

## JEE PROJECT REPORT

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# 1 CONCEPTION

## 1.1 Use case diagram

A UML use case diagram is the primary way to represent system/software requirements for new underdeveloped software. Use cases specify the expected behavior (what), and not the exact method of making it happen (how). Use cases can have both a textual and a visual representation (i.e., use case diagram). A key concept of use case modeling is that it helps us design a system from the end user's perspective. It is an effective technique for communicating system behavior in the user's terms by specifying all externally visible system behavior.

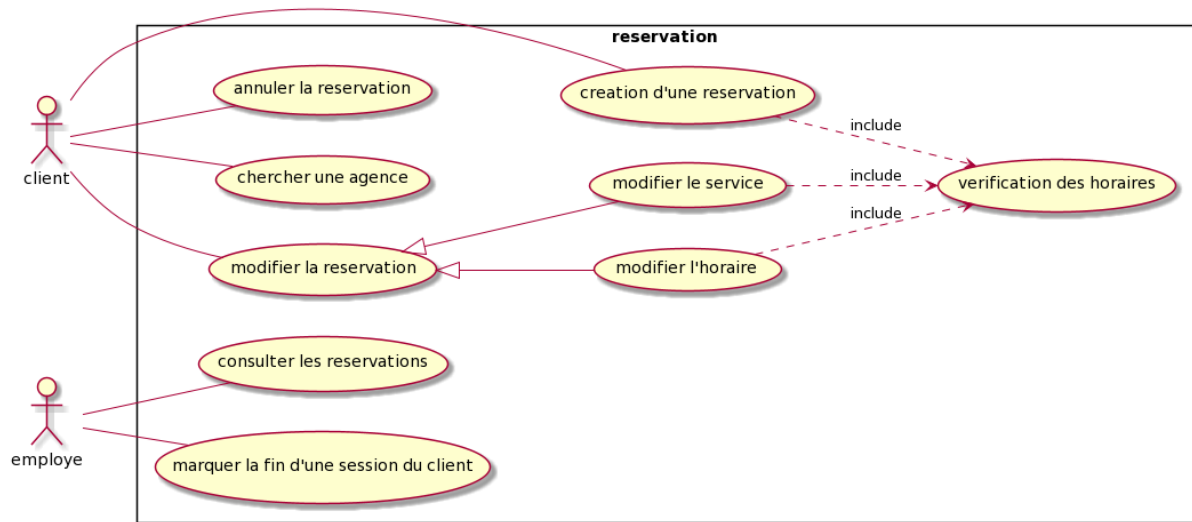


Figure 1 Use case diagram

## 1.2 Activity diagram

Activity diagram is another important behavioral diagram in UML to describe dynamic aspects of the system. It's essentially an advanced version of a flow chart

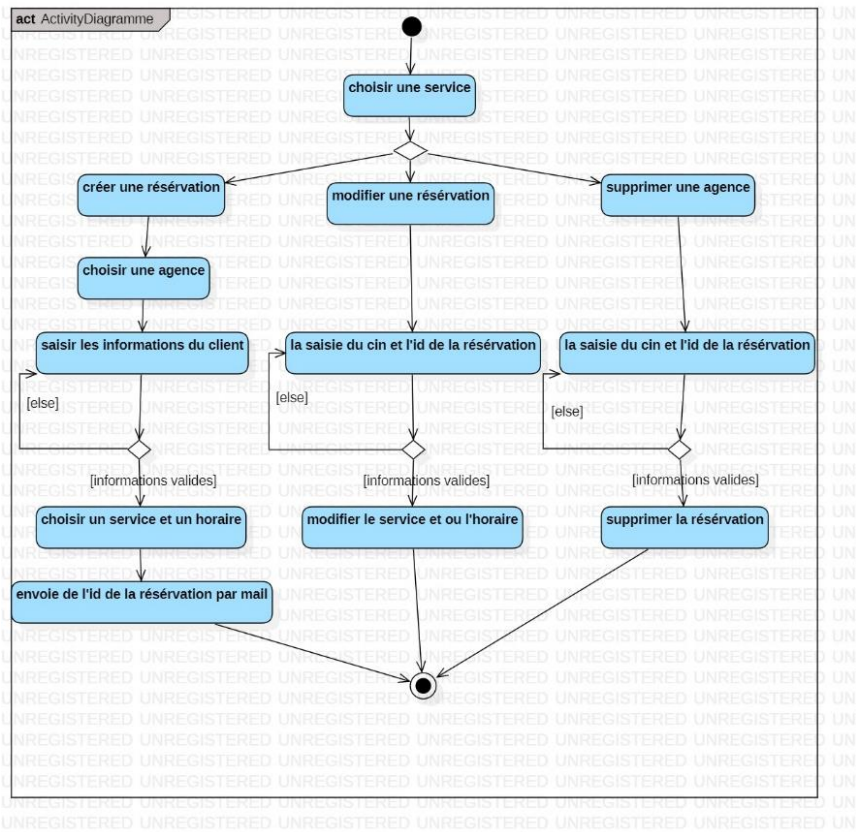


Figure 2 Activity diagram for client service

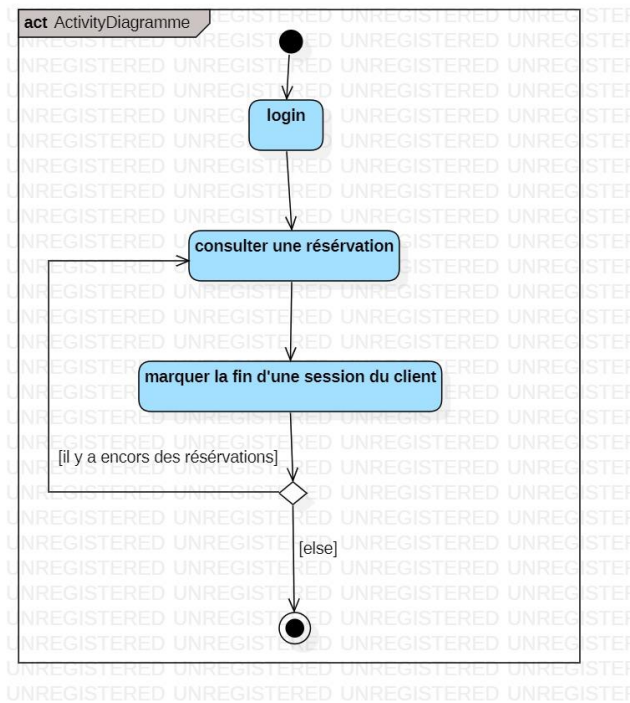


Figure 3 Activity diagram for employee service

### 1.3 Class diagram

The UML Class diagram is a graphical notation used to construct and visualize object-oriented systems. A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes with their attributes, operations (or methods), and the relationships among objects.

Reservation system's Class Diagram

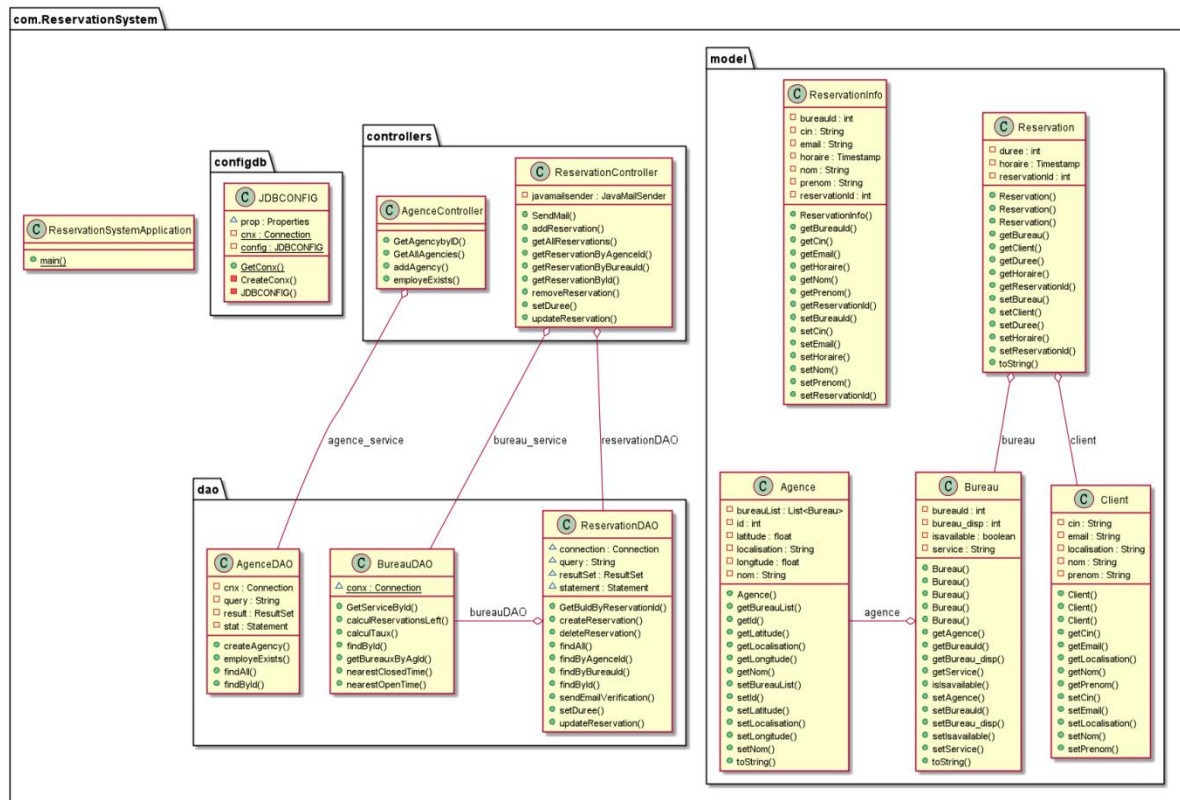


Figure 4 Class diagram

## 2 DEVELOPEMENT AND IMPLEMENTATION

### 2.1 TESTS

When it comes to testing there are several different types of tests that you can write to help test and automate the health of your application.

Spring Boot makes integrating and working with tests easier than ever before. So, for testing we used:

- **@SpringBootTest** annotation which loads the actual application context.
- **WebEnvironment.RANDOM\_PORT** to create and run the application at some random server port.
- **@LocalServerPort** gets the reference of the port where the server has started. It helps in building the actual request URIs to mimic real client interactions.
- Use **TestRestTemplate** class helps in invoking the HTTP requests which are handled by controller class.
- org.junit.jupiter.api.Test annotations are from Junit 5 and mark the method as test method to run. When doing basic testing, JUnit and Spring complement each other well.

```
1 package com.ReservationSystem.controllers;
2
3 import static org.junit.jupiter.api.Assertions.*;
15
16 @SpringBootTest(webEnvironment = SpringBootTest.WebEnvironment.RANDOM_PORT)
17 class TestAgenceController {
18
19     @Autowired
20     private TestRestTemplate testRestTemplate;
21
22     //tester GetAgencybyID() de la classe Agencecontroller
23     @Test
24     void GetAgencybyIDTest() throws Exception{
25
26         Agence agenceExpected=null;
27         Bureau bureau1 = new Bureau(1,"schèque",30,true);
28         Bureau bureau2 = new Bureau(2,"scompte",50,true);
29         Bureau bureau3 = new Bureau(3,"svairement",40,true);
30         List<Bureau> bureaux = new ArrayList<Bureau>();
31         bureaux.add(bureau1);
32         bureaux.add(bureau2);
33         bureaux.add(bureau3);
34         agenceExpected = new Agence("CIH Kortoba","LOT Kortoba Meknes Maroc",(float)31.7923,(float)-7.08017,bureaux);
35         agenceExpected.setId(1);
36
37         ResponseEntity<Agence> agenceReturned = testRestTemplate.getForEntity( "/agency/1", Agence.class);
38         assertEquals(agenceExpected.getNom(), agenceReturned.getBody().getNom());
39         assertEquals(agenceExpected.getLatitude(), agenceReturned.getBody().getLatitude());
40         assertEquals(agenceExpected.getLongitude(), agenceReturned.getBody().getLongitude());
41
42     }
43 }
```

Figure 5 Agencies controller test

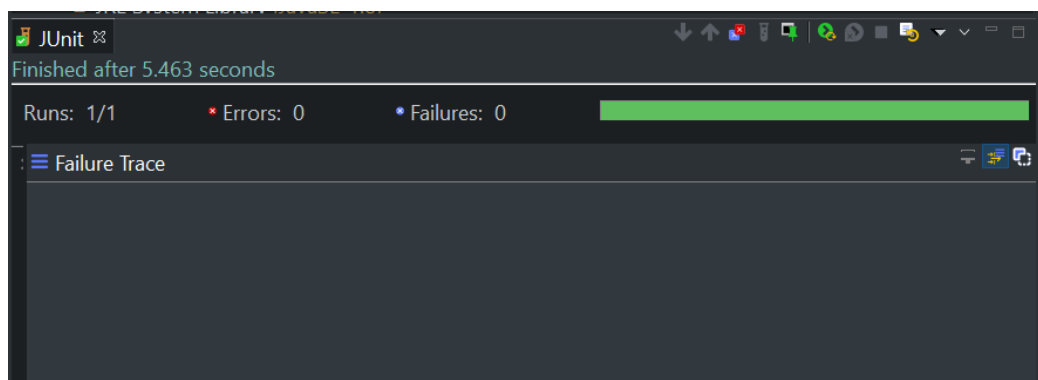


Figure 6 TEST RESULT

## 2.2 Realization

### 2.2.1 Homepage

In our project this is the first page, it's a responsive page where we can make and edit reservations or login as an employee, this is just the first screenshot, it's a long page.

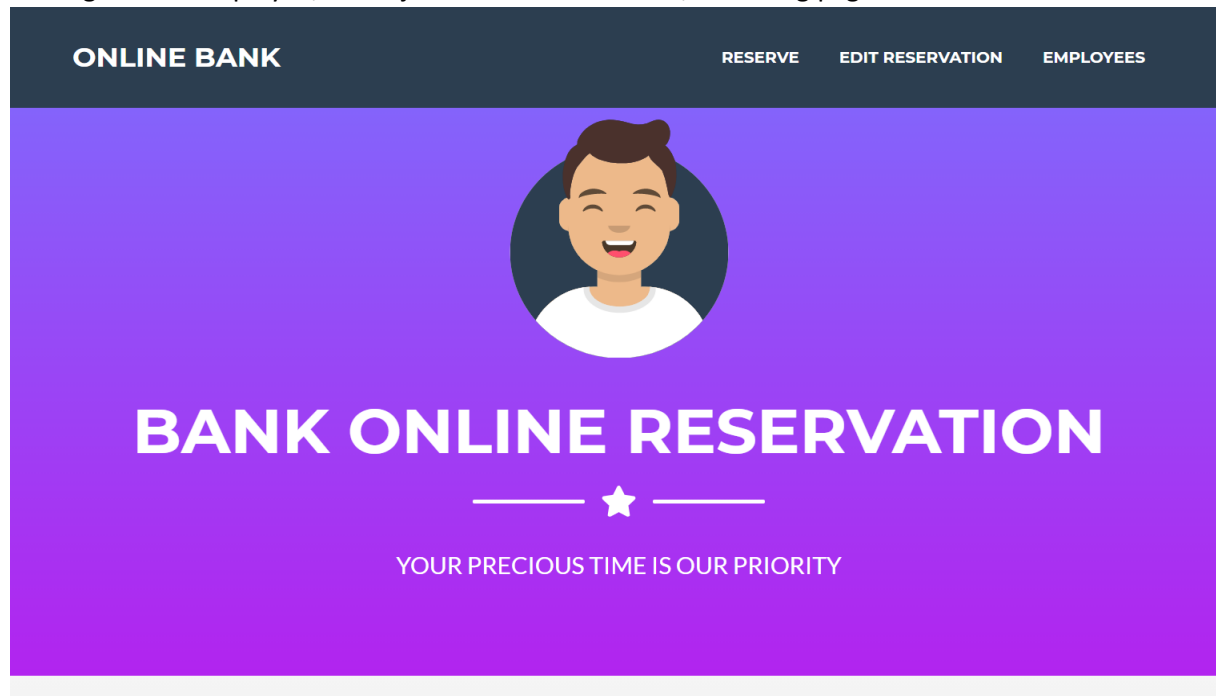


Figure 7 HOMEPAGE

### 2.2.2 Reservation process

After clicking on the make reservation button you'll be taken to the map page, in this page



Figure 8 MAP PAGE

You'll be asked to give the permission to use your location and then you'll see your location (Black marker) and the location of the available agencies (Yellow markers). If you clicked on an agency a popup will give you these informations:

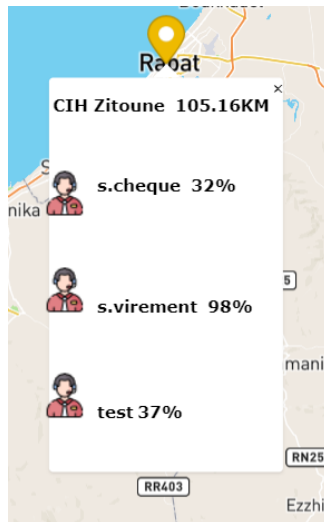


Figure 9 Agencies details

The distance between your location and the agency and the availability of the services which is by the way calculated automatically by dividing 18 (total reservations in a day) by number of reservation on that day. After deciding the agency that you want, you'll have to activate the selection mode and select it, and then you'll be asked to give your information

Figure 10 Reservation form

Note that the agency's text field of is not editable.

The last part is to pick a date and time :



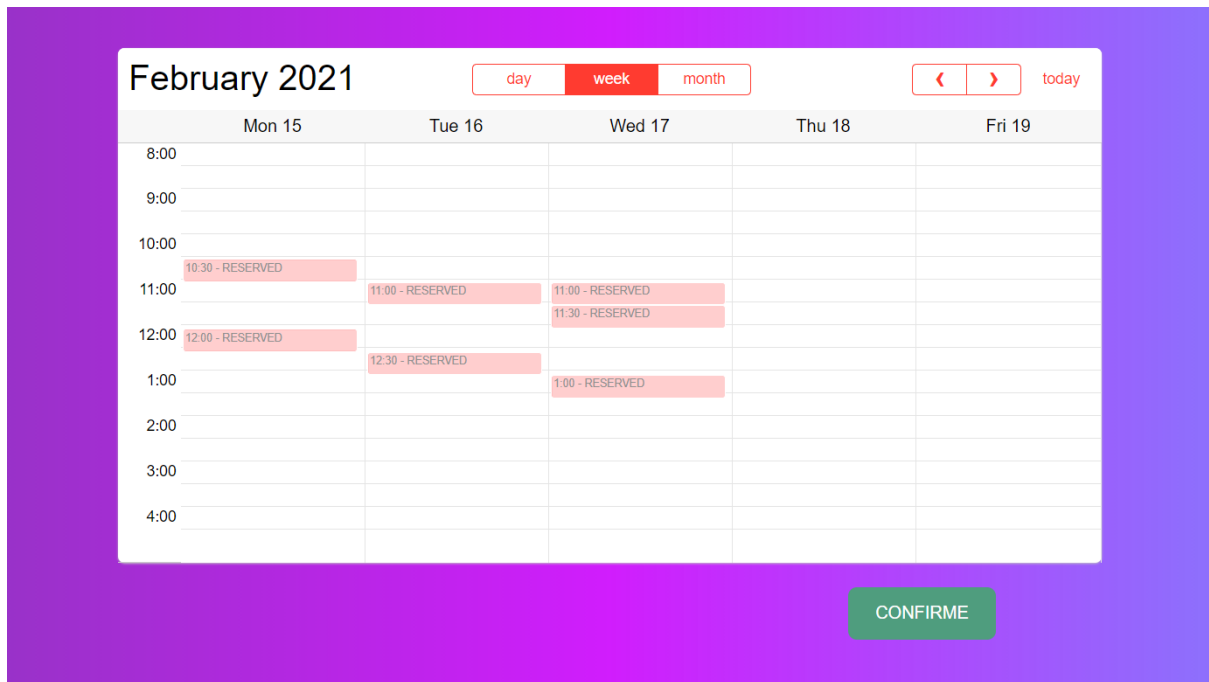


Figure 11 CALENDAR WEEK

In this page you can see the whole week, working hours of course; you can also see these reservations by day or month.

You have to select a time and hit confirm and that's it, your reservation will be successfully made and you'll receive an email confirming your reservation.

### 2.2.3 Edit reservation process

After you clicked on edit reservation button you'll be taken to this page:

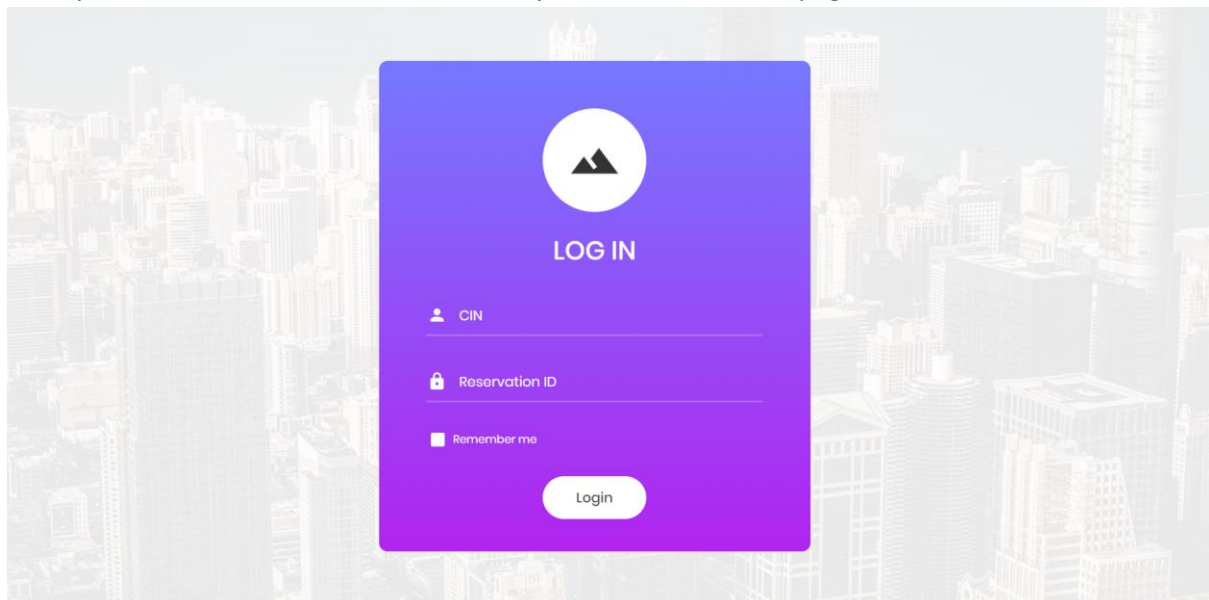


Figure 12 EDIT RRESERVATION LOGIN

Logging in will allow you to edit reservation service and time as you see in figure bellow the other text fields is not editable

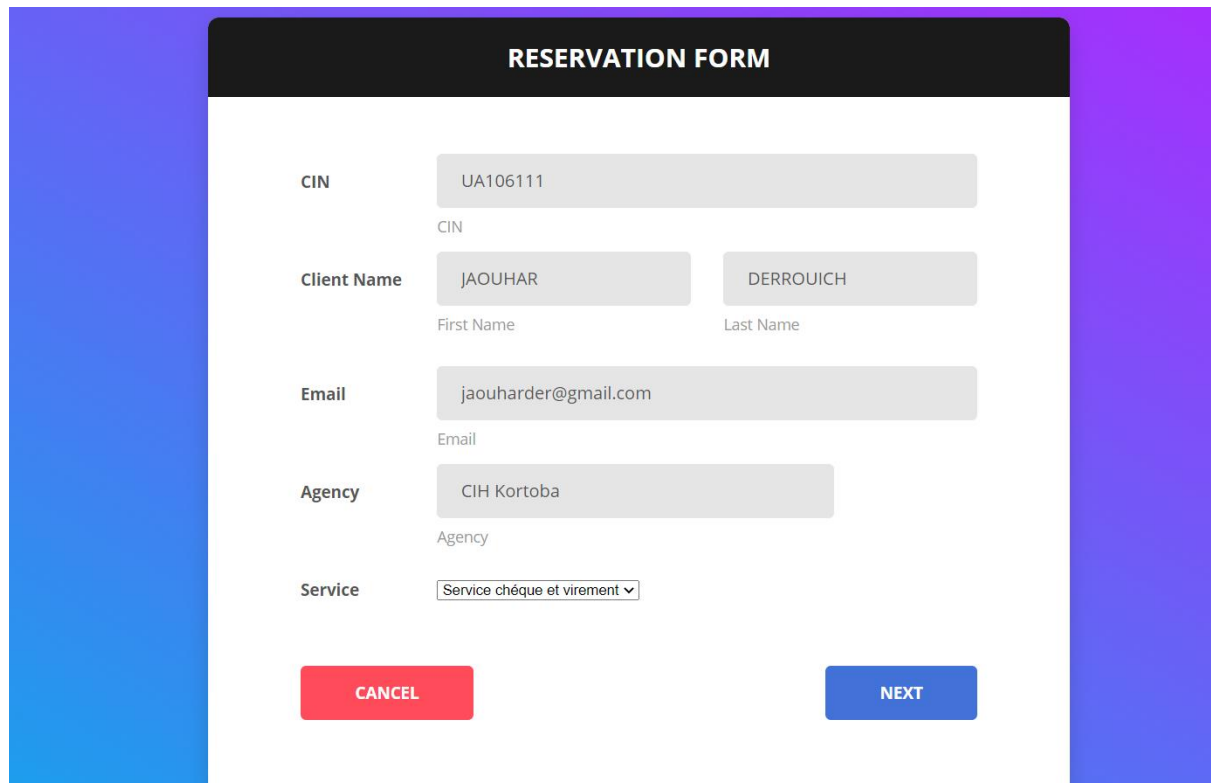
The image shows a 'RESERVATION FORM' interface. It has a black header with the title in white. Below the header, there are several input fields: 'CIN' with the value 'UA106111', 'Client Name' split into 'First Name' ('JAOUHAR') and 'Last Name' ('DERROUICH'), 'Email' with 'jaouharder@gmail.com', 'Agency' with 'CIH Kortoba', and 'Service' with a dropdown menu showing 'Service chèque et virement'. At the bottom, there are two buttons: a red 'CANCEL' button and a blue 'NEXT' button.

Figure 13 EDIT RESERVATION FORM

#### 2.2.4 Employee process

After filling up the fields, password and bureau ID shown in homewagewith valid information you'll be able to see reservations of that day.

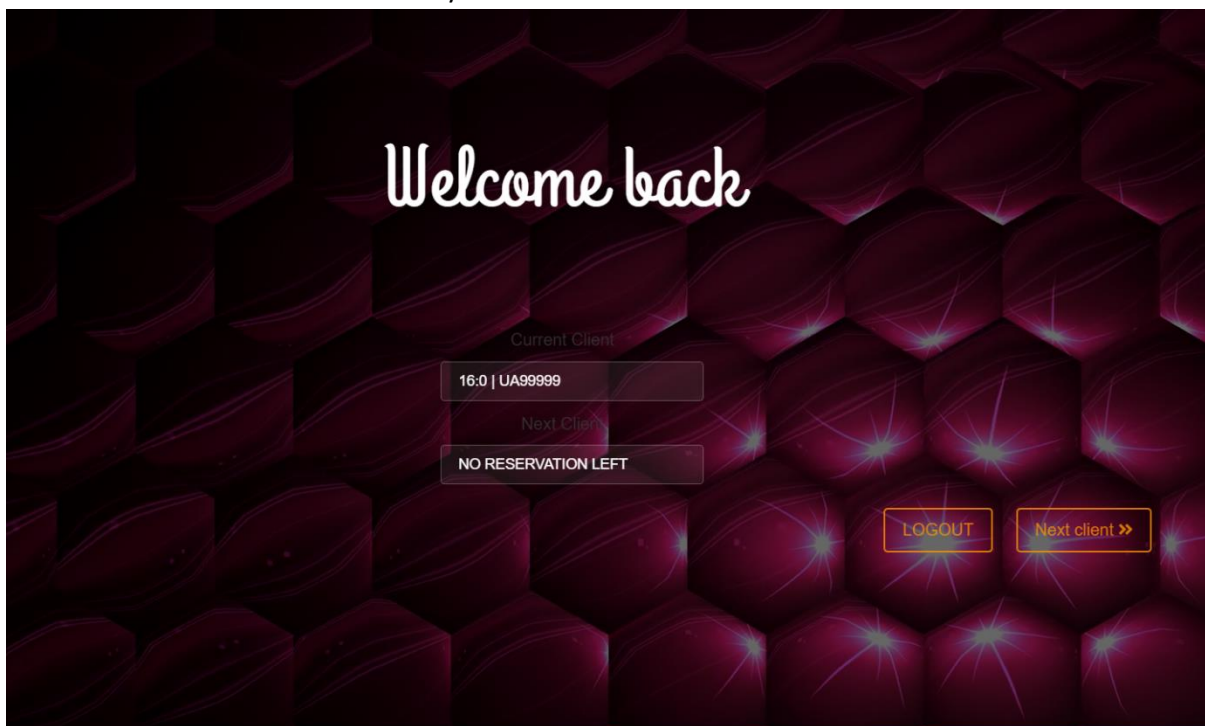


Figure 14 Employee page

On current client you have the time in which that client reserved and his CIN the same thing for the next client but for this bureau there's no reservation left. By clicking on next reservation, you'll see the next client, but also, we record the period that this client has taken so we can eventually optimize our calendar after having a lot of samples, initially the reservation period is 30 minutes but after collecting data we can optimize this to have a more realistic period and adapt our calendar to it.

### 2.2.5 Error handling and popups

In the calendar, if you chose a time this popup will be shown in order to confirm that, because once you've chose your time you can't edit it in that calendar, you'll have to go through edit reservation process.

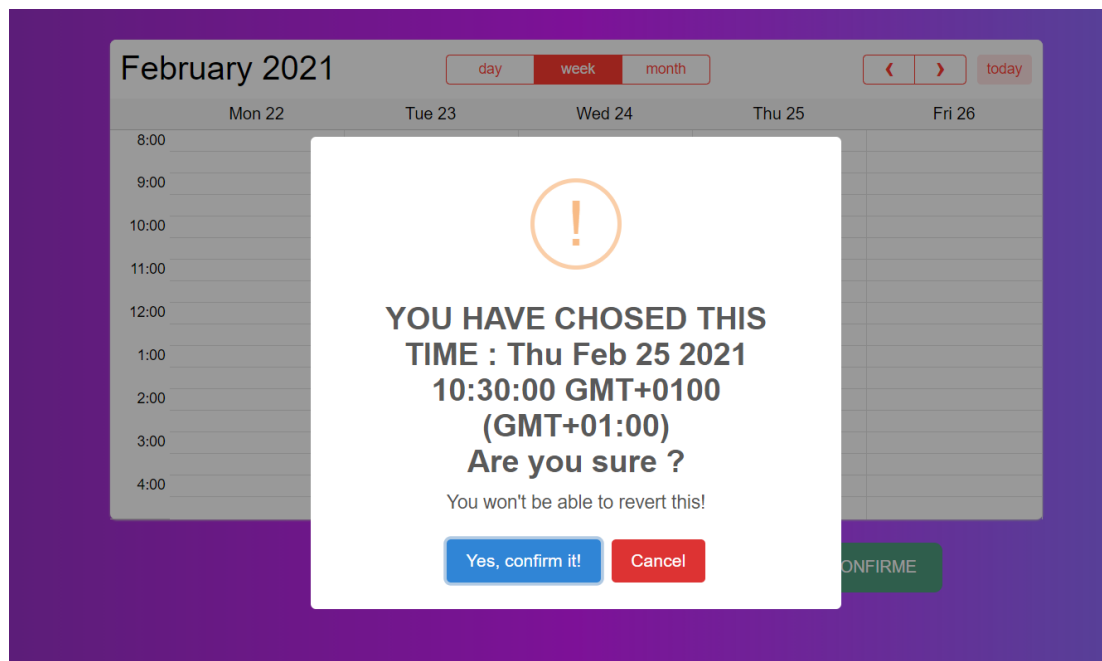


Figure 15 CONFIRM TIME POPUP

And if you try to pick other time this popup will appear

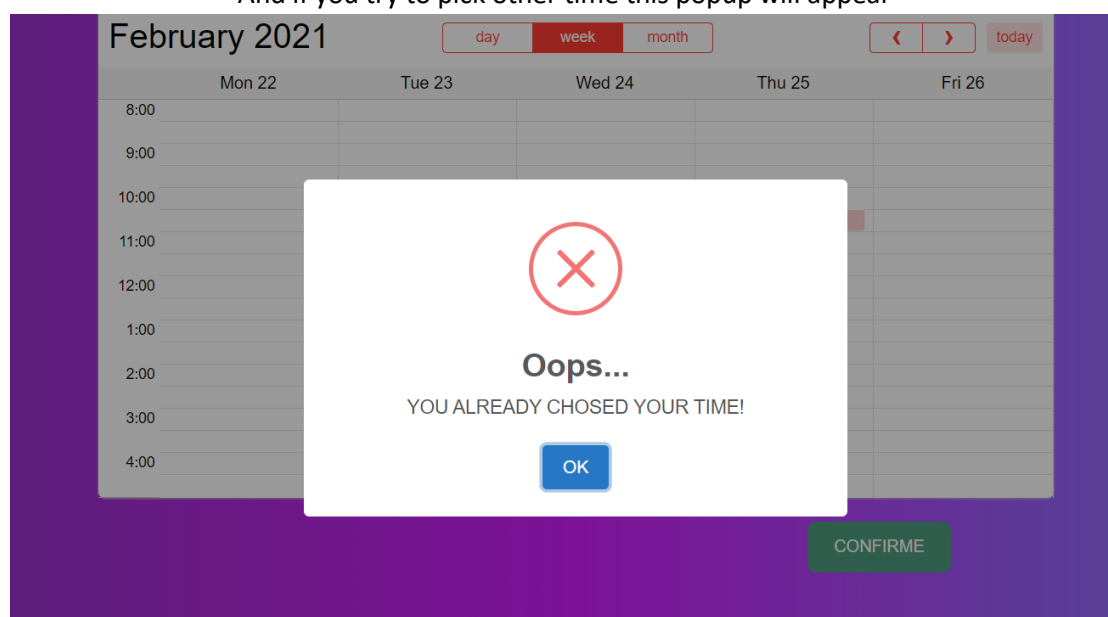


Figure 16 ALREADY CHOSED YOUR TIME POPUP

We also managed invalid login error for edit reservation and login as employee

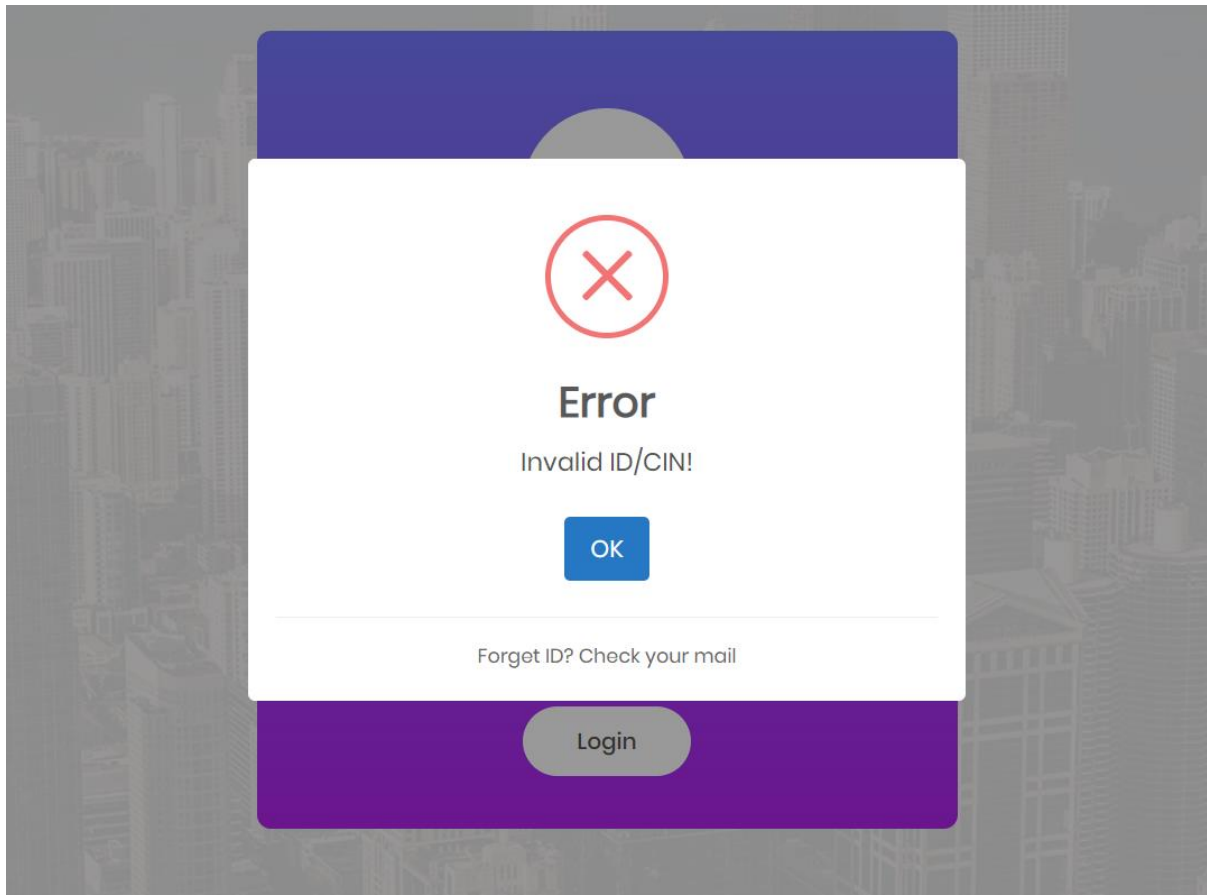


Figure 17 Invalid ID/CIN popup

As we mentioned before, an email we'll be sent when you create a reservation that's why we added Check your mail message.

This is sent mail exemple:

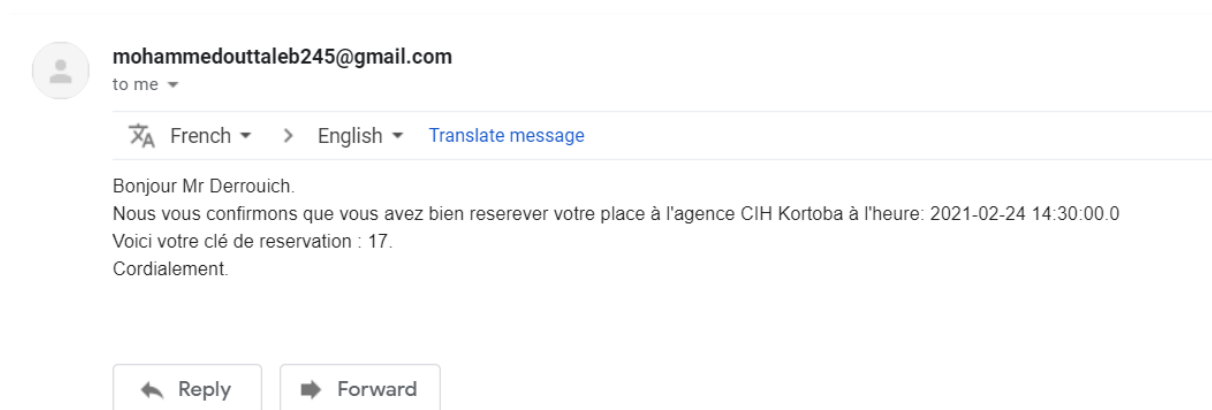


Figure 18 SENT MAIL