Group: Nexus
Project: Employee Nexus

Description
      Employee Nexus is an app designed for employees to be more easily in touch with their employers. The app will have both an android and a web version for easy access from any device. These two frameworks will work with each other by sharing a central database where employee information will be stored.
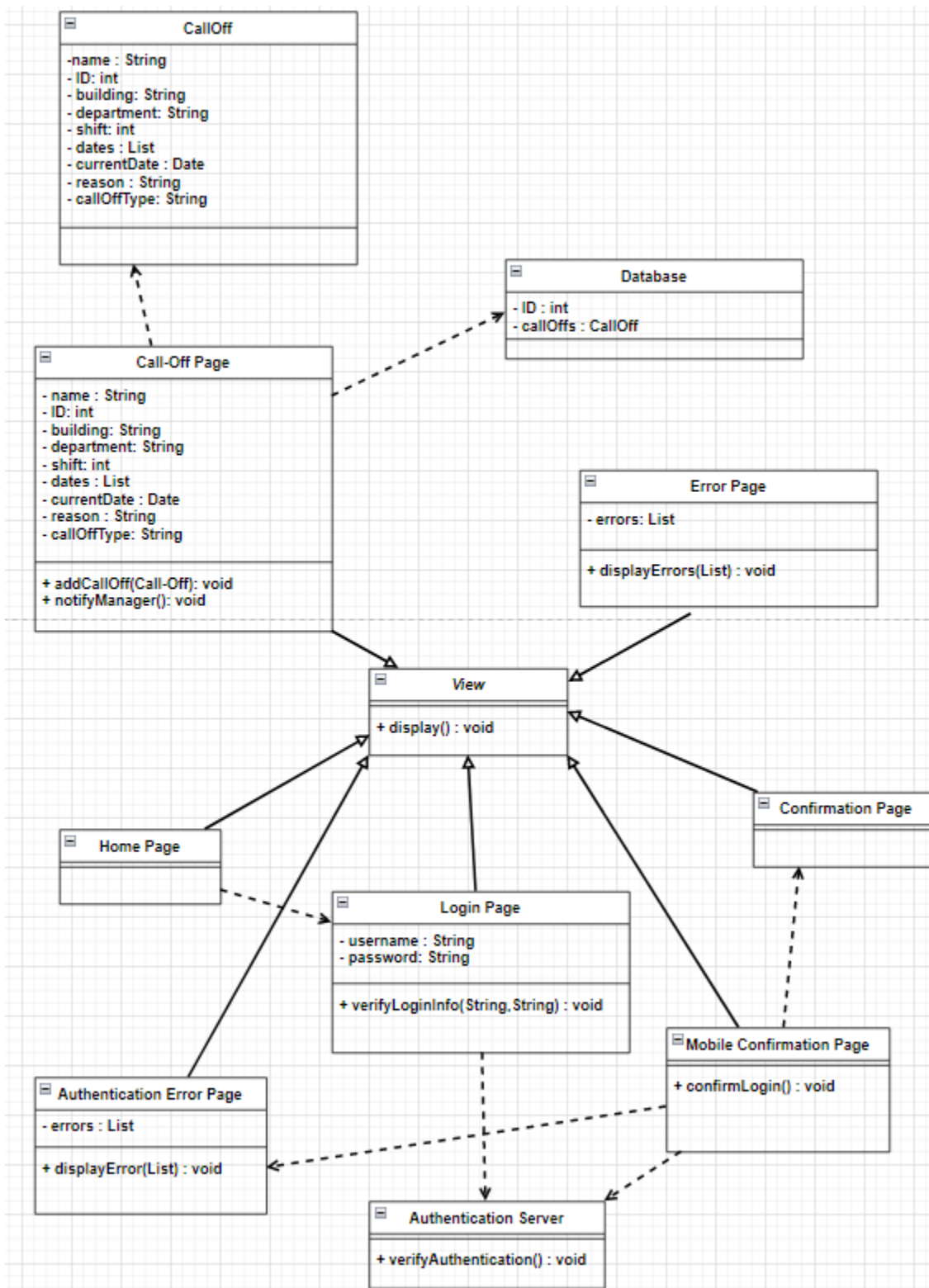
Making an employee portal is not only very convenient for employees to inquire, but also very convenient for employees to ask for leave or adjust the time, and the administrator just needs to notify the corresponding employees after adjusting the schedule.

In addition, it will also include the functions of employee check-in, calculating working hours, publishing employee work content and so on, which will be very helpful for administrators to manage and arrange employees' work.

Section of Framework / Architecture
-Use of Android Studio for App Development
-React for Web Development
-Google Firebase Cloud Database
-Github for hosting files

Static Class Diagram

CallOff
- -name : String
- - ID: int
- - building: String
- - department: String
- - shift: int
- - dates : List
- - currentDate : Date
- - reason : String
- - callOffType: String

Database
- - ID : int
- - callOffs : CallOff

Call-Off Page
- - name : String
- - ID: int
- - building: String
- - department: String
- - shift: int
- - dates : List
- - currentDate : Date
- - reason : String
- - callOffType: String

- + addCallOff(Call-Off): void
- + notifyManager(): void

Error Page
- - errors: List

- + displayErrors(List) : void

View
- + display() : void

Home Page

Confirmation Page

Login Page
- - username : String
- - password: String

- + verifyLoginInfo(String,String) : void

Mobile Confirmation Page
- + confirmLogin() : void

Authentication Error Page
- - errors : List

- + displayError(List) : void

Authentication Server
- + verifyAuthentication() : void

Robustness and Sequence Diagrams

Call-Off
by: John Fletcher

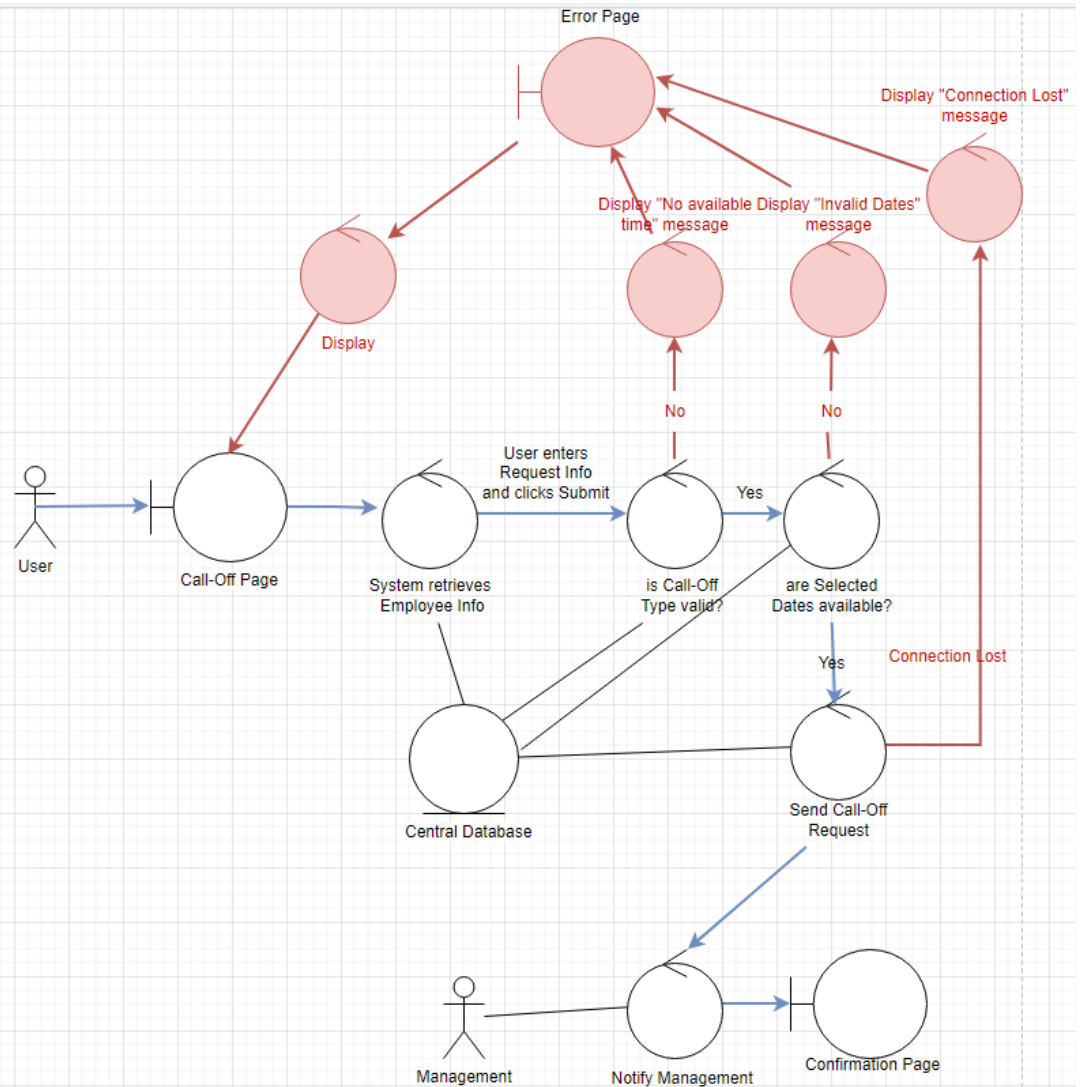**Call-Off (by: John Fletcher)**

BASIC COURSE:

The system displays the Call-Off page with prefilled User Information, such as Name, ID, Building, Department, and Shift. The User enters information such as Reason, Call-Off Type, and Dates, then proceeds to click the Submit button when complete. The system checks if the selected Call-Off Type is available and sends Call-Off to the database and notifies the corresponding Management, then displays a Confirmation message that the Call-Off has been accepted.

ALTERNATE COURSES:

User has no available time to Call-Off: The system displays an Error page. The Error page displays a message stating that the User has no available time for the selected type and asks the User to resubmit with a different Call-off Type, then returns to the Call-Off page.

User does not work Selected Dates: The system displays an Error page. The Error page displays a message stating that the User does not work the selected Dates asks the User to resubmit with a different Dates, then returns to the Call-Off page.

Connection is lost during submission: The system displays an Error page. The Error page displays a message stating the connection was lost to the internet, informs the User to try again when the connection is reestablished, then returns to the Call-Off page.

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by: John Fletcher

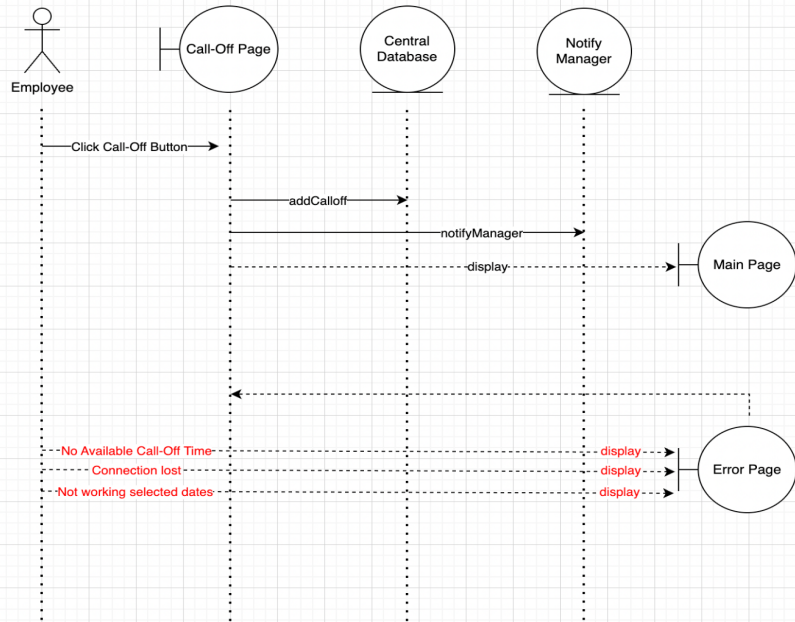**Call-Off (by: John Fletcher)**

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Employee — Click Call-Off Button → Call-Off Page

Call-Off Page — addCalloff → Central Database

Central Database — notifyManager → Notify Manager

Notify Manager — display → Main Page

No Available Call-Off Time — display → Error Page
Connection lost — display
Not working selected dates — display

Login With 2FA
by: Ethan Stoner

BASIC COURSE:

On the Homepage, the user clicks the Log In button, and the system shows the Login Page. The user enters their username and password, and clicks the Login button. The system ensures that the username exists, and that the password is correct for the given username. The system then sends a message to the Authentication server, then shows a Mobile Confirmation page. The user opens the mobile application and confirms their login, and the system sends a confirmation message to the Authentication server. The system displays a Confirmation page, and then the Homepage.

ALTERNATE COURSES:

User does not have the mobile application: The system sends an e-mail message to the user's e-mail address containing a confirmation code, then shows the Confirmation Code Entry Page. The user enters the confirmation code, and the system confirms and displays Confirmation Page.
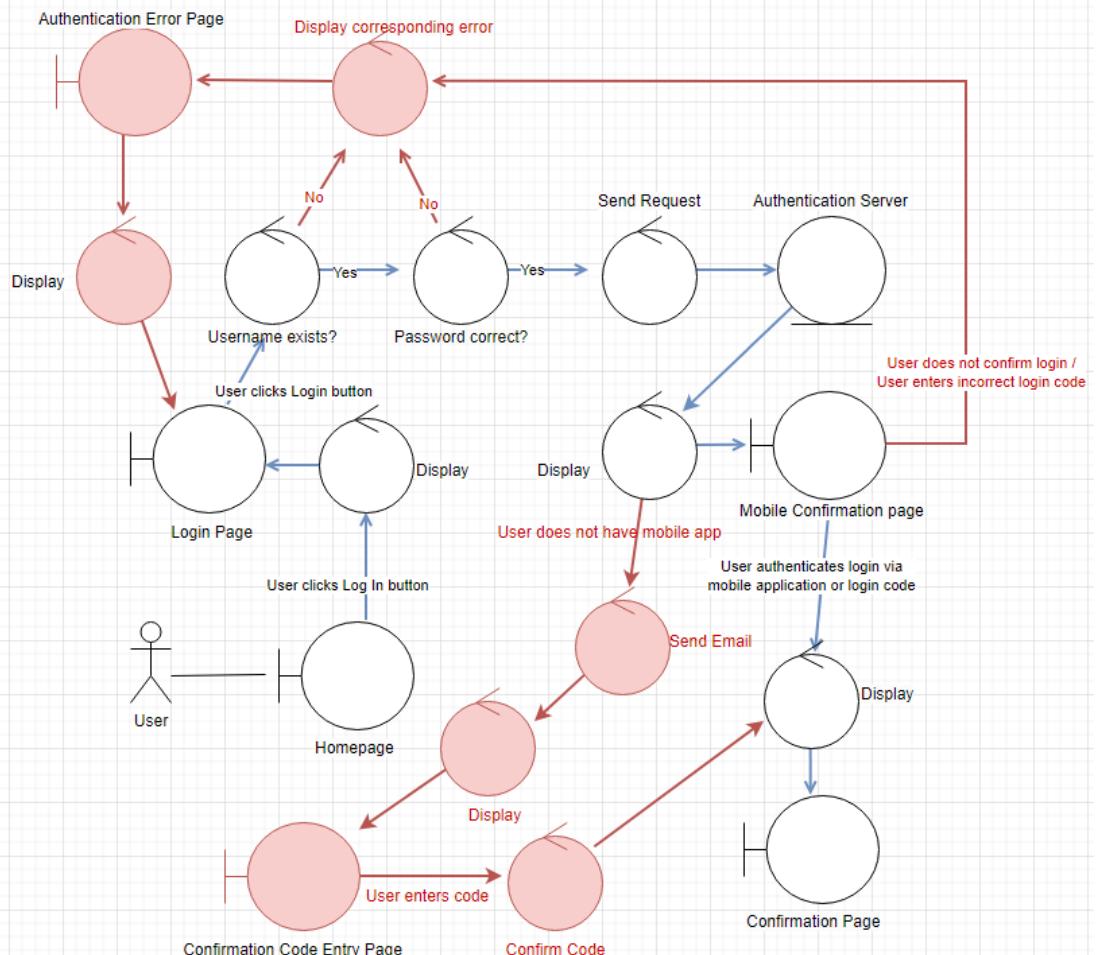
Username does not exist:
The system displays an Authentication Error page, and returns to the Login screen.

Password is incorrect:
The system displays an Authentication Error page, and returns to the Login screen.

User does not confirm login:
The system sends a rejection message to the Authentication server and displays an Authentication Error page, then returns to the Login screen.

User enters incorrect confirmation code: The system sends a rejection message to the Authentication server and displays an Authentication Error page, then returns to the Login screen.

Authentication Error Page — Display corresponding error

Username exists? — No
Password correct? — No
Yes — Yes
Send Request — Authentication Server

Display

User clicks Login button

Login Page

User does not confirm login / User enters incorrect login code

User clicks Log In button

Mobile Confirmation page

User does not have mobile app — Send Email

User authenticates login via mobile application or login code

User

Homepage

Display

Confirmation Code Entry Page — User enters code — Confirm Code — Display

Confirmation Page

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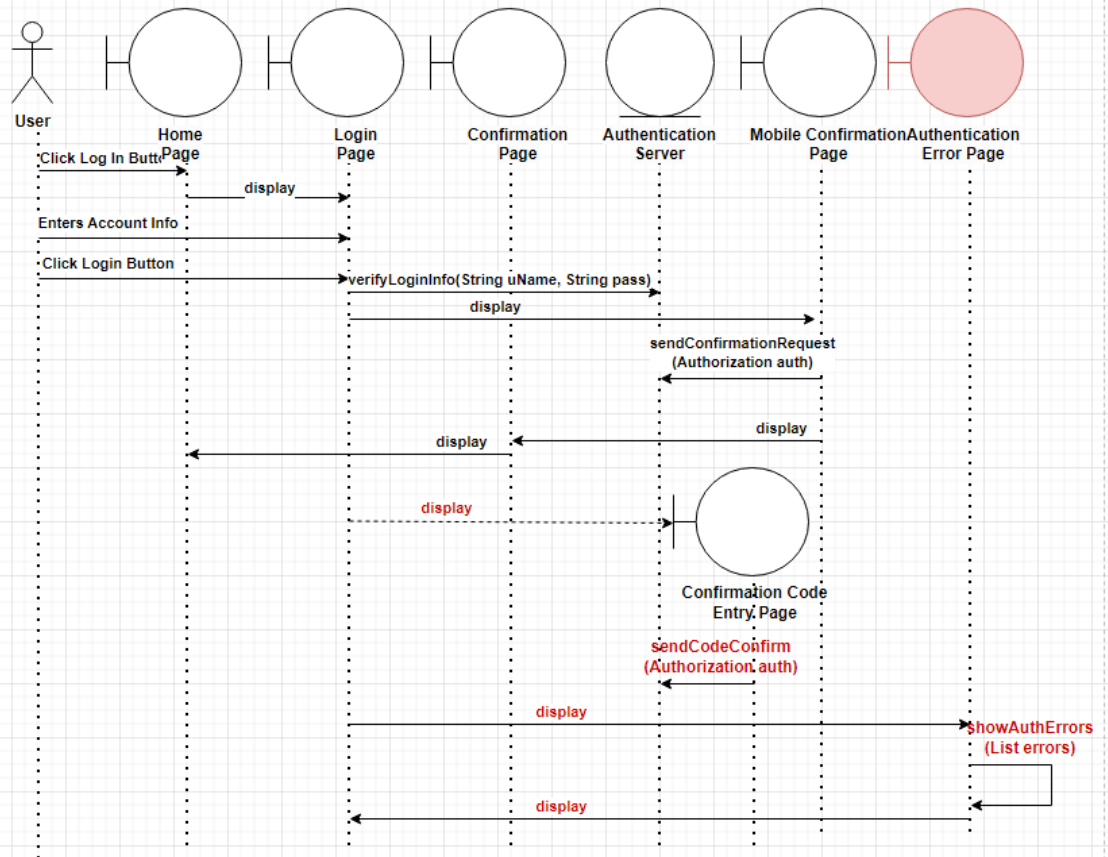
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Lifelines: User, Home Page, Login Page, Confirmation Page, Authentication Server, Mobile Confirmation Page, Authentication Error Page

Click Log In Button
display
Enters Account Info
Click Login Button
verifyLoginInfo(String uName, String pass)
display
sendConfirmationRequest (Authorization auth)
display
display
display

Confirmation Code Entry Page

sendCodeConfirm (Authorization auth)
display
ShowAuthErrors (List errors)
display

Add-Employee
by: ZhaokaicXie

BASIC COURSE:

In the Main Page, the User clicks Add Button, the system displays Add Employee Page. The User enters Account Information including the Employee's real Name, Employee ID, Email, Date of Birth, etc. And then click Add Button. The system ensures that the Employee's ID is unique by accessing Master Account List. The system then adds Employee Account to Master Account List. The system displays "Success" message on the Account Confirmation Page and sends an email to the Employee's Email about the Account information that get from Employee Account and includes a temporary password.

ALTERNATE COURSES:

Employee's ID already exists: The system displays the "ID already exists" message on Error Page. And displays Add Employee Page again.

Email address is invalid: The system displays the "Please enter a valid email address" message on Error Page. And displays Add Employee Page again.

Display

Add Employees Page

Display

User clicks Add Button

Enter Account Information

User

Main Page

Yes

is Email valid?

Display "Please enter a valid email address" message

No

Yes

is ID unique?

No

Display "ID already exists" message

Error Page

Yes

Master Account List

Create new Employee Account

Employee Account

Send account Information

Display "Success" message

Account Confirmation Page

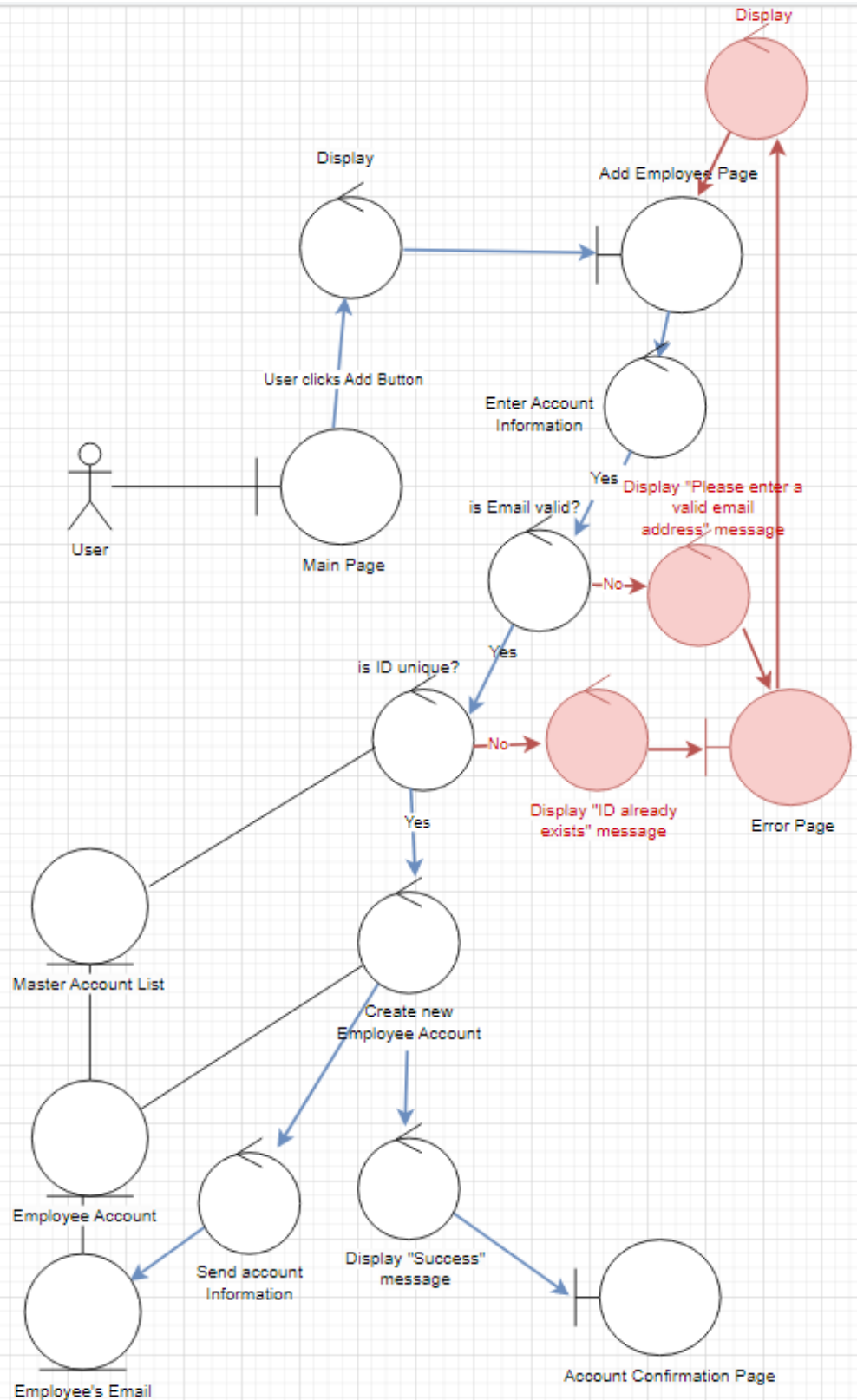Employee's Email
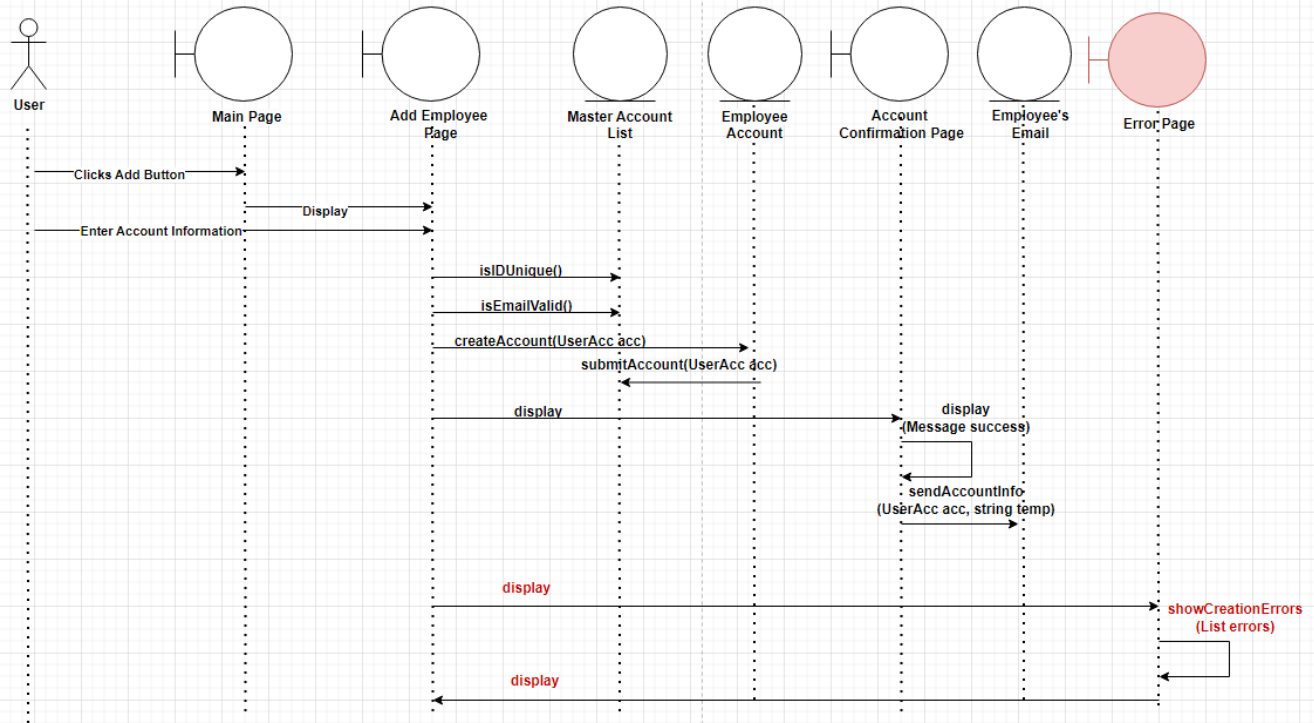
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Weekly Software Process Schedule

		Development Plan	Test and Demonstration Plan
Nov	9		• Pitch Idea
	16	• Use Case Diagrams • Domain Model • High-Level Requirements • Use Case Text • GUI Template	
	30	• Selection of Framework • Class Diagram • Robustness Diagrams • Sequence Diagrams	
Dec	7	• First Prototype Completed	
	14		• Present Prototype

Gantt Chart

TASK TITLE	WEEK 12					WEEK 13					WEEK 14					WEEK 15					WEEK 16				
	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F
Pitch Idea	█	█	█	█	█	░	░	░	░	░						░	░	░	░	░					
Use Case Diagrams						█	█	█	█	█						░	░	░	░	░					
Domain Model						█	█	█	█	█						░	░	░	░	░					
High-Level Requirements						█	█	█	█	█						░	░	░	░	░					
Use Case Text						█	█	█	█	█						░	░	░	░	░					
GUI Template						█	█	█	█	█						░	░	░	░	░					
Selection of Framework						░	░	░	░	░	█	█	█	█	█	░	░	░	░	░					
Class Diagram						░	░	░	░	░	█	█	█	█	█	░	░	░	░	░					
Robustness Diagrams						░	░	░	░	░	█	█	█	█	█	░	░	░	░	░					
Sequence Diagrams						░	░	░	░	░	█	█	█	█	█	░	░	░	░	░					
First Prototype						░	░	░	░	░						█	█	█	█	█					
Presentation						░	░	░	░	░						░	░	░	░	░	█	█	█	█	█