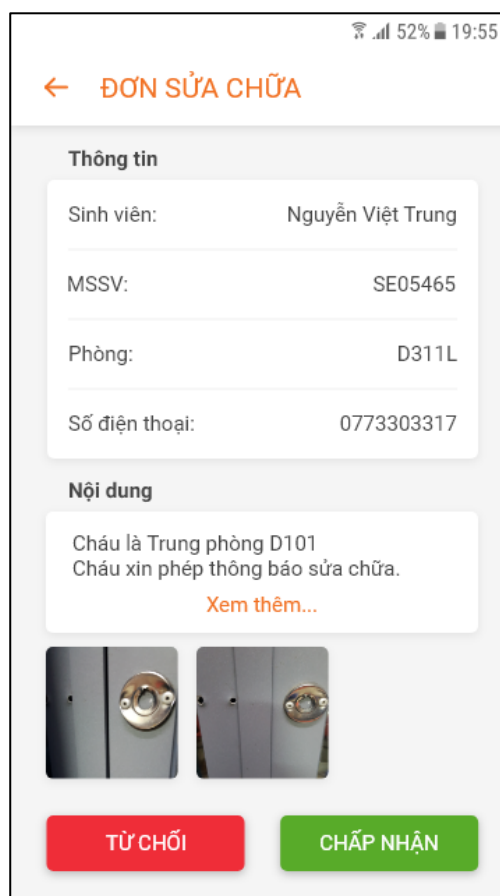
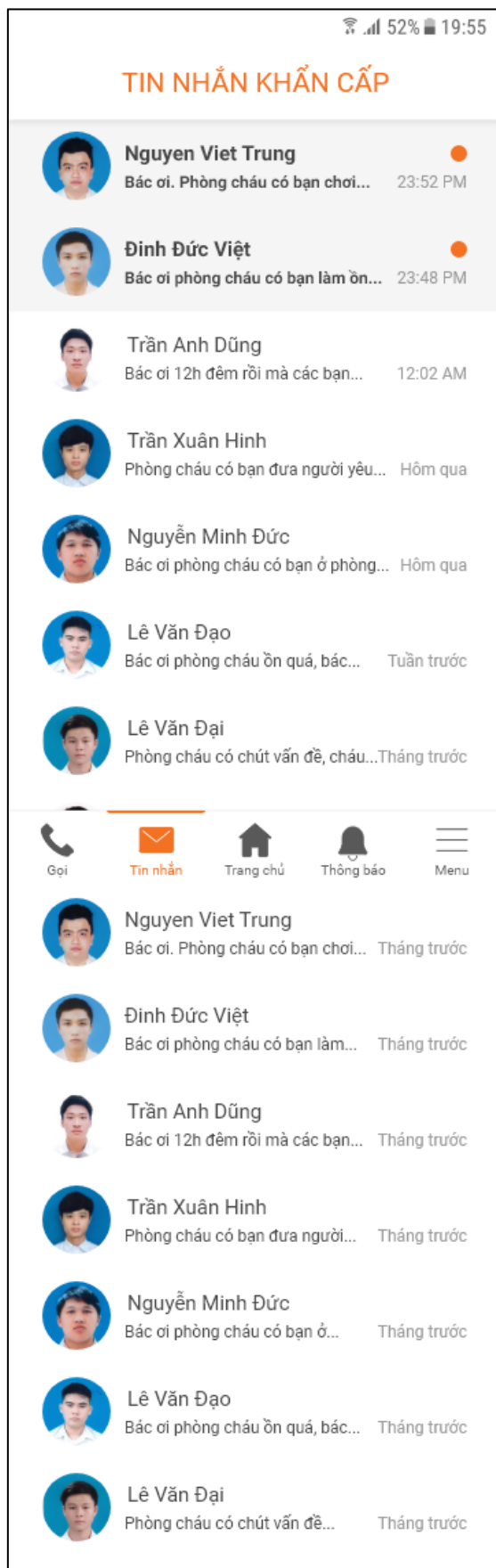
4.1.2.First UI Design Test Results

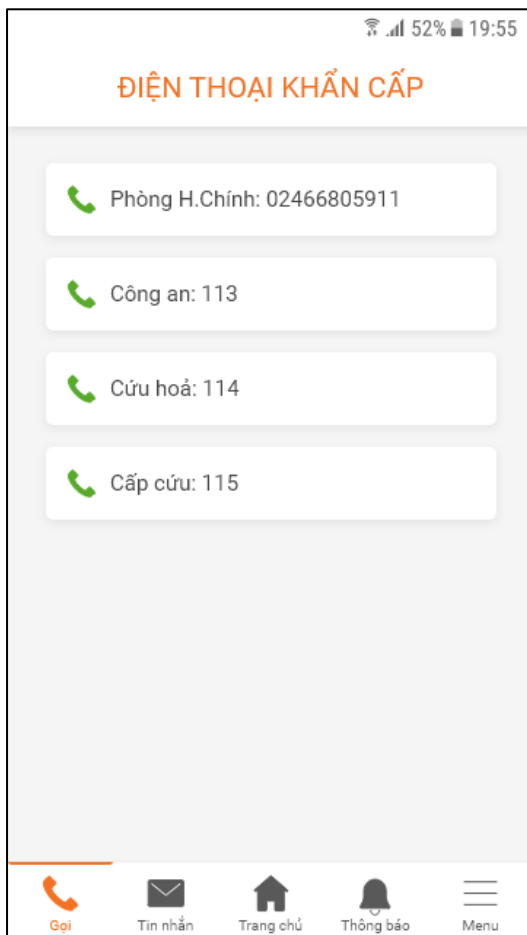
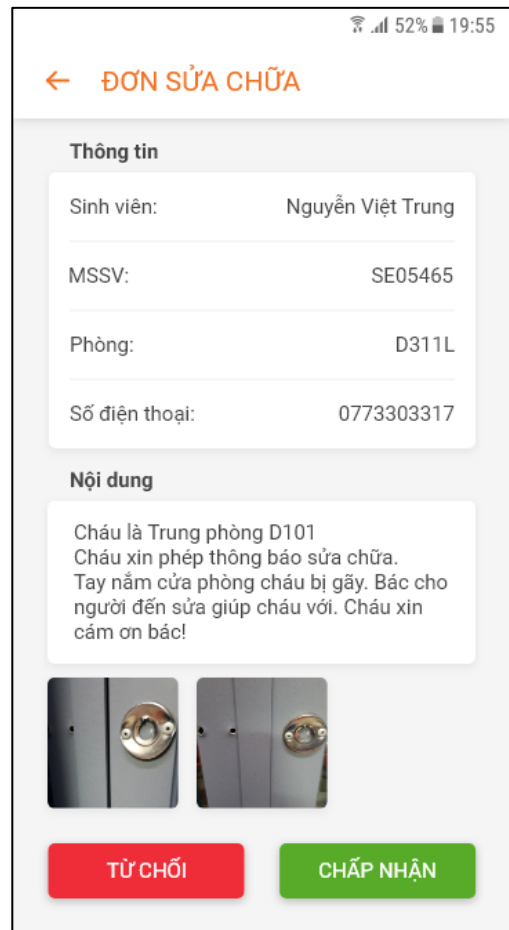
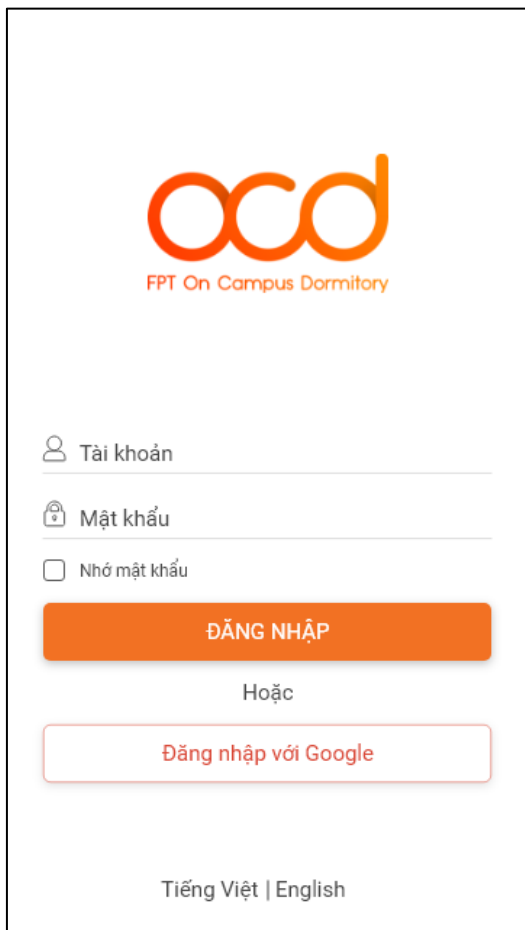
What 3 testers say about the interface	What we do
- Change colors and designs, draw more pictures, app too many words - Difficult buttons, enlarge - The app looks monotonous, old fashion, poor aesthetics, looks poor - The major and minor parts are not clear - Redesigned fire alarm screen for stand out more - The book bed section needs to add the empty bed list - The tables are uncomfortable, look like the stock market table - The color looks so eye-hurting - Don't understand the table to see if the electricity and water numbers are by period or by month, and how to perform? - Add/omit some information in Checkout/Maintenance form of Guard account - Add student/room list to check directly to guard account.	- Redesign most screens - Draw more icon and image to replace words - Apple more shadow and add more boxes or cards - Change the way use colors - Change composition to make it clearer - Change table and components color, style - Change buttons style and active button area - Add/omit information in checkout/maintenance form - Add student/room list to guard account - Change EW Usage View of Student to view each month instead of semester - Add warning for guard if the usage collected is too large or negative comparing to last month's usage

4.2.Design Finalization

4.2.1.Final UI Design

4.2.1.1.Guard







52% 19:55

← NHẬP BẰNG TAY

Công tơ điện phòng:

Nhập tại đây...

Số điện

Nhập tại đây...

TIẾP TỤC

52% 19:55

← ĐƠN SỬA CHỮA

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Phòng: D311L

Ghi chú xác nhận

Viết ghi chú...

ĐÓNG CHẤP NHẬN

Cảm ơn bác!




TỪ CHỐI CHẤP NHẬN



← ĐƠN SỬA CHỮA

Thông tin

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Sửa ghi chú

Bác đã ghi nhận thông tin của cháu!
Chiều nay sẽ có người qua sửa cho cháu nhé.

ĐÓNG

SỬA

Xem thêm...

SỬA GHI CHÚ

← ĐƠN CHECK OUT

Thông tin

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Giường: 01

Phòng: D311L

Số điện thoại: 0773303317

Nội dung

Cháu là Nguyễn Việt Trung
Cháu làm đơn này xin được làm thủ tục

Xem thêm...

TỪ CHỐI

CHẤP NHẬN

← ĐƠN SỬA CHỮA

Thông tin

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Phòng: D311L

Số điện thoại: 0773303317

Nội dung

Cháu là Trung phòng D101
Cháu xin phép thông báo sửa chữa.

Xem thêm...

SỬA GHI CHÚ

← THÔNG TIN SINH VIÊN

QUÉT SỐ PHÒNG

NHẬP SỐ PHÒNG

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52% 19:55

← NHẬP BẰNG TAY

Công tơ điện phòng:

D311L

Số điện

12050

TIẾP TỤC

Không thể nhận dạng!

*Không thể nhận dạng số! Có thể do ảnh chưa đủ rõ hoặc vì lý do khác, mời bạn **chụp lại** hoặc có thể dùng phương pháp **nhập thủ công bằng tay**.

ĐÓNG NHẬP TAY

CHỤP LẠI QUÉT

Chuyển Camera Trước/Sau

Bật/Tắt/Tự động đèn Flash

Tắt Camera (trở về trang chủ)

Chú ý!

Đưa ống kính điện thoại hướng vào trước bảng số phòng sinh viên và chụp ảnh lại.

☐ Không hiển thị lại

OK

Nhập ảnh có sẵn trong máy

Nhấn nút này để chụp

Nhấn vào đây để Bật/Tắt loa

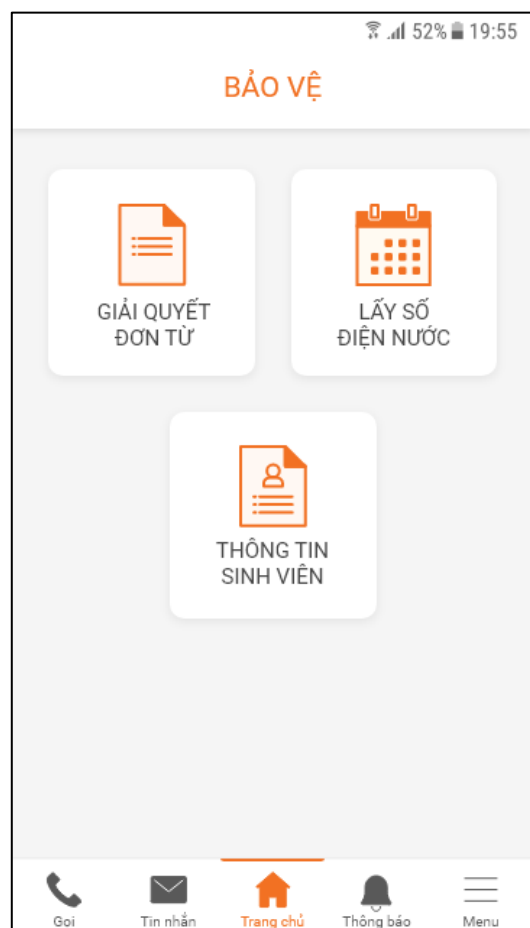
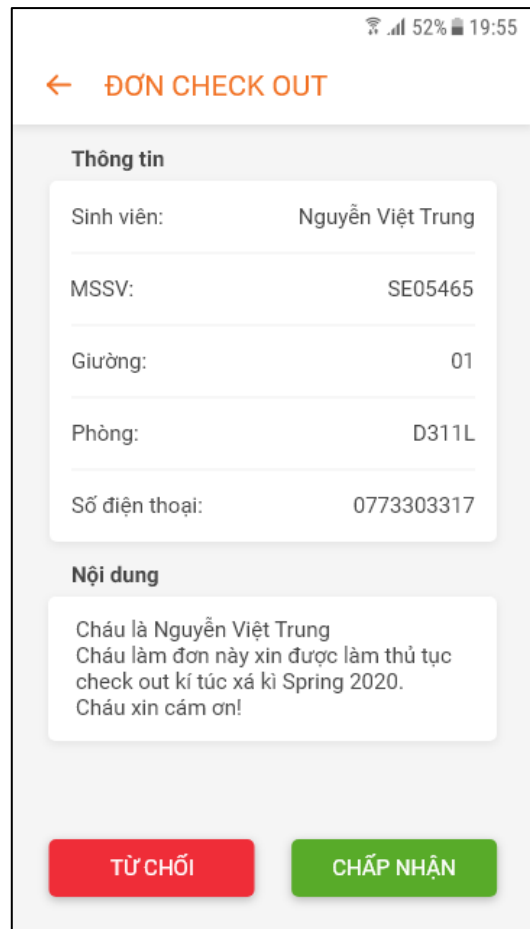
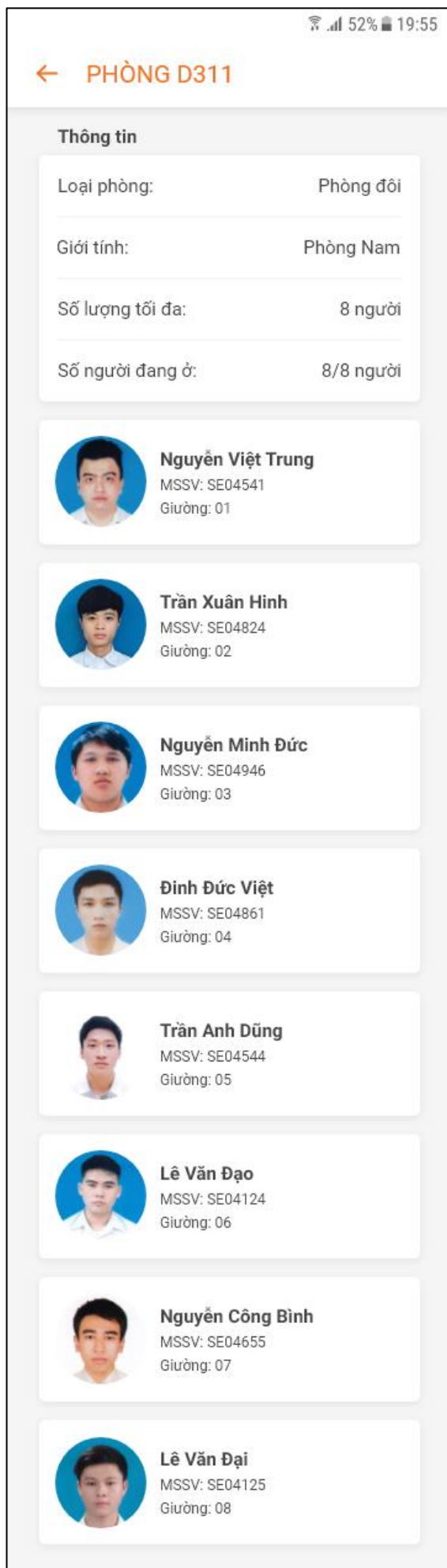
Loa/Bật

Đã nhận dạng!

Phòng D311

ĐÓNG TIẾP TỤC

CHỤP LẠI QUÉT



←

LẤY SỐ ĐIỆN

Thông tin

Công tơ điện phòng:

D311L

Số điện:

12050 kWh

Ngày:

17/11/2019

Ảnh chụp:

So sánh số điện tháng trước

Công tơ điện phòng:

D311L

Số điện:

4010 kWh

Ngày:

17/10/2019

Ảnh chụp:

* CHÚ Ý: Số điện tháng này tăng gấp 3 lần số điện tháng trước. Kết quả quét có thể sai!

GỬI

←

ĐƠN CHECK OUT

Thông tin

Sinh viên:

Nguyễn Việt Trung

MSSV:

SE05465

Ghi chú xác nhận

Viết ghi chú...

ĐÓNG

CHẤP NHẬN

Cháu là Nguyễn Việt Trung

Cháu làm đơn này xin được làm thủ tục check out kí túc xá kì Spring 2020.

Cháu xin cảm ơn!

TỪ CHỐI

CHẤP NHẬN

↑

Chuyển Camera Trước/Sau

↑

Bật/Tắt/Tự động đèn Flash

↑

Tắt Camera (trở về trang chủ)

Chú ý!

Đưa ống kính điện thoại hướng vào trước mặt công tơ, giữ ổn định đến khi có tiếng bíp.

☐ Không hiển thị lại

OK

↑

Nhập ảnh có sẵn trong máy

↑

Nhấn nút này để chụp

↑

Nhấn vào đây để Bật/Tắt loa

Loa/Bật

Page 107 | **OCD App**

← ĐƠN SỬA CHỮA

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Phòng: D311L

Ghi chú xác nhận

Viết ghi chú...

ĐÓNG

TỪ CHỐI

Cảm ơn đặc!

TỪ CHỐI

CHẤP NHẬN

D101 có thể bị cháy!

4 People is on the way

ĐANG ĐẾN GIÚP

ĐÃ GỌI CỨU HOẢ

X

TẮT

← ĐƠN CHECK OUT

Thông tin

Sinh viên: Nguyễn Việt Trung

MSSV: SE05465

Ghi chú xác nhận

Đơn được chấp nhận.

ĐÓNG

CHẤP NHẬN

Cháu là Nguyễn Việt Trung

Cháu làm đơn này xin được làm thủ tục check out kí túc xá kì Spring 2020.

Cháu xin cảm ơn!

TỪ CHỐI

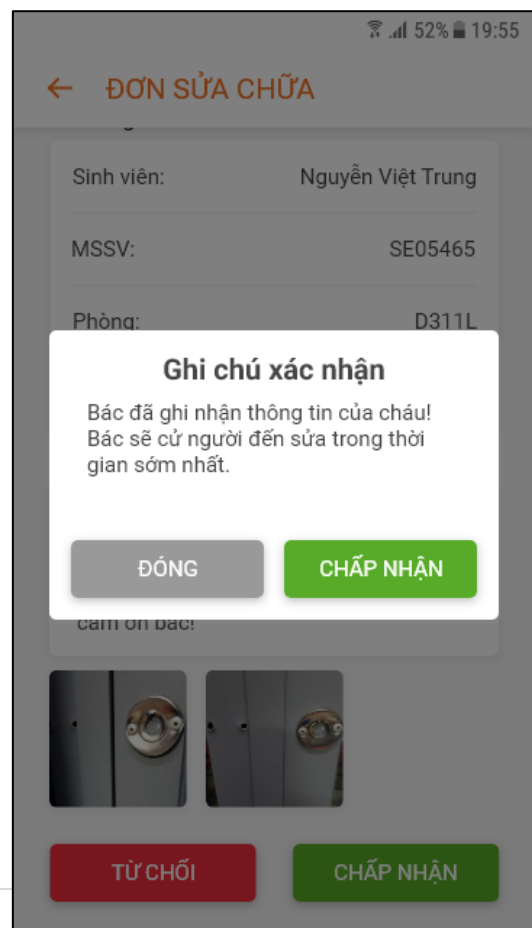
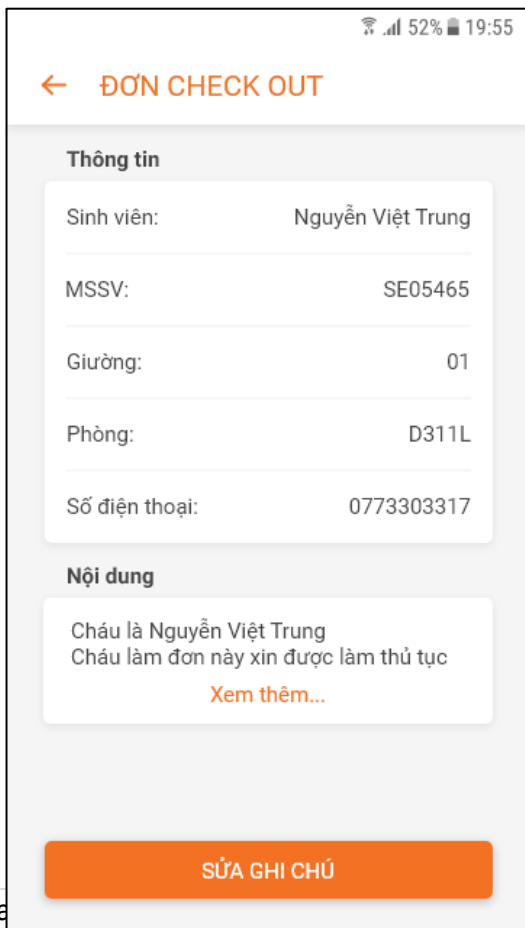
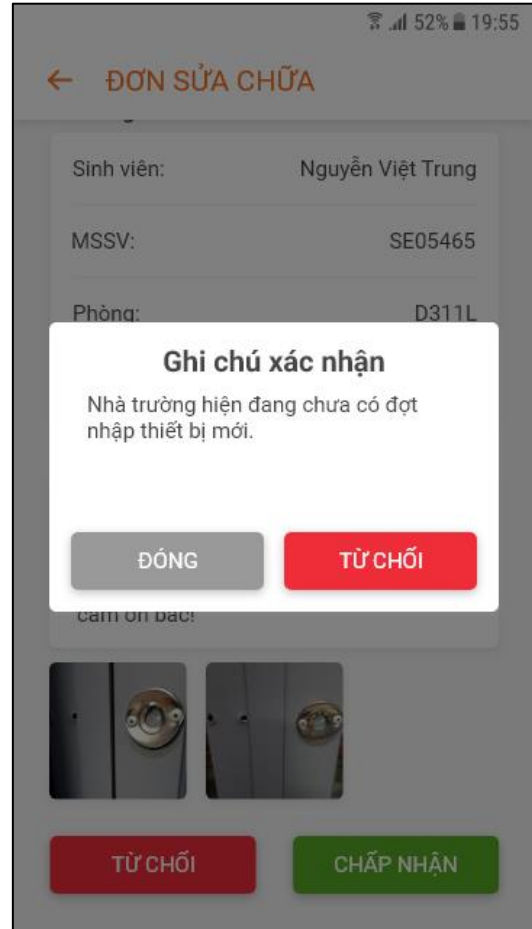
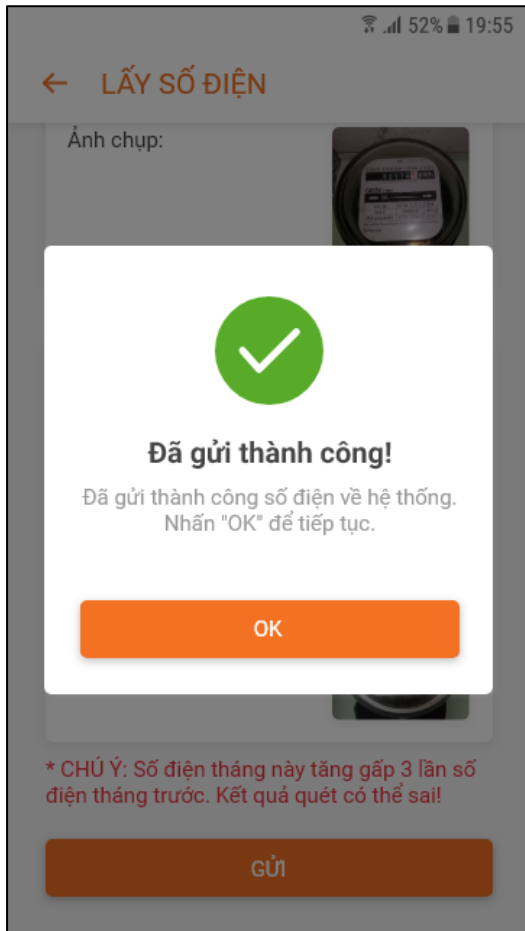
CHẤP NHẬN

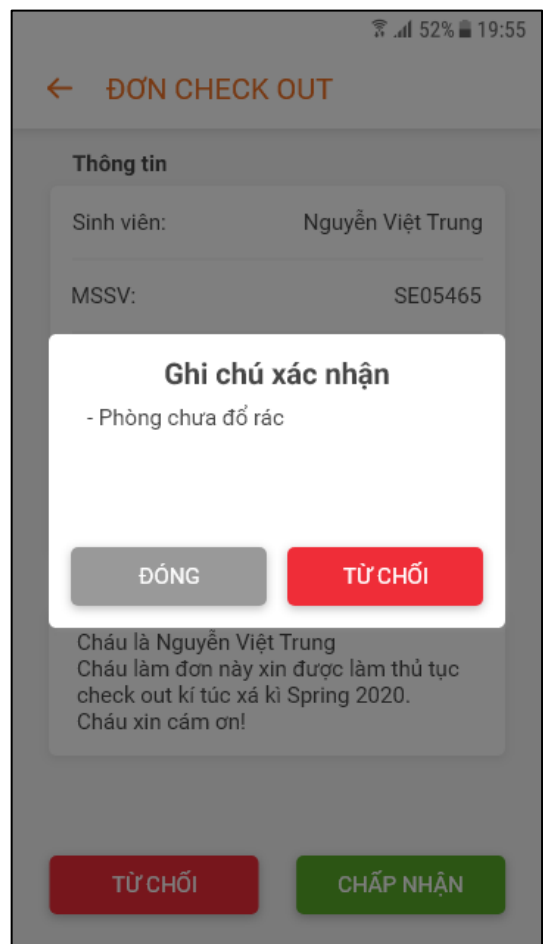
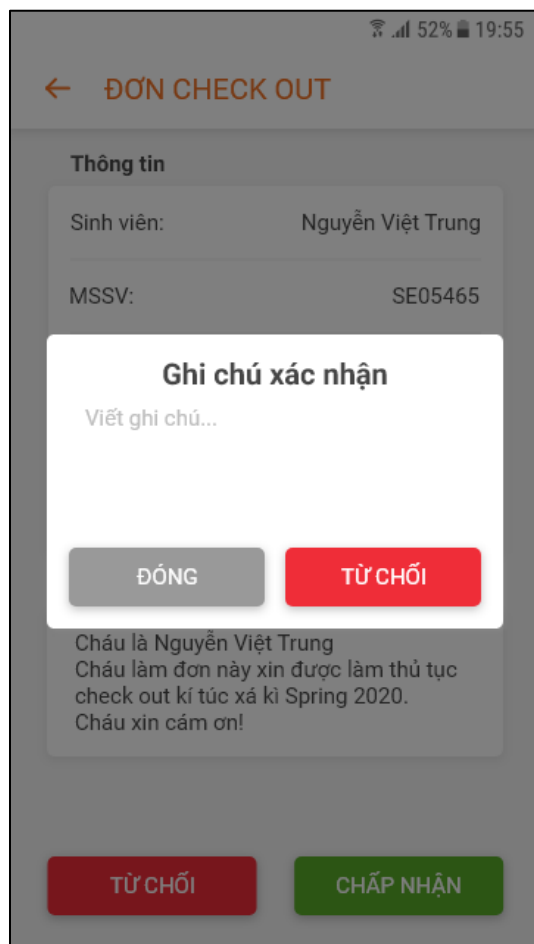
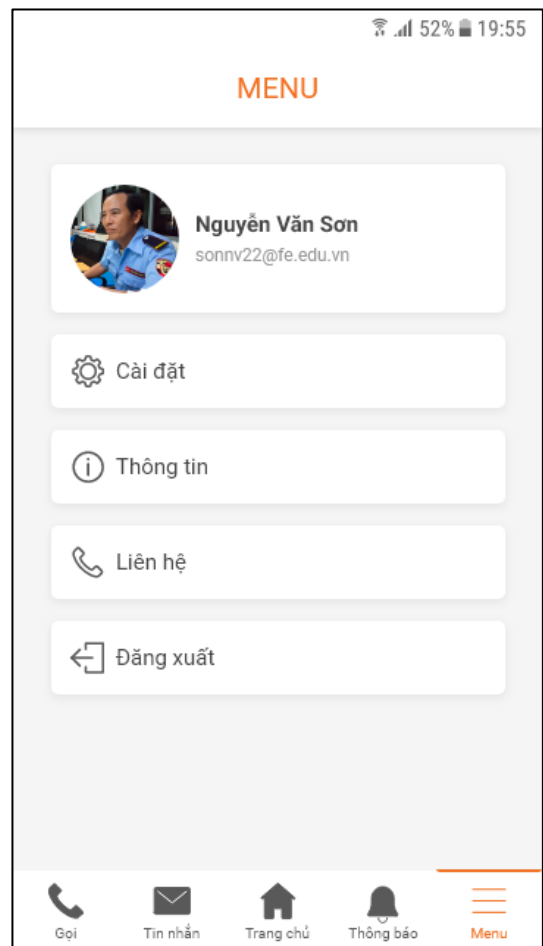
← NHẬP SỐ PHÒNG

Số phòng:

D311

TIẾP TỤC





← GIẢI QUYẾT ĐƠN TỪ

Check out	CHƯA XỬ LÝ
Sửa chữa	CHƯA XỬ LÝ
Sửa chữa	CHẤP NHẬN
Check out	CHẤP NHẬN
Check out	CHẤP NHẬN
Sửa chữa	CHẤP NHẬN
Check out	TỪ CHỐI
Check out	CHẤP NHẬN
Check out	CHẤP NHẬN
Sửa chữa	CHẤP NHẬN
Check out	TỪ CHỐI
Sửa chữa	CHẤP NHẬN

← NHẬP SỐ PHÒNG

Số phòng:

D311

TIẾP TỤC

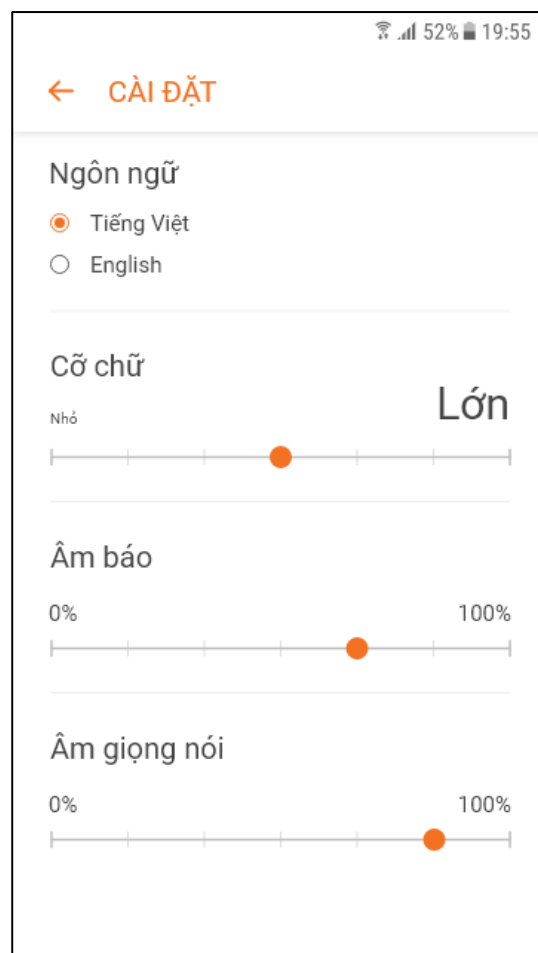
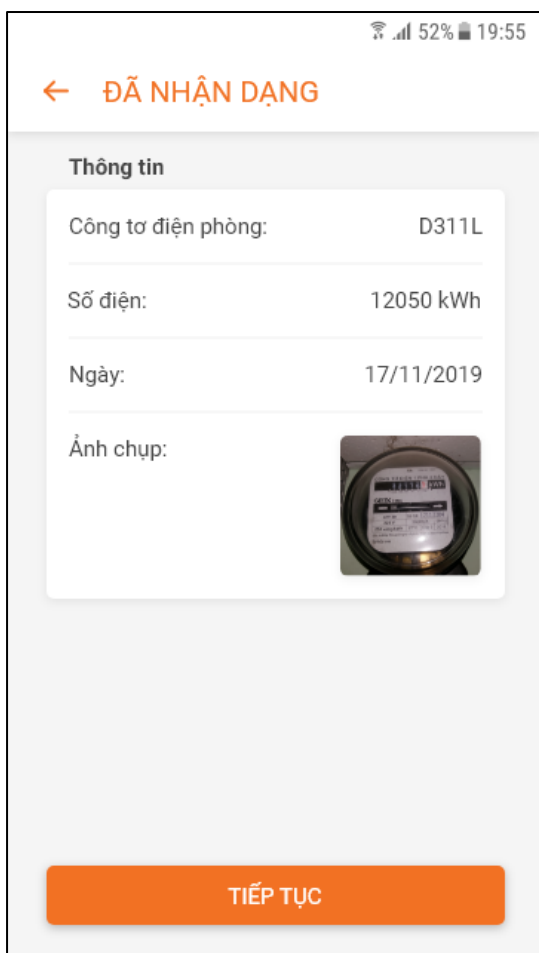
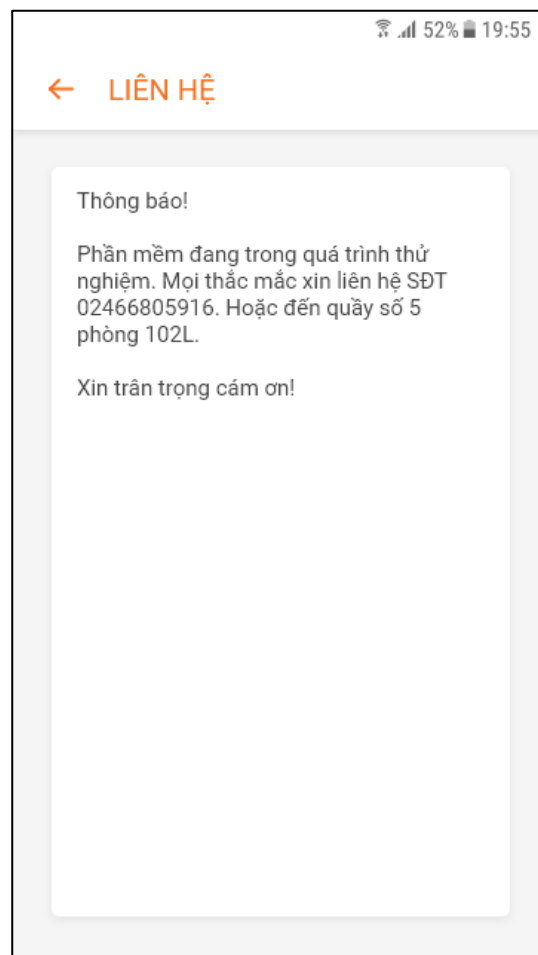
D101 có thể bị cháy!

3 People is on the way

ĐẾN GIÚP NGAY

GỌI CỨU HOẢ - 114

TẮT



4.2.1.2.Student

52%19:55

← Search Your New Bed

Dom D

Floor

Room

SEARCH

52%19:55

← Book A New Bed

Dom D

Floor 1

D101

Em muốn book giường 01, phòng D101.
Em xin cảm ơn ạ!

BOOK

52%19:55

← Forms

Form Type

Check out

Maintenance

*Note: You must finish all payment to check out

SEND

52%19:55

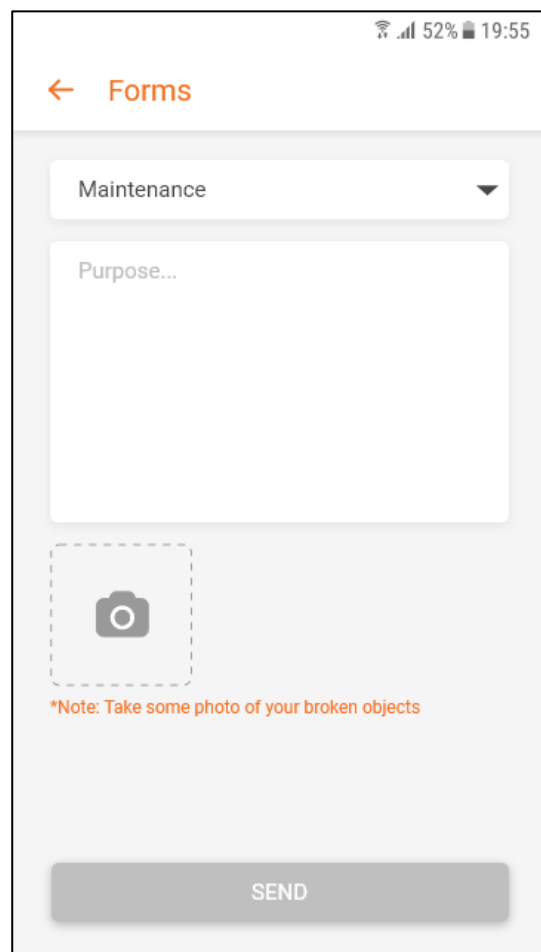
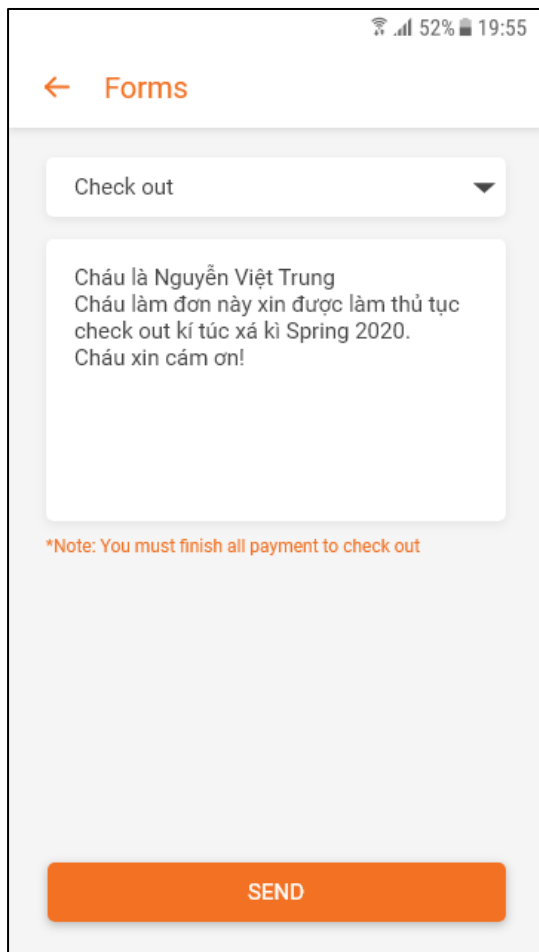
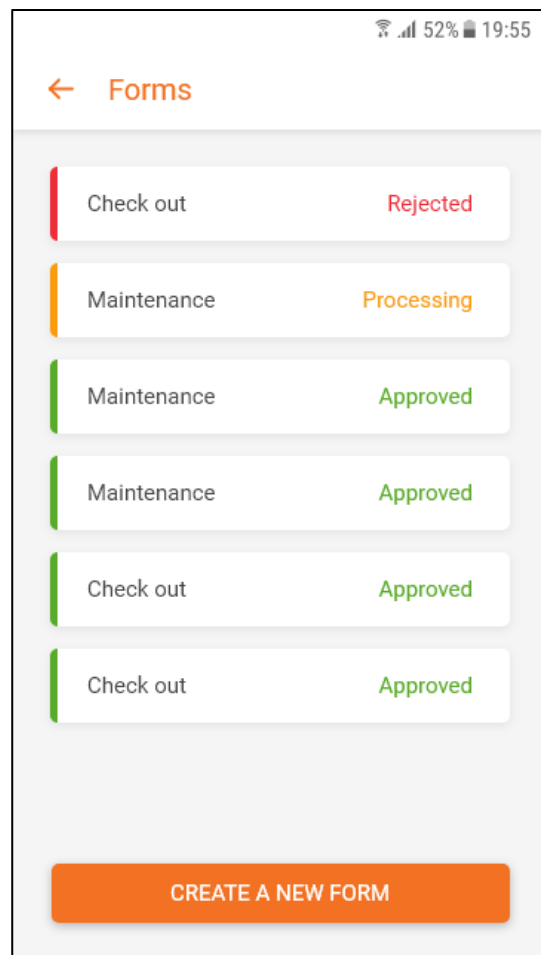
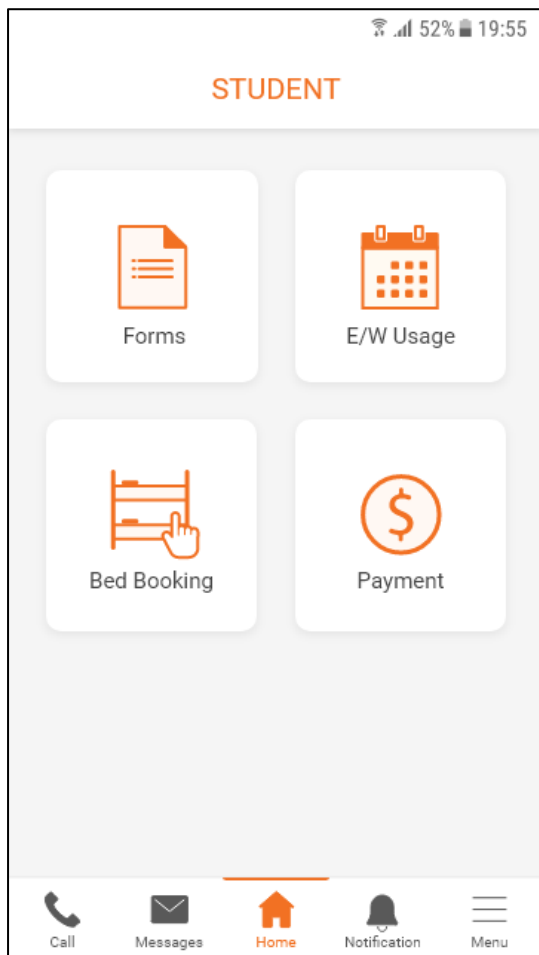
← Forms

Form Type

Purpose...

*Note: You must finish all payment to check out

SEND



52%

19:55

←

Required Payment

Overusage (5 - 8/2019)

180,000 VNĐ

Overdue

20,000 VNĐ

Compensation

100,000 VNĐ

Roombook Debt

50,000 VNĐ

PAY ALL

52%

19:55

←

Keep Present Bed

Bed:

Bed 1 - A101

Price:

700,000 VNĐ/Month

Your FAP Balance:

3,000,000 VNĐ

Balance after payment:

200,000 VNĐ

Total transaction:

- 2,800,000 VNĐ

PAY

52%

19:55

←

Room D102

Bed 01

Free

Bed 02

Free

Bed 03

Used

Bed 04

Free

Bed 05

Free

Bed 06

Used

Bed 07

Used

Bed 08

Used

52%

19:55

←

Emergency Messages

Bác ơi Phòng cháu có bạn chơi Game hết lớn ồn quá ạ, 12h đêm rồi mà ồn quá cháu ko ngủ dc

Seen 12/10/2019 - 00:15

Guard

Chào cháu. Cháu có thể cung cấp cho bác thông tin số phòng cháu đang ở được ko?

Seen 00:16 - 12/10/2019

Cháu ở phòng C111, Bác có thể qua nhắc nhở bạn ấy giúp cháu được ko ạ, cháu đã nhắc nhở bạn ấy nhiều lần nhưng không có hiệu quả.

Seen 00:17 - 12/10/2019

Guard

Bác đã ghi nhận thông tin của cháu. Cháu đợi một chút sẽ có người đến xử lý nhé.

Seen 00:18 - 12/10/2019

Dạ, Cháu cảm ơn bác ạ!

Delivered 00:19 - 12/10/2019

Text here...

➤

📷

📎

← Dom D

Floor 1	Free Room: 6
Floor 2	Free Room: 3
Floor 3	Free Room: 0
Floor 4	Free Room: 0
Floor 5	Free Room: 10

← Forms

Check out

Purpose...

***Note: You must finish all payment to check out**

SEND

← Book A New Bed

Dom D

Floor 1

D101

Note...

BOOK

← Monthly E/W Usage

Detail

Electric Meter: D311L

Room: D311

Month: 11/2019

Amount: 12050 kWh

Guard

Name: Nguyễn Văn Sơn

Date: 17/11/2019



Monthly E/W Usage

September 2019

Room	Type	Meter	Over Usage	Detail
D311	Eltc	Left	10250 kWh	...
D311	Wtr	Left	10414 m ³	...
D311	Eltc	Right	11015 kWh	...
D311	Wtr	Right	10059 m ³	...

Over usage payment

Electricity:
194,000 VND

Water:
102,000 VND

Request Recheck

Kỳ này phòng cháu chỉ có 2 người ở mà sao số điện lại cao vậy ạ. Bác kiểm tra lại giúp cháu với ạ. Cháu xin cảm ơn!

SEND

Monthly E/W Usage

September 2019

Room	Type	Meter	Over Usage	Detail
D311	Eltc	Left	10250 kWh	...
D311	Wtr	Left	10414 m ³	...
D311	Eltc	Right	11015 kWh	...
D311	Wtr	Right	10059 m ³	...

Over usage payment

Electricity:
194,000 VND

Water:
102,000 VND

Request Recheck

Purpose...

SEND

Pay All

Required payment:

1,370,000 VNĐ

Your FAP Balance:

3,000,000 VNĐ

Balance after payment:

1,630,000 VNĐ

Total transaction:

- 1,370,000 VNĐ

PAY

Debit Card

Card Number:

**** * * * *

Name of Cardholder:

Text here...

Expiry Date:

*** / ***

CCV:

Money Amount:

*Your personal data will be used to process your order, support your experience throughout this website and for other purposes described in our privacy policy.

PROCEED

Monthly E/W Usage

September 2019

Room	Type	Meter	Over Usage	Detail
D311	Eltc	Left	10250 kWh	...
D311	Wtr	Left	10414 m ³	...
D311	Eltc	Right	11015 kWh	...
D311	Wtr	Right	10059 m ³	...

Over usage payment

Electricity:

194,000 VNĐ

Water:

102,000 VNĐ

Your overusage this semester has been under recheck.

Payment History

26/11/2019

+ 3,000,000 VNĐ

25/11/2019

- 2,800,000 VNĐ

12/11/2019

- 50,000 VNĐ

10/10/2019

- 100,000 VNĐ

05/10/2019

+ 2,000,000 VNĐ

25/09/2019

- 500,000 VNĐ

12/09/2019

+ 1,000,000 VNĐ

16/08/2019

- 150,000 VNĐ

← TOP-UP Your FAP Wallet

Choose Your Payment Method

☐ ViettelPay Wallet

☒ Debit Card

☐ Paypal

PROCEED

← 26/11/2019

Student ID: SE04541

Description: Nap tien

Date: 21/10/2019

Time: 12:02 PM

Cost: + 3,000,000 VNĐ

← Overusage (5 - 8/2019)

Overusage cost: 180,000 VNĐ

Your FAP Balance: 3,000,000 VNĐ

Balance after payment: 2,720,000 VNĐ

Total transaction: - 180,000 VNĐ

PAY

← Payment

TOP-UP Your FAP Wallet

Required Payment

Payment History

19:55

← TOP-UP Your FAP Wallet

Choose Your Payment Method

☐ ViettelPay Wallet

☒ Debit Card

☐ Paypal

PROCEED

19:55

← 26/11/2019

Student ID: SE04541

Description: Nap tien

Date: 21/10/2019

Time: 12:02 PM

Cost: + 3,000,000 VNĐ

19:55

← Overusage (5 - 8/2019)

Overusage cost: 180,000 VNĐ

Your FAP Balance: 3,000,000 VNĐ

Balance after payment: 2,720,000 VNĐ

Total transaction: - 180,000 VNĐ

PAY

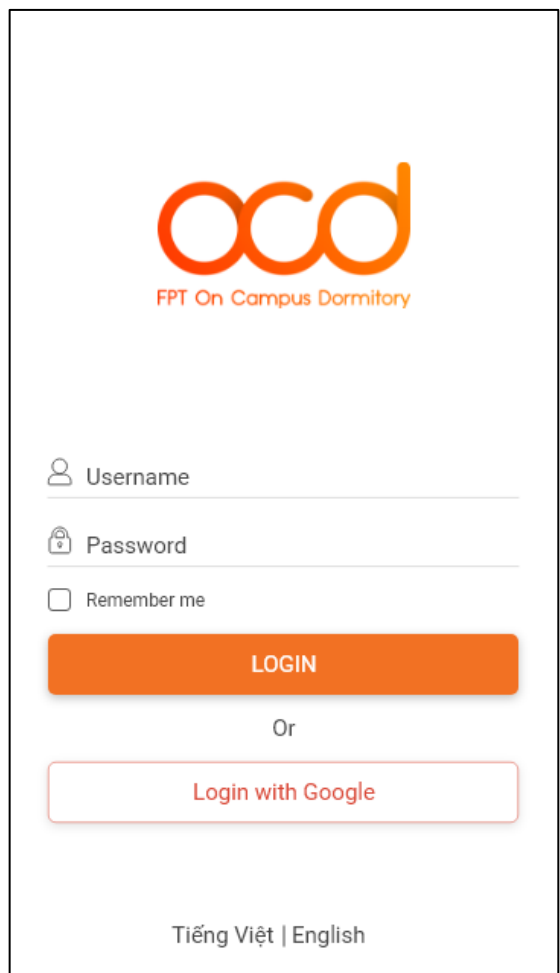
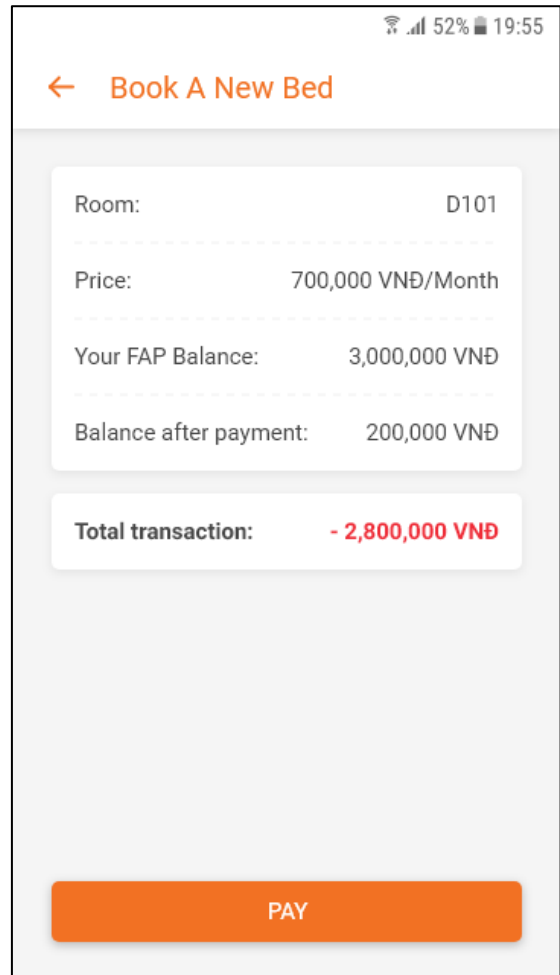
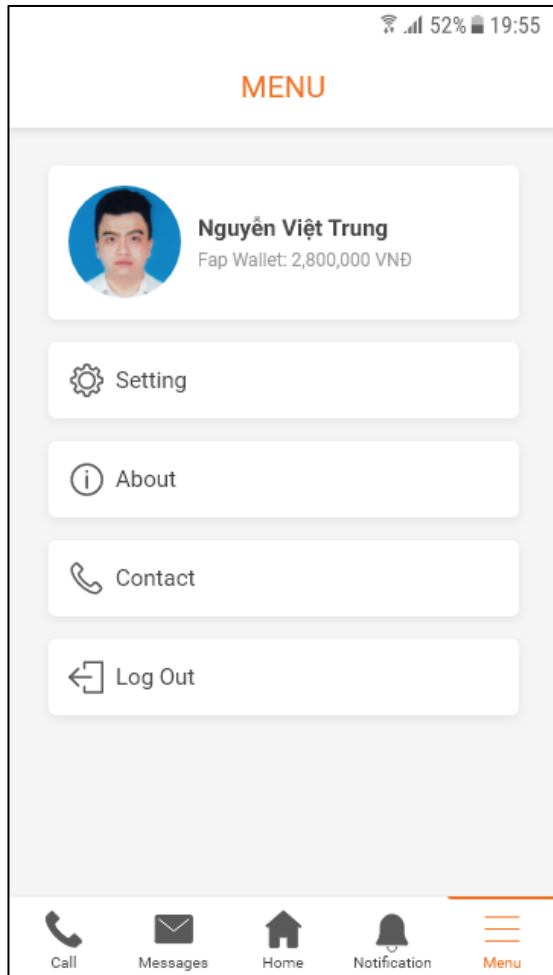
19:55

← Payment

TOP-UP Your FAP Wallet

Required Payment

Payment History



← Account Information



 Your FAP Balance
2,800,000 VND

Name: Nguyễn Việt Trung

Student ID: SE04541

Prof: Graphic Design

Group: K12

D.O.B: 04/08/1998

Room History

Semester	Bed/Room
Fall 2016	Bed 01 - D311L
Spring 2017	Bed 01 - D311L
Summer 2017	Bed 01 - D311L
Fall 2017	Bed 01 - D311L
Spring 2018	Bed 01 - D311L
Summer 2018	Bed 01 - D311L
Fall 2018	Bed 01 - D311L
Spring 2019	Bed 01 - D311L
Summer 2019	Bed 01 - D311L
Fall 2019	Bed 01 - D311L

← Floor 1

Room D101 Free Bed: 0

Room D102 Free Bed: 1,2,4,5

Room D103 Free Bed: 0

Room D104 Free Bed: 0

Room D105 Free Bed: 0

Room D106 Free Bed: 4,6,8

Room D107 Free Bed: 0

Room D108 Free Bed: 1,4,5,6

Room D109 Free Bed: 4,6

Room D110 Free Bed: 0

Room D111 Free Bed: 0

Room D112 Free Bed: 5,6,8

Room D113 Free Bed: 5,8

4.2.2.Final Test: System Usability Scale (SUS)

We used Adobe XD version full design on phone to have a more realistic representation of hardware and interface design. With an aim to acquire a deeper insight and feel about our application, this time we proceed this test.

We tested with 7 participants, the result showing in SUS (system usability scale) form for better overall evaluation. SUS use 10 questions, related to the usability of an app, then each participant answer by saying how agree they are with each statement. The results will show how good your system is with an average score from all participants.

For odd items: subtract one from the user response.

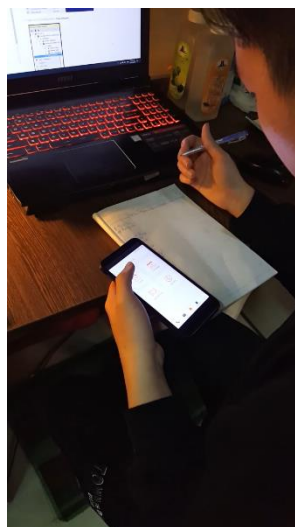
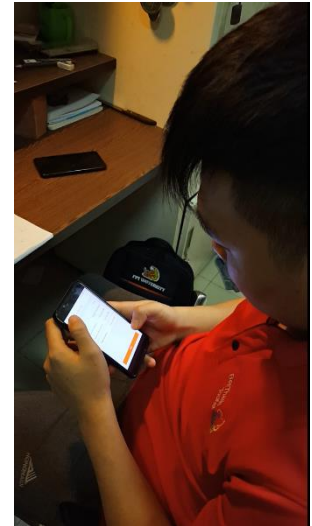
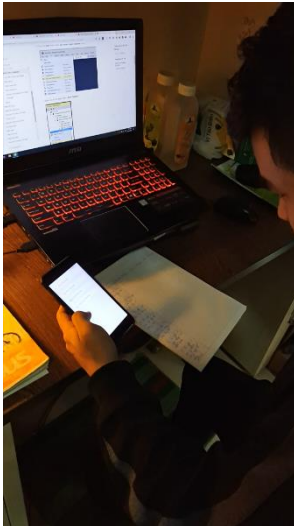
For even-numbered items: subtract the user responses from 5

This scales all values from 0 to 4 (with four being the most positive response).

Add up the converted responses for each user and multiply that total by 2.5. This converts the range of possible values from 0 to 100 instead of from 0 to 40.

That would be the final SUS Score for your product or feature.

7 Testers: 6 FU Students and 1 FU Guard



5 levels of agree : Totally Disagree < Disagree < Neutral < Agree < Totally Agree

	Mạnh	Quyền	Trường	Tú	Hung	Trung	Guard
1. I think that I would like to use this system frequently.	Agree	Totally Agree	Neutral	Agree	Neutral	Agree	Totally Agree
2. I found the system unnecessarily complex.	Agree	Neutral	Disagree	Disagree	Neutral	Totally Disagree	Totally Disagree
3. I found the system unnecessarily complex.	Agree	Totally Agree	Agree	Neutral	Agree	Totally Agree	Totally Agree
4. I think that I would need the support of a technical person to be able to use this system.	Totally Agree	Agree	Disagree	Neutral	Disagree	Disagree	Agree
5. I found the various functions in this system were well integrated.	Neutral	Totally Agree	Totally Agree	Neutral	Totally Agree	Totally Agree	Neutral
6. I thought there was too much inconsistency in this system.	Agree	Neutral	Disagree	Disagree	Disagree	Neutral	Neutral
7. I would imagine that most people would learn to use this system very quickly.	Neutral	Totally Agree	Agree	Agree	Agree	Totally Agree	Totally Agree
8. I found the system very cumbersome to use.	Neutral	Totally Disagree	Disagree	Totally Disagree	Disagree	Disagree	Disagree
9. I felt very confident using the system.	Disagree	Totally Agree	Neutral	Neutral	Neutral	Totally Agree	Totally Agree
10. I needed to learn a lot of things	Totally Agree	Totally Agree	Disagree	Disagree	Disagree	Disagree	Disagree

before I could get going with this system.							
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	O/E	Mạnh	Quyền	Trường	Tú	Hưng	Trung	Guard
1. I think that I would like to use this system frequently.	-1	3	4	2	3	2	3	4
2. I found the system unnecessarily complex.	5-	4	2	1	1	2	0	0
3. I found the system unnecessarily complex.	-1	3	4	3	2	3	4	4
4. I think that I would need the support of a technical person to be able to use this system.	5-	4	3	1	2	1	1	3
5. I found the various functions in this system were well integrated.	-1	2	4	4	2	4	4	2
6. I thought there was too much inconsistency in this system.	5-	3	2	1	1	1	2	2
7. I would imagine that most people would learn to use this system very quickly.	-1	2	4	3	3	3	4	4
8. I found the system very cumbersome to use.	5-	2	0	1	0	1	1	1
9. I felt very confident using the system.	-1	1	4	2	2	2	4	4
10. I needed to learn a lot of things before I could get going with this system.	5-	4	4	1	1	1	1	1
MARK (Sum*2.5)		35	72.5	72.5	67.5	70	85	77.5
AVERAGE MARK		68.6						

From the result of the sum of SUS score is about **68.6**.

According to SUS Score equivalent table, we achieve **Good Rank** (68-80 band score).

Therefore, our app is potential and can be further developed !

Report No.5: **Simulation**

We perform simulation in Adobe XD app design in real smartphone for direct testing.