Group 7

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The realization of User Management (backend)

- The dispatcher creates a customer from email and assigns an RFID token, and a password to let them log in and track deliveries.
- The dispatcher creates a deliverer from email and assigns an RFID token, and a password to let them log in and track assigned deliveries.
- The dispatcher can also create a new dispatcher to manage the system. The new dispatcher is created from email and assigned a password.

The realization of Authentication/Authorization (authentication service)

- Users can authenticate themselves via their ASE Delivery account. The web application sends the password to the server in an encrypted format, so only the server can read the password value.
- Dispatcher requests accessing deliveries, boxes, or user information need to be authenticated and authorized.
- Deliverer or customer requests accessing deliveries need to be authenticated and authorized.
- Customer requests tracking of delivery need to be authenticated and authorized.

Xu Haidong

The realization of Delivery Management (UI service)

- A dispatcher can create, list, update and delete pick-up boxes through the web GUI.
- A dispatcher can create, list, update and delete deliveries through the web GUI. On the creation of delivery, the dispatcher specifies the target box, the target customer, and the responsible deliverer. The system ensures that the target box is only used for deliveries of one customer.
- A dispatcher can create, list, update and delete other users through the web GUI.
- A customer can list active deliveries and their corresponding pick-up box through the GUI.
- A customer can see past deliveries and their corresponding pick-up boxes through the GUI.
- A customer can track their active delivery by inputting the tracking code in the GUI

The realization of User Management (frontend)

- The dispatcher creates a customer from email and assigns an RFID token, and a password to let them log in and track deliveries.
- The dispatcher creates a deliverer from email and assigns an RFID token, and a password to let them log in and track assigned deliveries.
- The dispatcher can also create a new dispatcher to manage the system. The new dispatcher is created from email and assigned a password.

Wang Zidong

The realization of email notification

- A dispatcher creates a new delivery for a customer
- A deliverer successfully places a delivery inside the pick-up box of the customer
- The customer successfully collects all deliveries in their pick-up box

The realization of delivery management（backend）

- On the creation of delivery, the dispatcher specifies the target box and the target customer, and the responsible deliverer.
- The system ensures that the target box is only used for deliveries of one customer.
- The deliverer can deposit a delivery only in the designated target pick-up box. After a successful delivery, the system records that all collected deliveries by this deliverer for this customer have been delivered.
- The customer can use their token to open a box that contains deliveries for them. After a successful delivery collection, the system records that all deliveries in the box are delivered to the customer.

The realization of Delivery Management (UI service)(backend)

- A customer can list active deliveries and their corresponding pick-up box through the GUI.
- A customer can see past deliveries and their corresponding pick-up boxes through the GUI.
- A customer can track their active delivery by inputting the tracking code in the GUI

Li Chen

The realization of Backend Processing

- the connection between hardware and backend
- realize inputs processing from Raspberry Pi to execute a particular function (e.g. The packaged is delivering, placed or picked).

The realization of Backend Communication

- realize request sending, receiving and processing responses from the backend.

The realization of Box Unlock (shared with Zheng Yuqian)

- A pick-up box lights a green LED if a deliverer/customer is authorized to open the lock. Otherwise, the box lights a red LED if the user deliverer/customer is unauthorized.
- Use a light sensor to detect whether a box is opened or closed.
- After a deliverer/customer verifies their token and closes the box properly, the system updates the box status. A light sensor (photoresistor) is used to detect whether a box is closed properly by measuring the light intensity inside the box. If the box is not closed properly within 10 seconds, the pick-up box shall blink the LED light with red color.

The realization of Box Management (shared with Zheng Yuqian)

- The dispatcher manages pick-up boxes. On creation, they configure the street address and ID of the box manually. The configuration file is stored in Raspberry device.
- Each pick-up box has a fixed street address and a unique printable name and is equipped in a Rasberry Pi device.
- The device is connected to an RFID reader that can be used in authentication.
- The pick-up box is either empty or holds arbitrary many deliveries for exactly one customer. Over time, many customers can use the same box.
- At a given point in time, all the deliveries in a box have to be for the same customer.

Zheng Yuqian

The setup of whole hardware part

- the lighting of LED, the RFID Scanner, the resistor and the connection to the Raspberry Pi wire and set up successfully and correctly due to specified requirements.

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