SAUDI PUBLIC COMMUNICATIONS

Software engineering 1

FUNCTIONAL REQUIREMENTS

1. A user shall be able to create an account.

1.1 The system shall provide a registration form.

1.2 The system shall validate the user register information.

1.3 The system shall add new customers by entering their details such as name, contact information, and billing address.

1.4 The system shall display a confirmation message to the user.

2. A user shall be able to log in.

2.1 The system shall provide a login form.

2.2 The system shall validate the user login information.

2.3 The system shall search in database if the user information exist.

2.4 If the information found, the system shall display a welcoming message to the user.

2.5 If the information was not found, the system shall ask the user to try again.

2.6 The system shall allow users to log out.

2.7 the employee shall be sent a unique number to distinguish an employee login form from a regular user one.

FUNCTIONAL REQUIREMENTS

3. A user shall be able to view and subscribe to the available telecommunication bundles.

3.1 The system shall display all the bundles with their features.

3.2 The system shall notify users about subscribed services and upcoming renewals.

3.3 The system shall add the user subscription information in the database.

3.4 The system shall send a verification message when the user subscribes to any bundle.

4. The user (manager) shall be able to print monthly reports showing how many customers each employee served.

4.1 When an employee serves a customer, the system shall add the customer into the employee record.

4.2 The system shall add a bonus (determined by the manager) to employees per customer they served.

4.3 The system shall calculate the amount of bonus each employee deserves.

4.4 The system shall allow managers to print a report showing the employees, the number of customers they served, the bonus ratio, and the total bonus they deserve.

FUNCTIONAL REQUIREMENTS

5. A user can request for maintenance, installation, or other local services.

5.1 The system shall receive the request and create a service order contains details such as the requested service type, customer information and
location.

5.2 The system shall assign resources to fulfill the service request. This could include technicians, engineers, or other personnel with the required skills and availability.

6. A user (employee) shall be able to review the local services requested by the user.

6.1 The system shall display the service request’s details

6.2 The system shall display the service completion details and test results.

FUNCTIONAL REQUIREMENTS

7. A user shall be able to file a complaint as well as track its status and receive updates on its resolution.

7.1 The system shall allow users to submit complaints through various channels (e.g., phone, email, online form).

7.2 The system shall categorize the complaint into the appropriate category (e.g., bundle subscription, local service, payment).

7.3 The system shall update the complaint status and provide resolution updates within an hour.

8. A user (employee) shall handle a complaint.

8.1 The system shall notify employees when a new complaint is filed.

8.2 The system shall automatically assign an employee according to the complaint category and employees' availability.

NON FUNCTIONAL REQUIREMENTS

- **Security**: The system should have secure login and access controls to ensure that only authorized employees and customers can access the system.

- **Reliability**: The system shall be reliable and available 24/7 with minimal downtime time that shall not exceed five seconds.

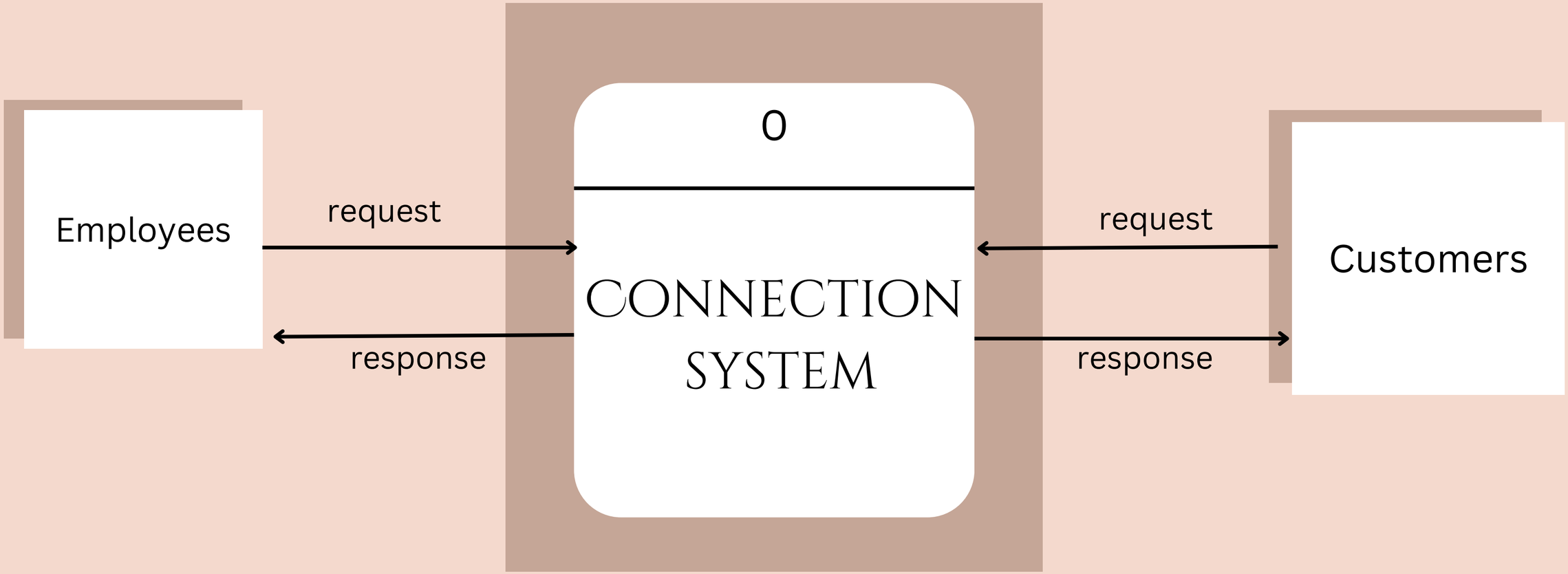
- **User-Friendly Interface**: The system should have an intuitive and user-friendly interface that is easy to navigate. The average number of errors for experienced users shall not exceed 2 per hour of system use for both employees and customers.

- **Scalability**: The system shall be scalable to accommodate future growth and expansion of the telecommunication company.

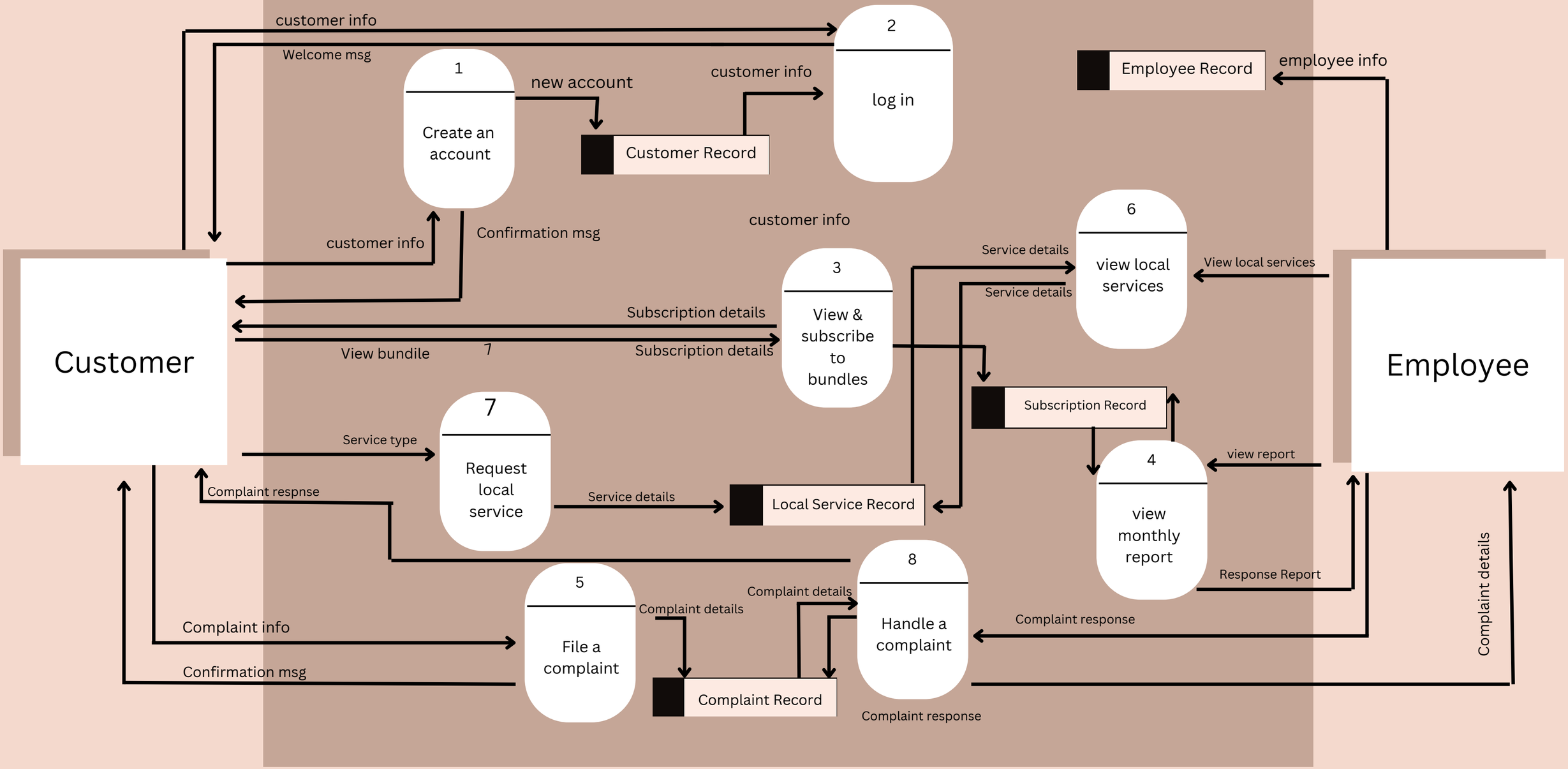
- **Accessibility**: The system shall be accessible from multiple devices and platforms, such as desktop computers, laptops, tablets, and smartphones.

- **Performance**: The system has a processing speed of 500MP/second, with a response time of 0.1 second, giving the user a seamless and responsive experience.

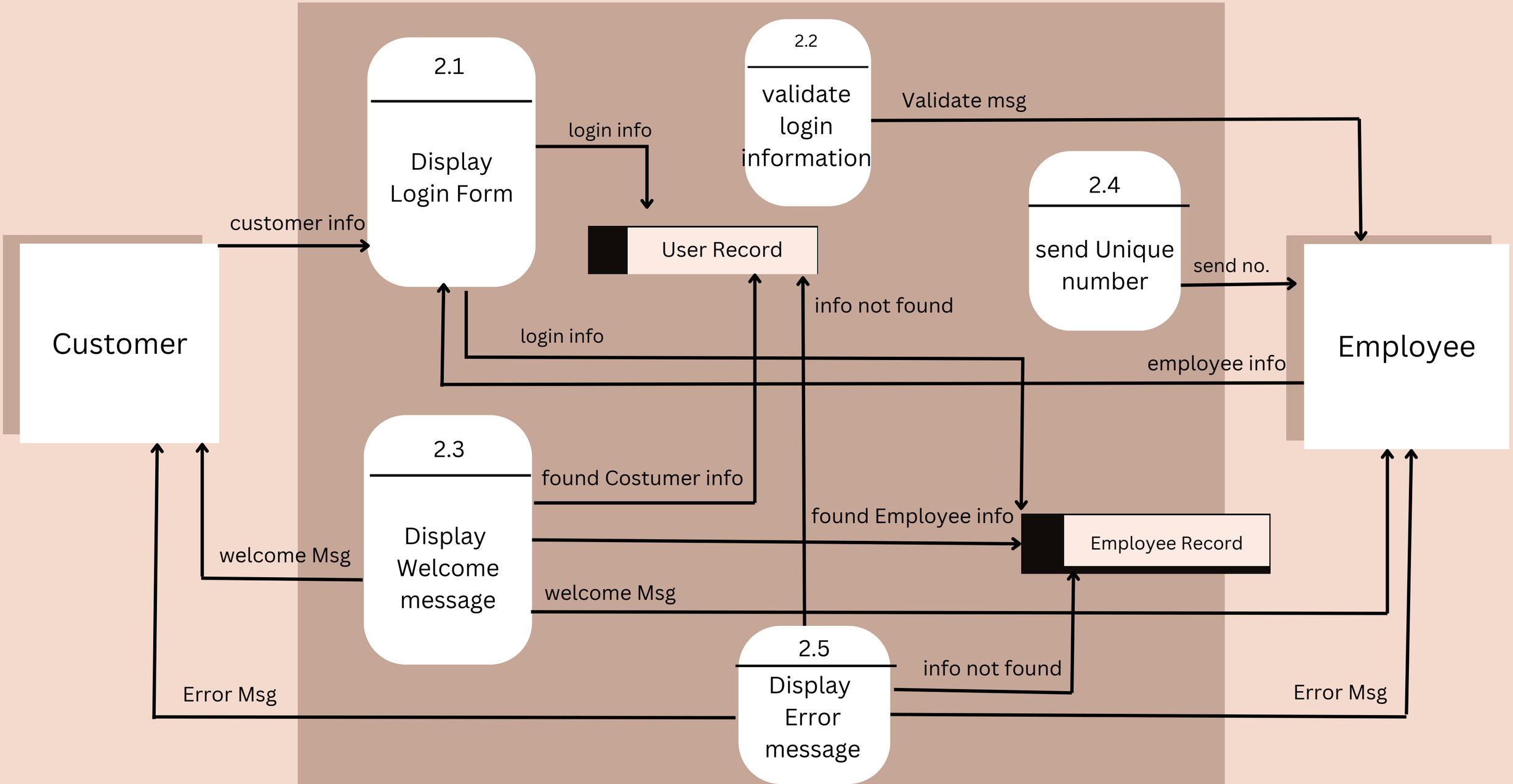
LEVEL 0 - CONTEXT DIAGRAM



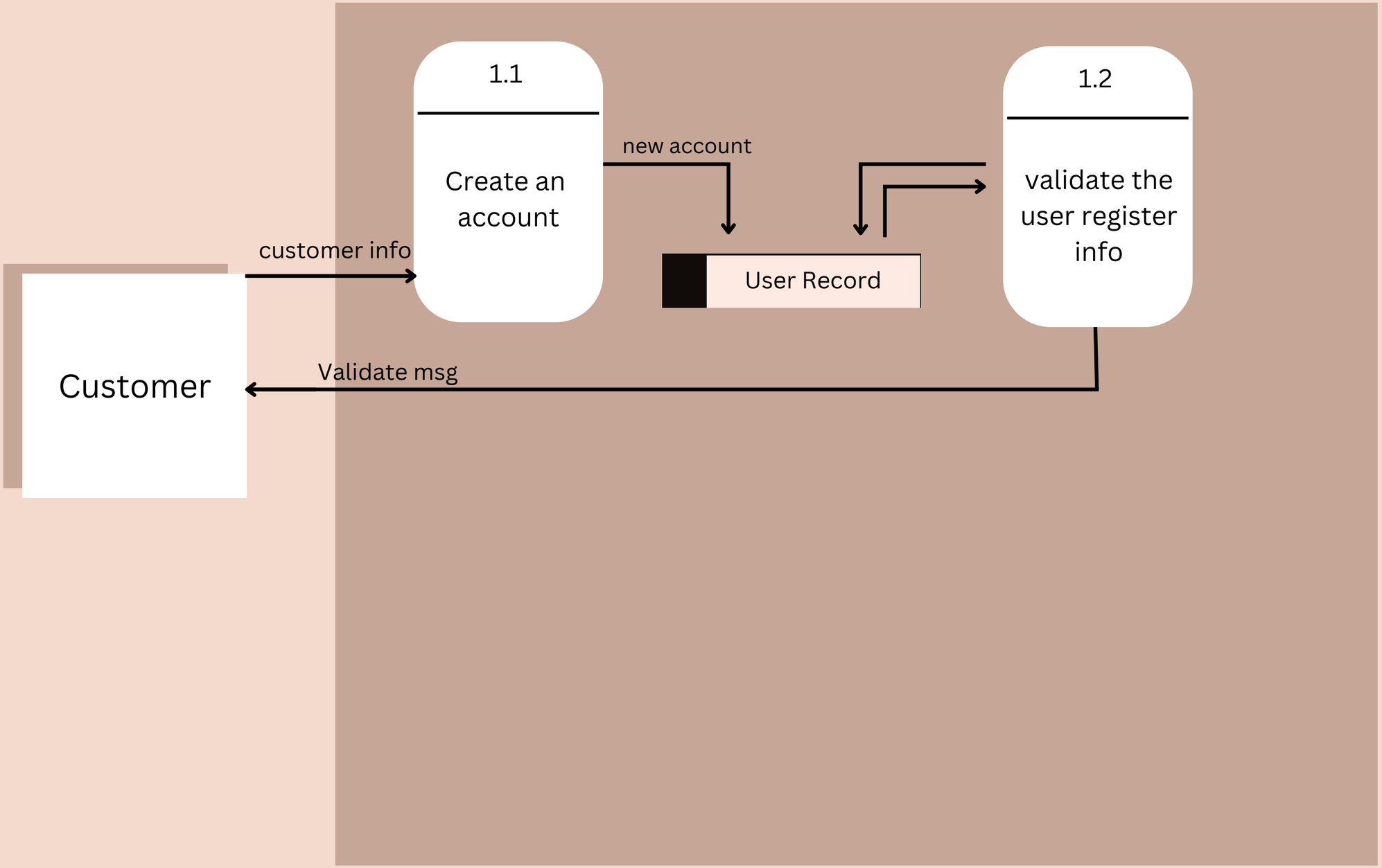
LEVEL 1 - DFD


customer info
Welcome msg
1
Create an account
new account
Customer Record
customer info
2
log in
Employee Record
employee info
customer info
Confirmation msg
customer info
Customer
Subscription details
View bundile
7
Subscription details
3
View & subscribe to bundles
Service details
Service details
6
view local services
View local services
Employee
Subscription Record
7
Service type
Request local service
Service details
Local Service Record
Complaint respnse
view report
4
view monthly report
Response Report
8
Handle a complaint
Complaint details
Complaint details
5
File a complaint
Complaint info
Confirmation msg
Complaint Record
Complaint response
Complaint response
Complaint details
Complaint details

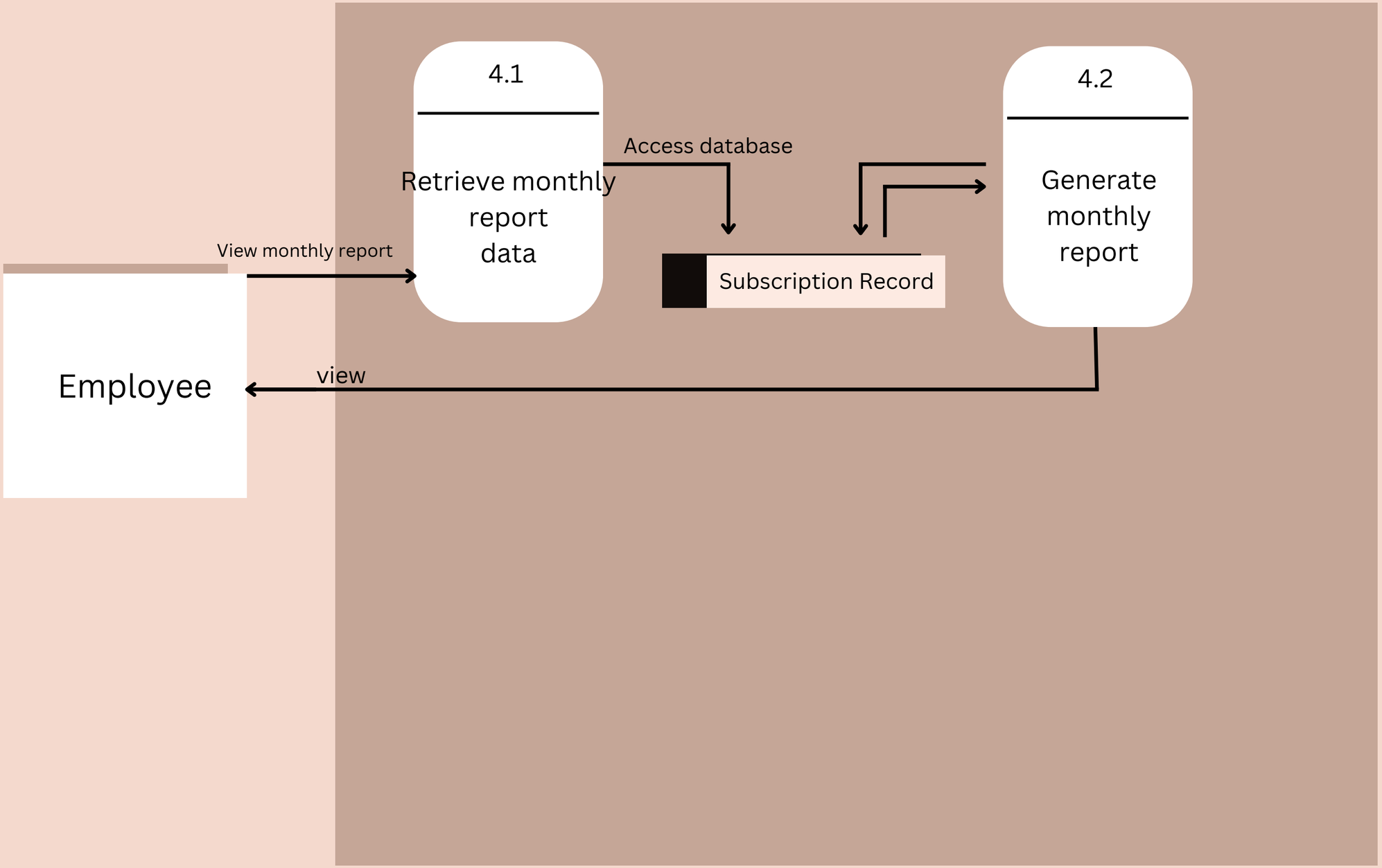
CHILD DFD FOR LOGIN



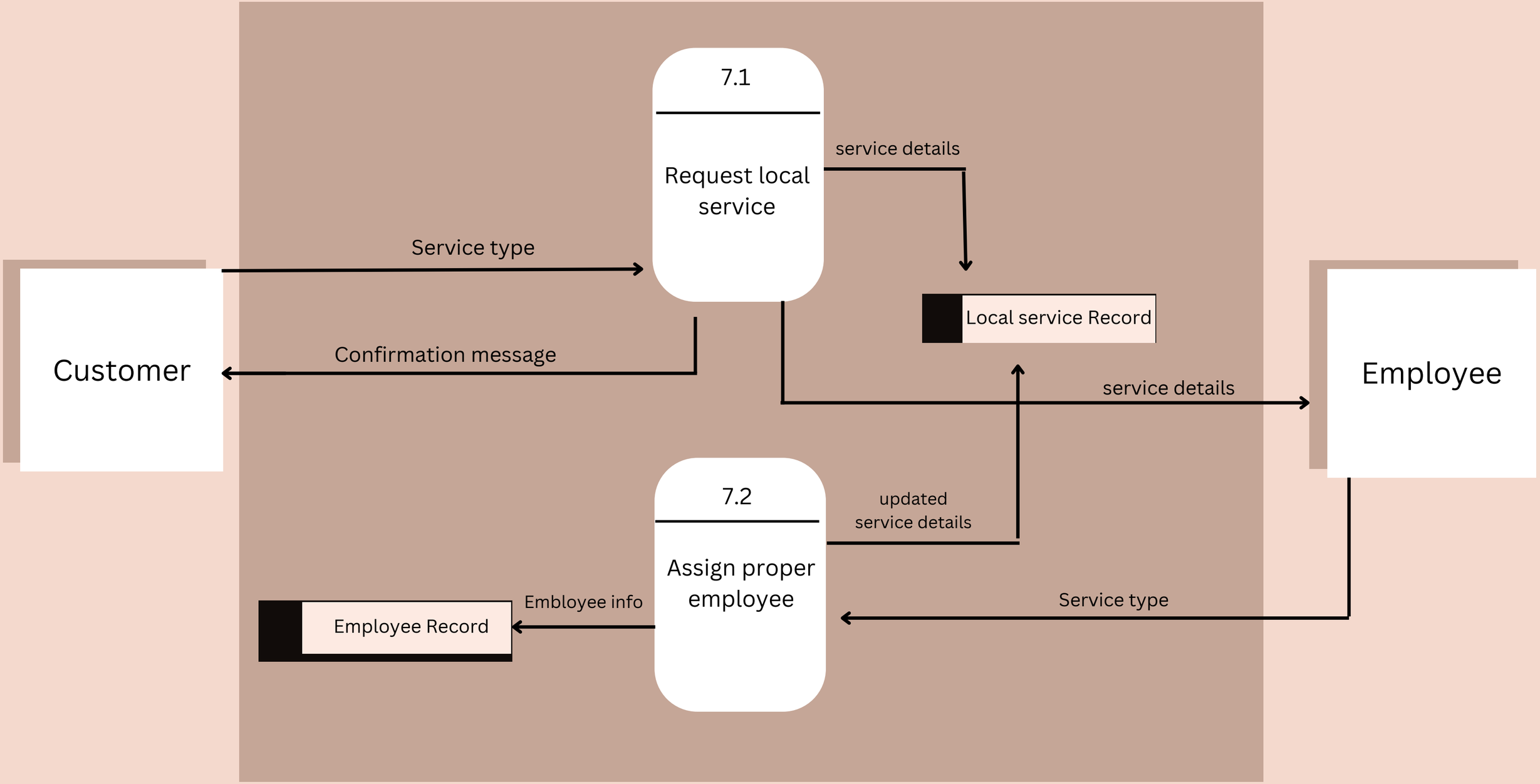
CHILD DFD FOR CREATE ACOUNT



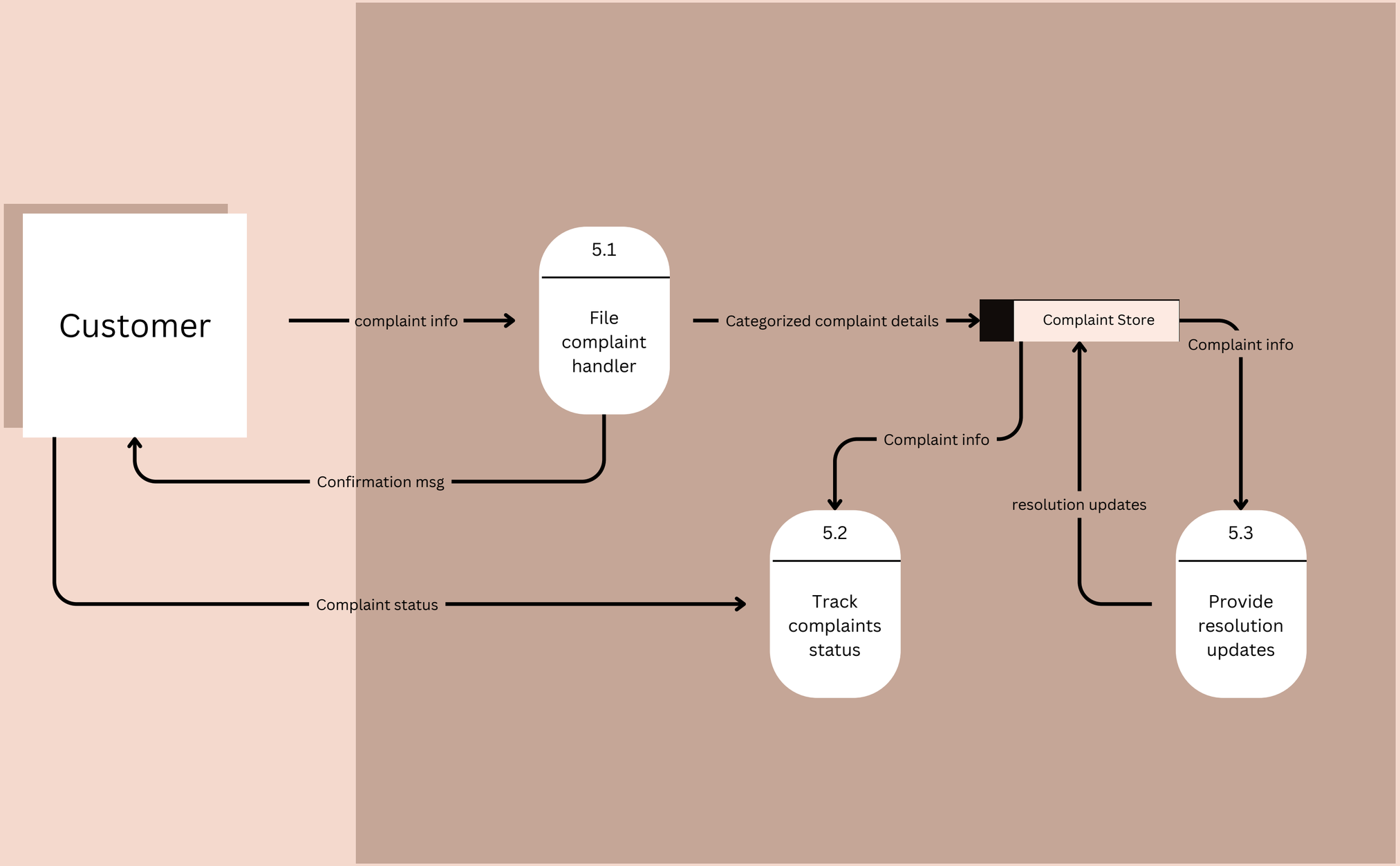
CHILD DFD FOR VIEW MONTHLY REPORT



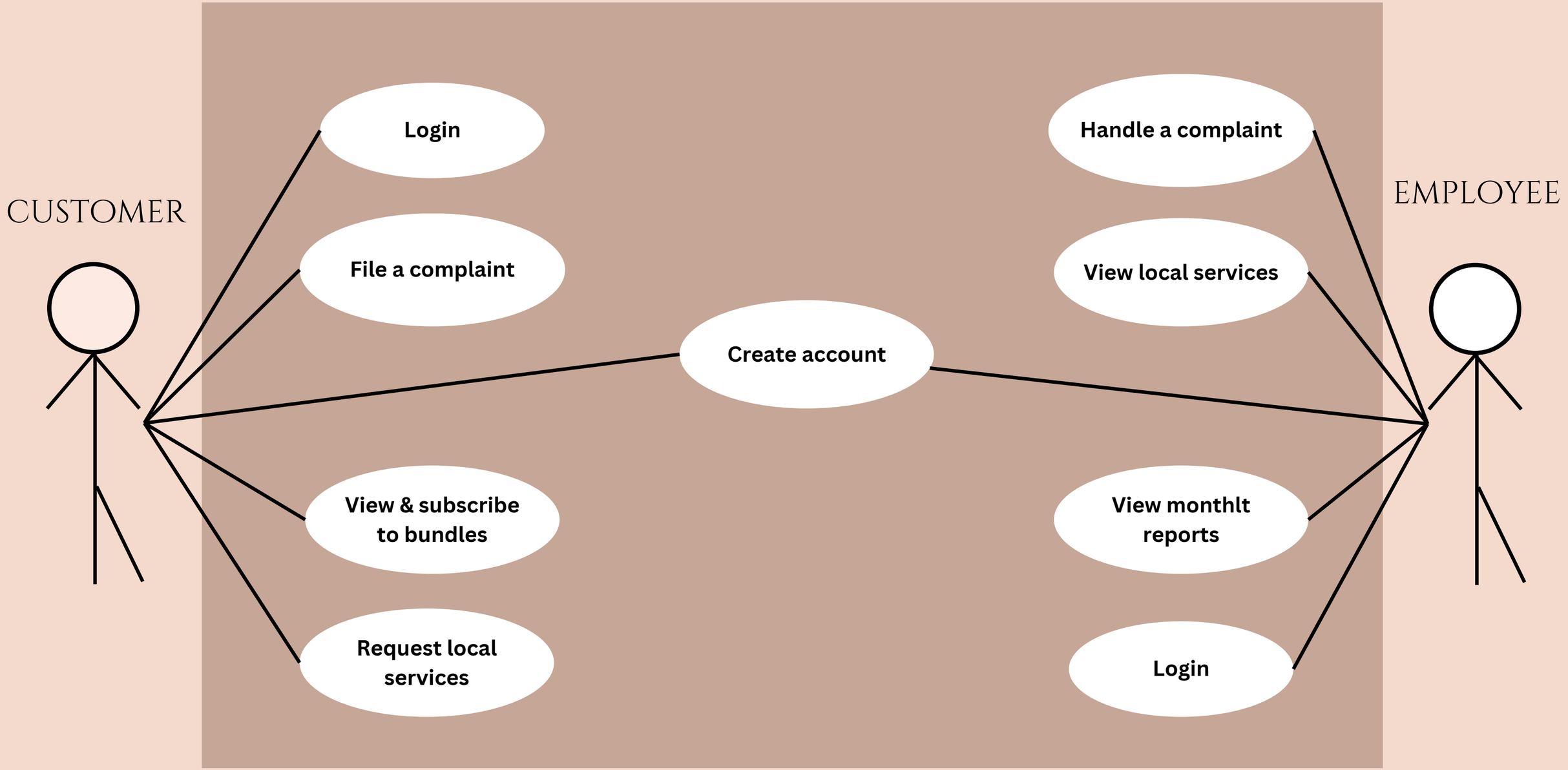
CHILD DFD FOR LOCAL SERVICE



CHILD DFD FOR FILE A COMPLAINT



USE CASE


CUSTOMER
Login
File a complaint
Create account
View & subscribe to bundles
Request local services
Handle a complaint
View local services
View monthlt reports
Login
EMPLOYEE

1-CREATE AN ACCOUNT SCENARIO

Actor	Customer, Emp
Desciption	• The system shall provide a registration form. • The system shall validate the user register information. • The system shall add new customers by entering their details such as name, contact information, and billingaddress. • The system shall display a confirmation message to the user.
Data	Both Customer’s and employee personal information (name, email,password,phone number, address)
Stimulus	customer clicks on create button to create Account after writing their information.
Response	• The system presents a registration form to the customer • The system validates the customer's registration information, ensuring that all required fields are filled and the data is in the correct format . • The system adds the customer as a new customer, storing their details in the system's database. • The system displays a confirmation message to the customer, confirming that their account has been successfully created.
Comments	• The registration form should clearly indicate which fields are required and provide helpful instructions • If any validation errors are found, the system displays error messages next to the respective fields, indicating what needs to be corrected.

2- LOGIN SCENARIO

Actors	**Costumer, Employee**
Description	• The system shall provide a login form. • The system shall validate the user login information. • The system shall search in database if the user information exist. • If the information found, the system shall display a welcoming message to the user. • If the information was not found, the system shall ask the user to try again. • The system shall allow users to log out. • the employee shall be sent a unique number to distinguish an employeeogin form from a user one
Data	**Customer personal infromation, emplyee personal information and their unique number.**
Stimulus	**Customer and employee click on the login form to enter their personal information**
Respose	• Confirmation message will be sent to both customer and employee. • unique number will be sent to the employee.
Comments	**Efficient and quick delivery of verification messages to verify user information.**

3-VIEW&SUBSCRIBE

Actor	**User, Employee**
Desciption	• The system shall display all the bundles with their features. • The system shall notify users about subscribed services and upcoming renewals. • The system shall add the user subscription information in the database. • The system shall send a verification message when the user subscribes to any bundle.
Data	• Information about available bundles and their features. • User information and current subscriptions. • Verification messages and alerts.
Stimulus	• User logs into the system. • User clicks on button to searches for available bundles. • Userclicks on button selects a bundle and subscribes.
Response	• The system displays a list of all available bundles with their features. • The system sends notifications to the user about subscribed services and upcoming renewals. • The system adds user subscription information to the database. • The system sends a verification message when the user subscribes to any bundle.
Comments	• Improving the user experience by ensuring an intuitive and user-friendly interface. • Providing clear and detailed messages to users regarding subscription status and renewals. • Ensuring the security and stability of the database for securely storing user subscription information. • Efficient and prompt delivery of verification messages to verify user information.

4-FILE A COMPLAINT

Actor	Customer
Desciption	• A user shall be able to file a complaint as well as track its status and receive updates on its resolution. • The system shall allow users to submit complaints through various channels (e.g., phone, email, online form). • The system shall categorize the complaint into the appropriate category (e.g., bundle subscription, local service,payment). • The system shall update the complaint status and provide resolution updates within an hour.
Data	• User Information (e.g., name, contact details) • Complaint Details (e.g., category, description) • Complaint Status • Resolution Updates
Stimulus	• User clicks on to fill in complaint. • User clicks to request status update.
Response	• User clicks on the cocomplaint form to receive a response to complaint.
Comments	The system allows customers to provide feedback on the resolution process. Customer feedback is stored in the system for future reference and continuous improvement.

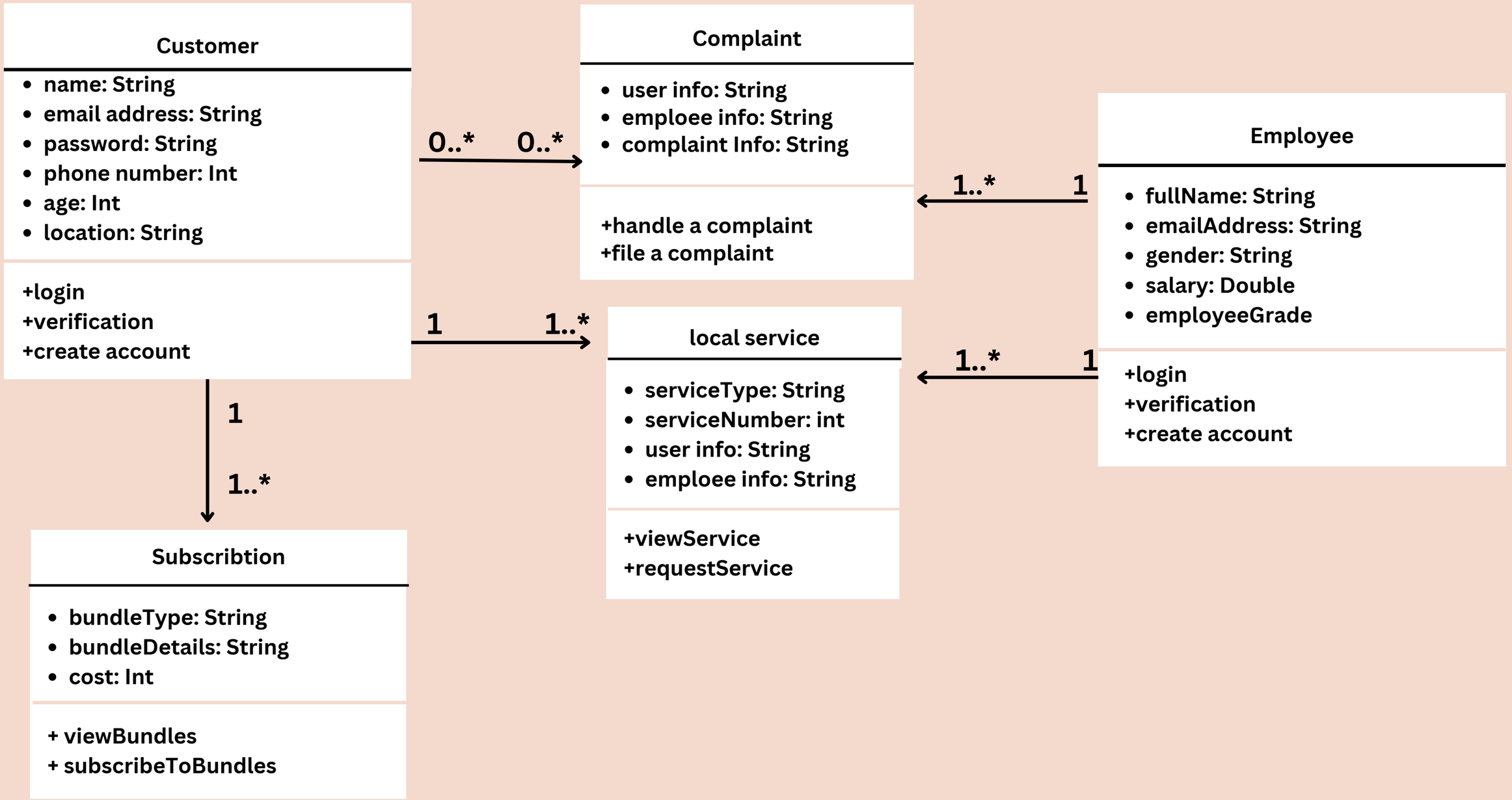
5-HANDLE A COMPLAINT

Actor	**Employee**
Desciption	**This use case involves the user, who is an employee, reviewing local services requested by other users and handling complaints. The system provides functionalities to display service request details, service completion details, test results, as well as notify employees about new complaints. It also automatically assigns employees based on the complaint category and their availability.**
Data	• **Service Request Details: Information about the service requested, such as type, date, time, location, and specific requirements.** • **Service Completion Details: Information about the completed service, including service provider, date and time of completion, test results, and additional notes or documentation.** • **Complaint Category: Categorization of complaints, such as bundle subscription, local service, or payment.**
Stimulus	**The employee interacts with the system to review local services or handle a complaint.**
Response	**Display Service Request Details: The system displays the details of the service request, providing the user with information about the requested service.**
Comments	**The system needs to store and retrieve data related to service requests, service completion details, test results, and complaints.**

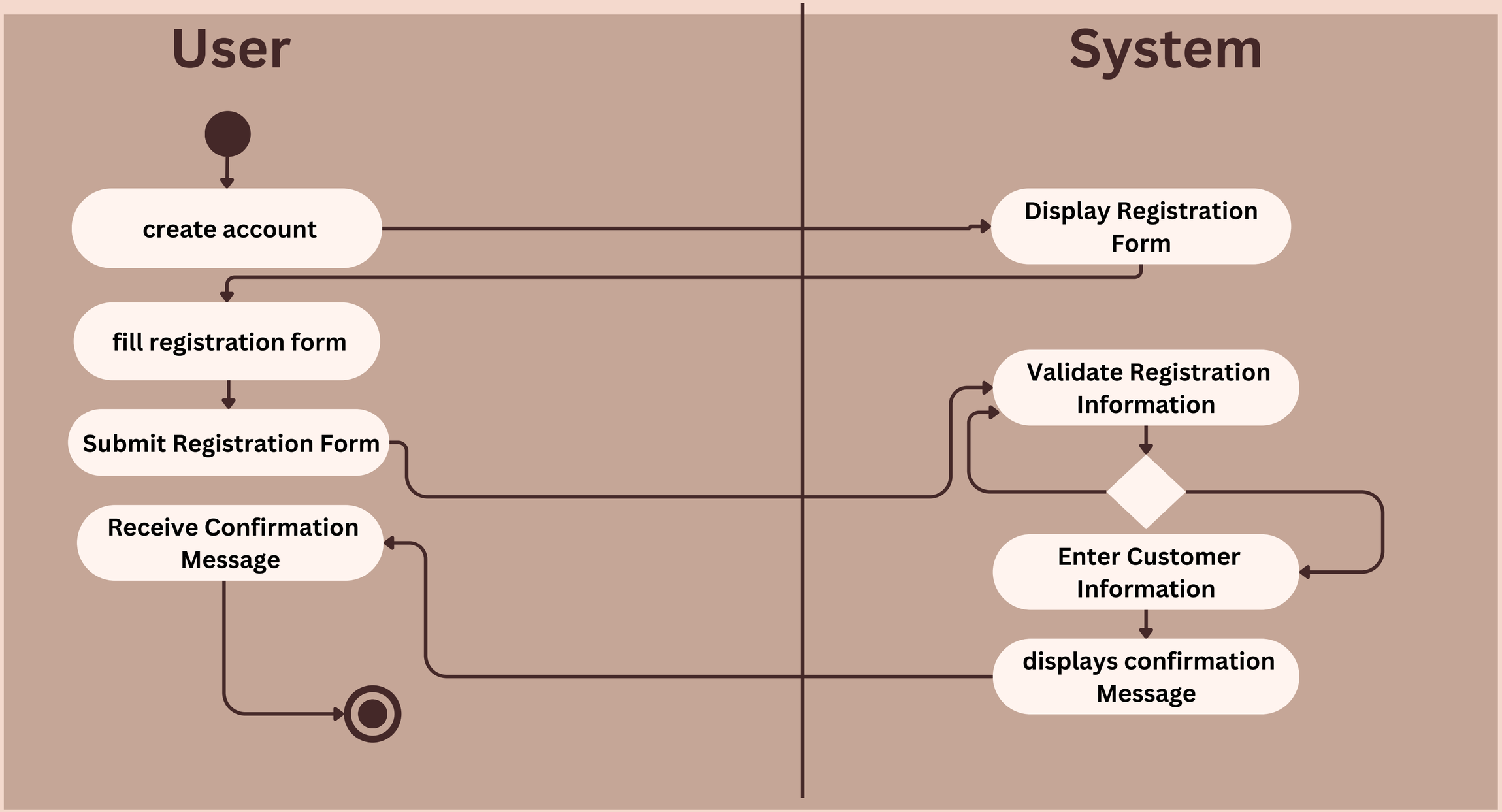
6- REQUEST LOCAL SERVICE

Actor	User, Employee
Desciption	The user can request for maintenance, installation, or other local services.
Data	• Information about the requested service type. • User information and location. • Verification messages and alerts.
Stimulus	• User logs into the system. • User searches for available local services. • User selects a service and make a request.
Response	• The system displays a list of all local services. • The system sends confirmations message when new service requested. • The system adds service information to the database.
Comments	• Improving the user experience by ensuring an intuitive and user-friendly interface. • Providing clear and detailed messages to users regarding their service request. • Efficient and prompt delivery of confirmation messages.

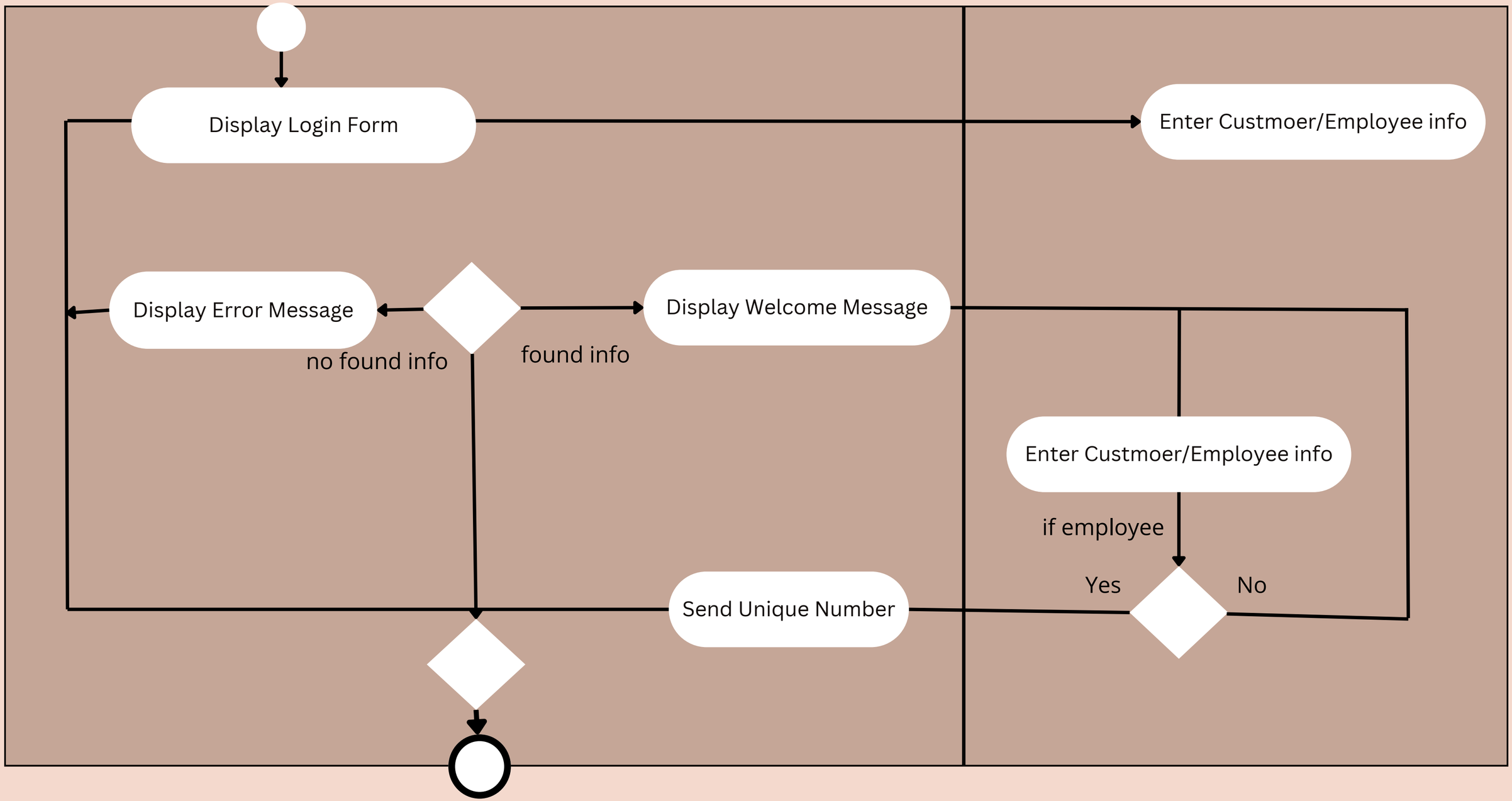
CLASS DIAGRAM



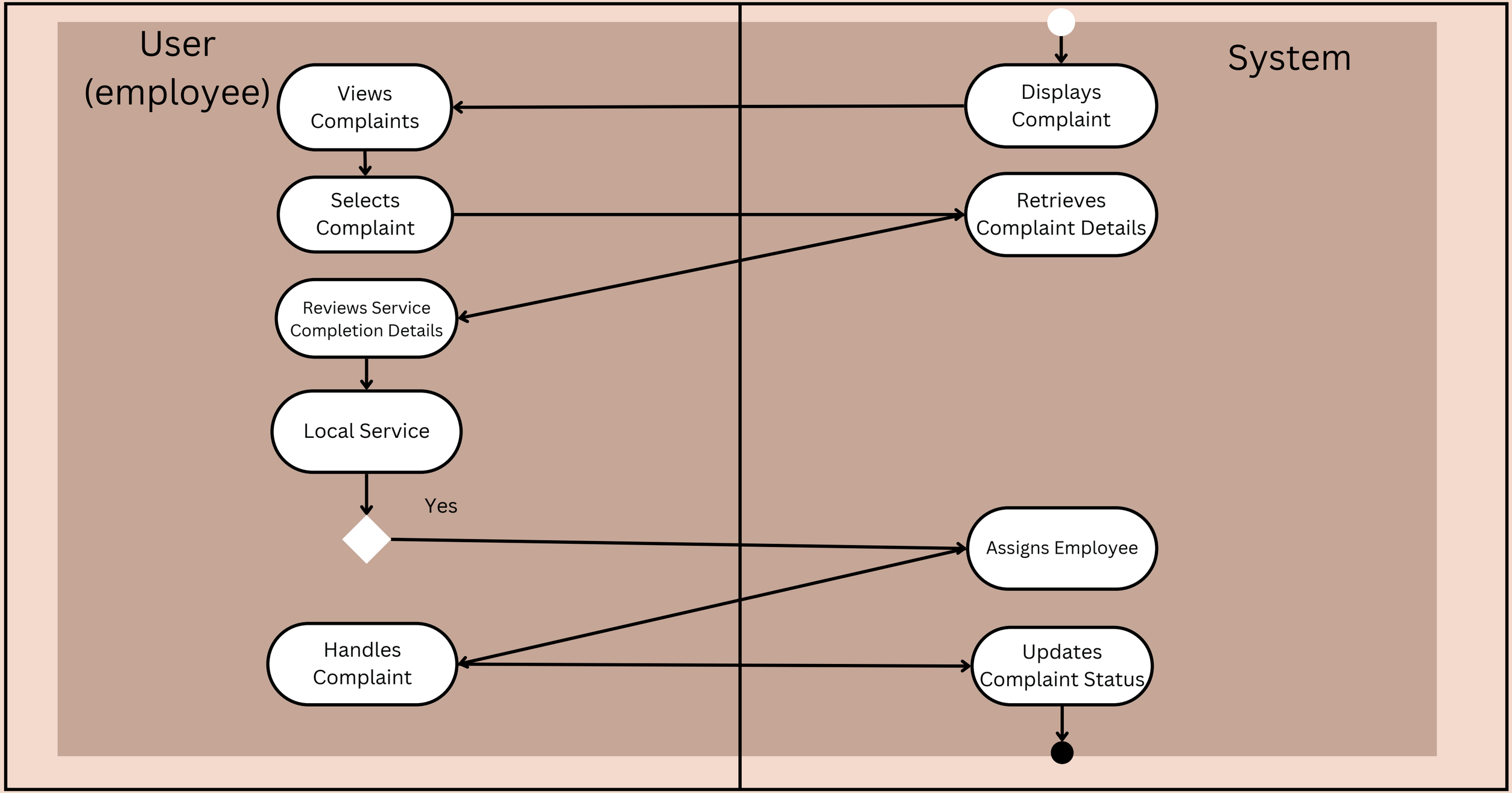
CREATE ACOUNT ACTIVITY MODEL



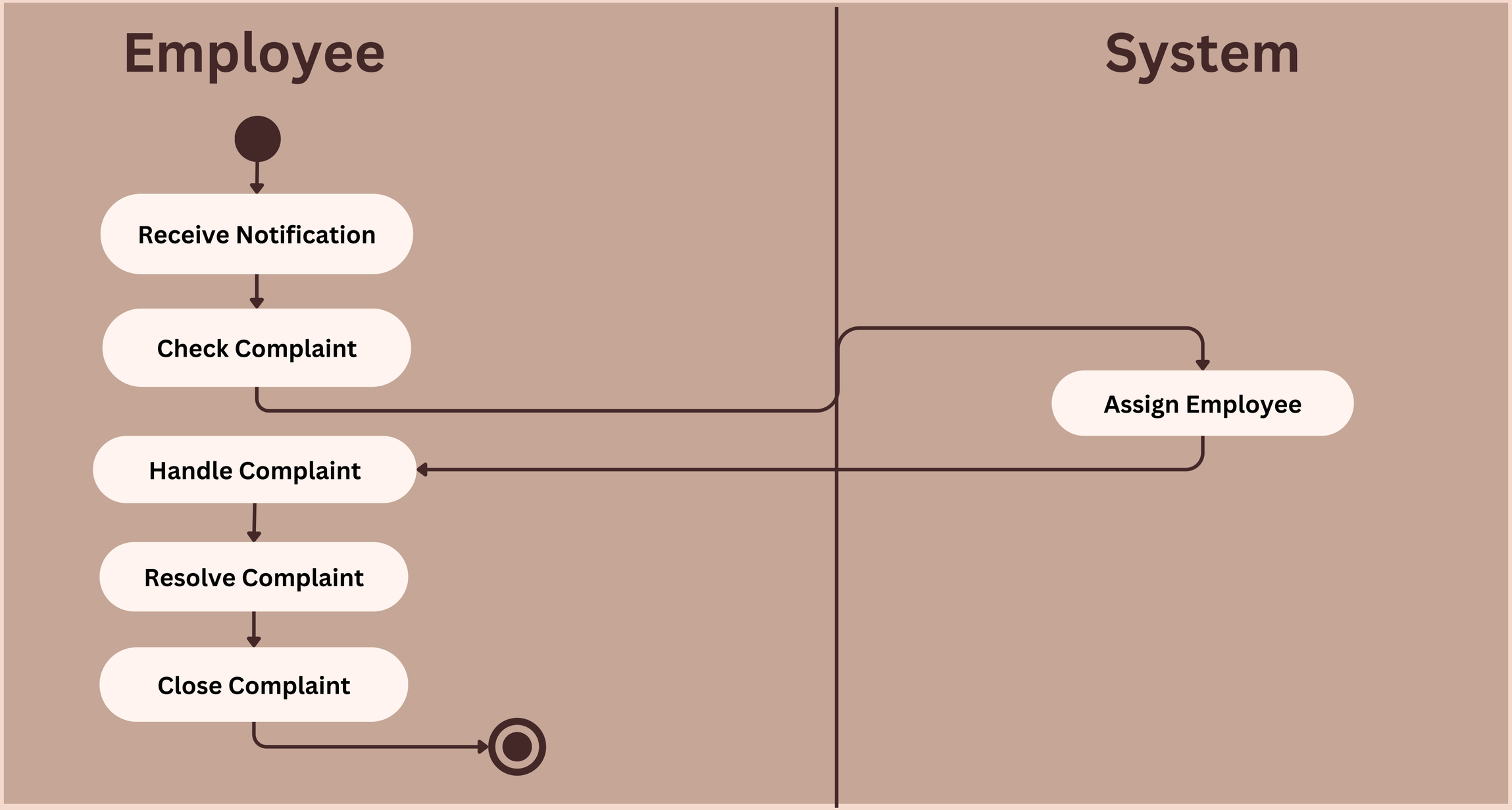
LOGIN ACTIVITY MODEL



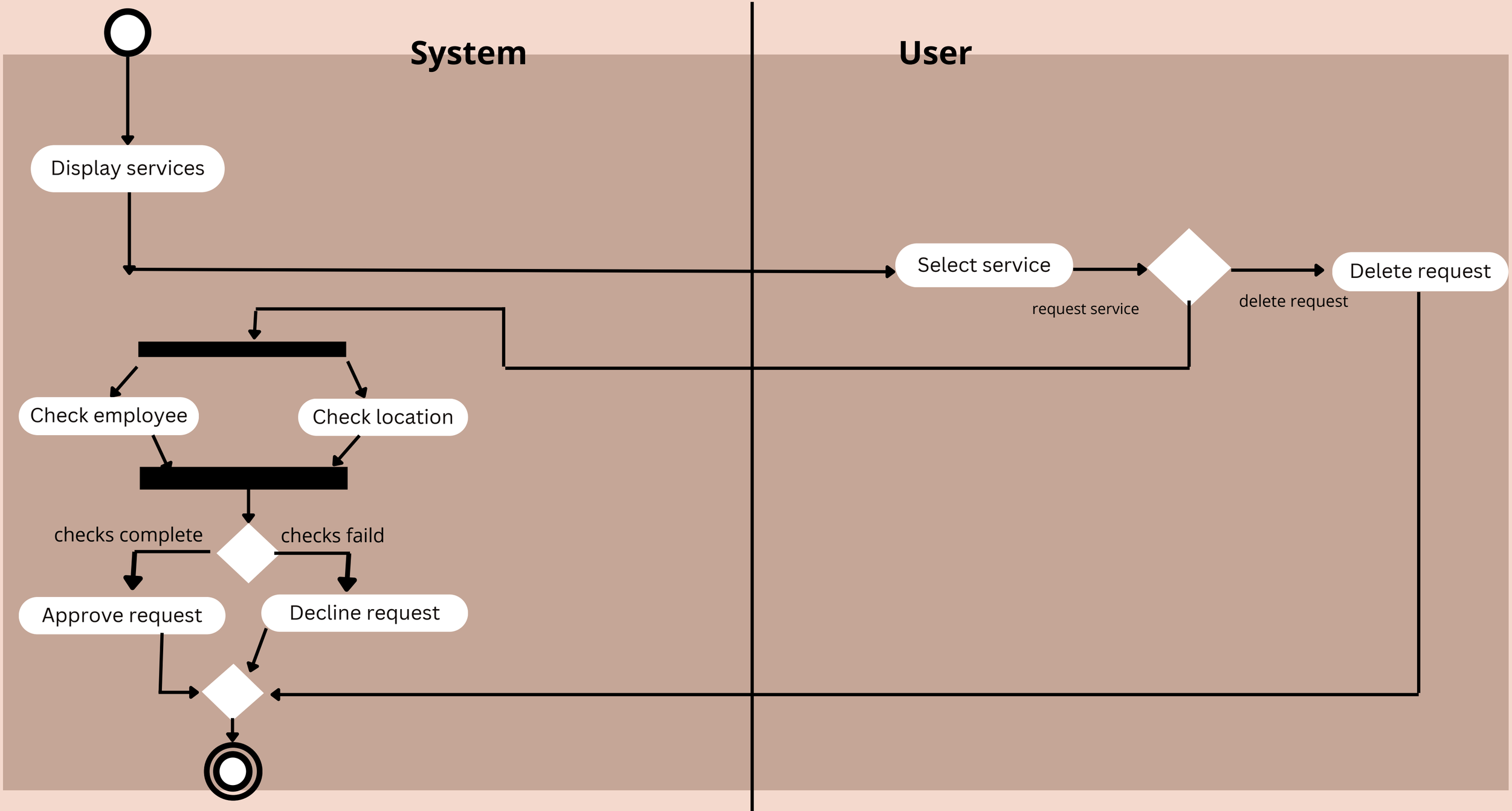
ACTIVY DIGRAM (HANDLE A COMPLAINT)



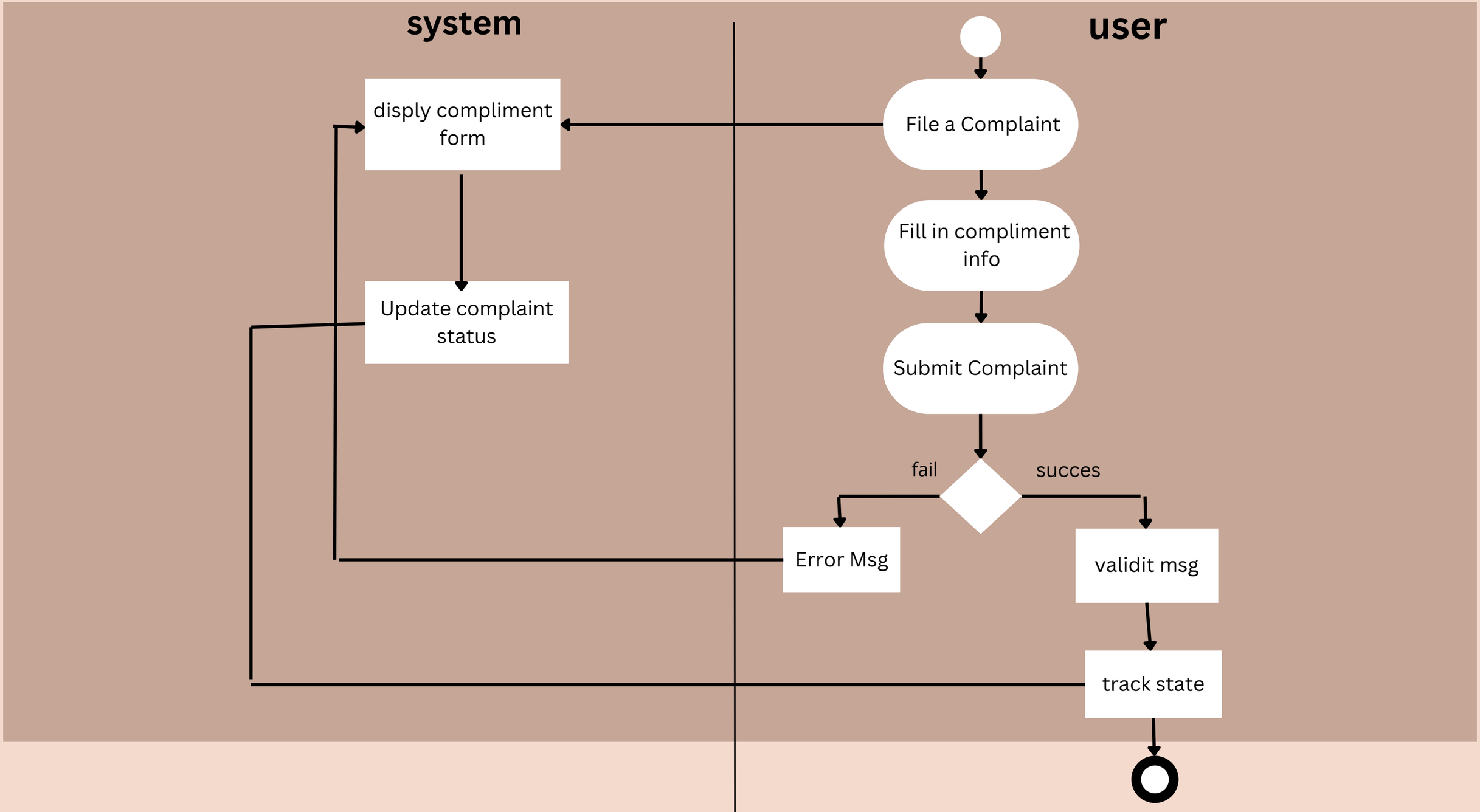
ACTIVY DIGRAM FOR HANDLE A COMPLAINT



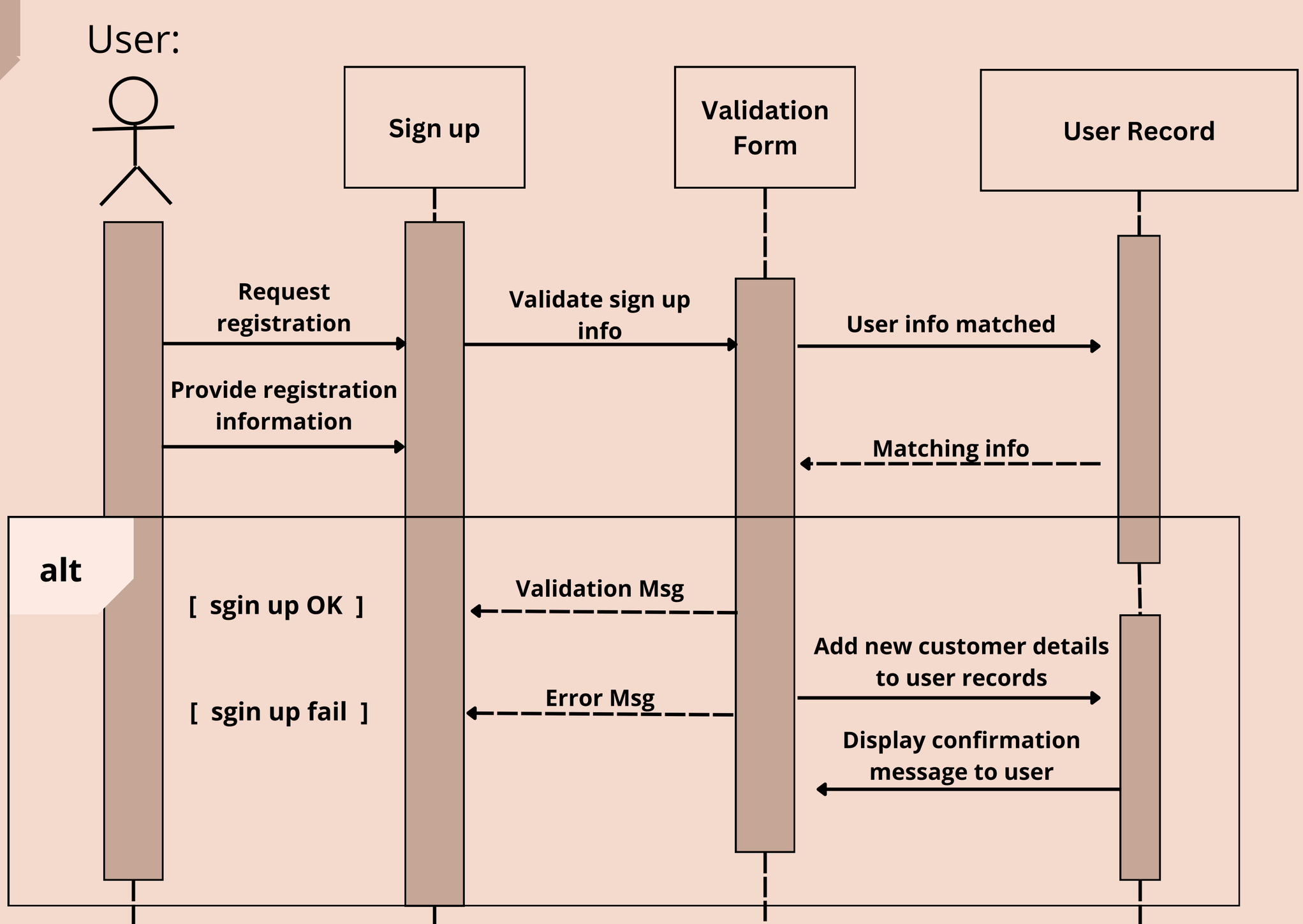
LOCAL SERVICES REQUEST ACTIVITY MODEL



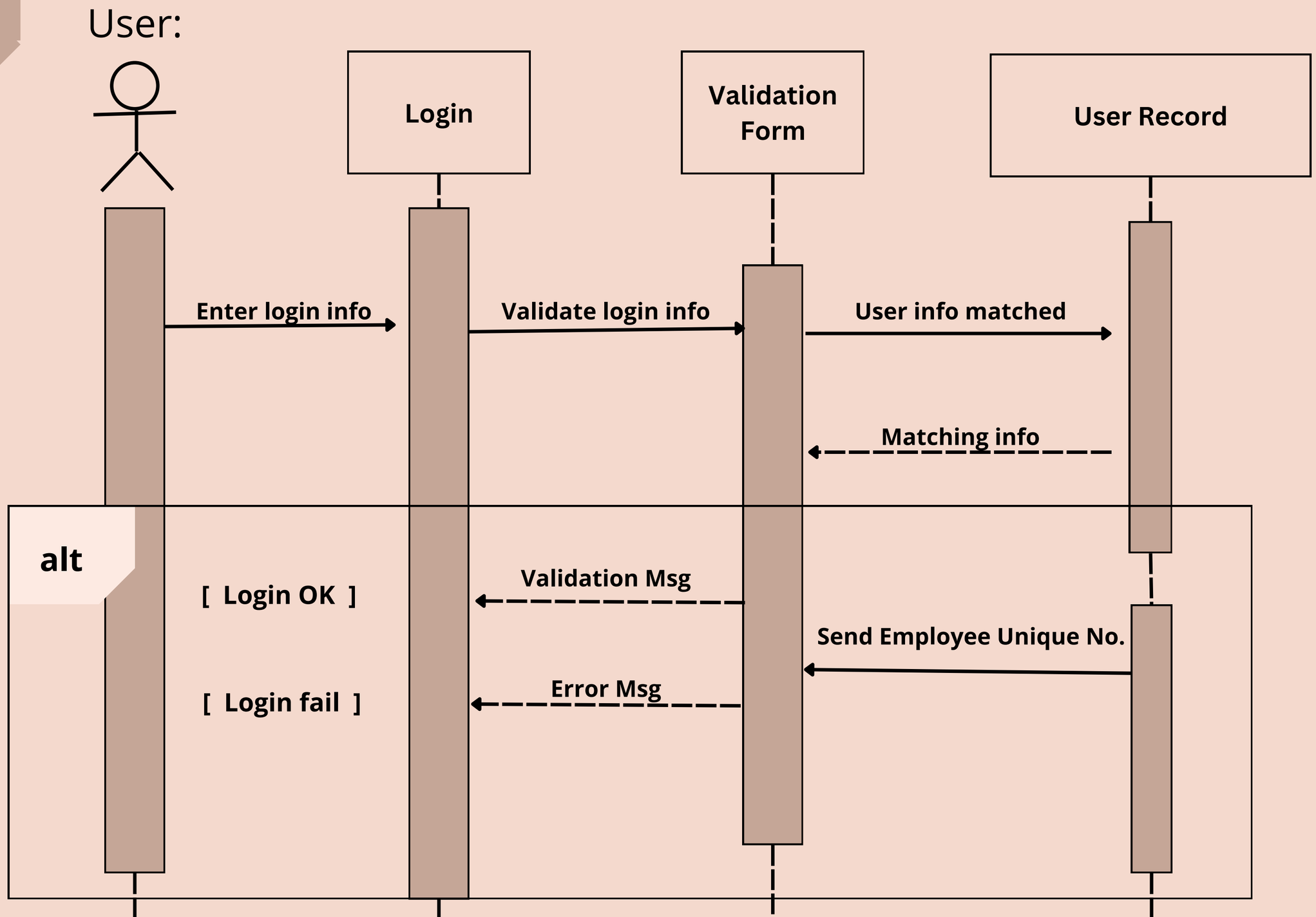
FILE COMPLEMENT



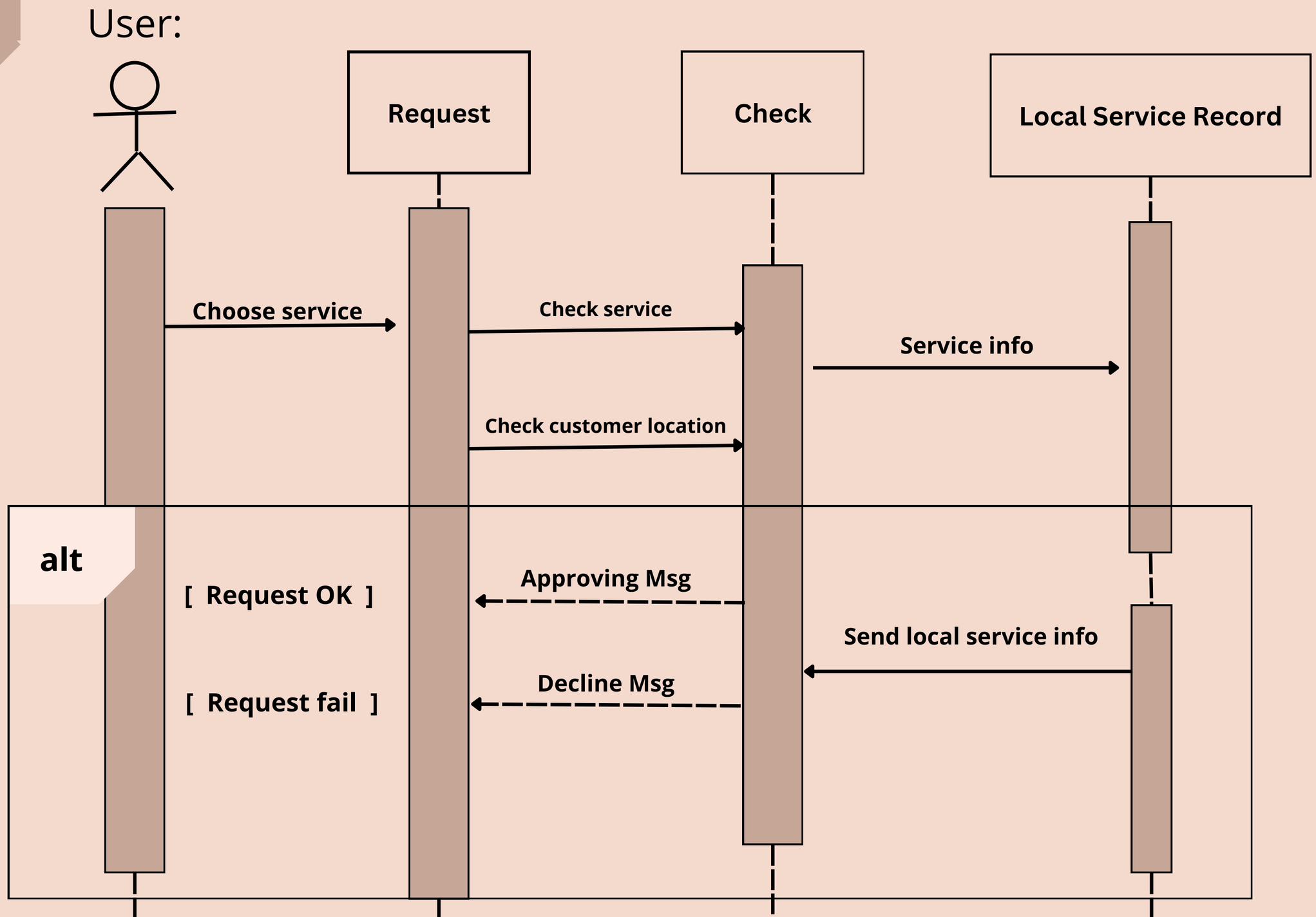
Create acount



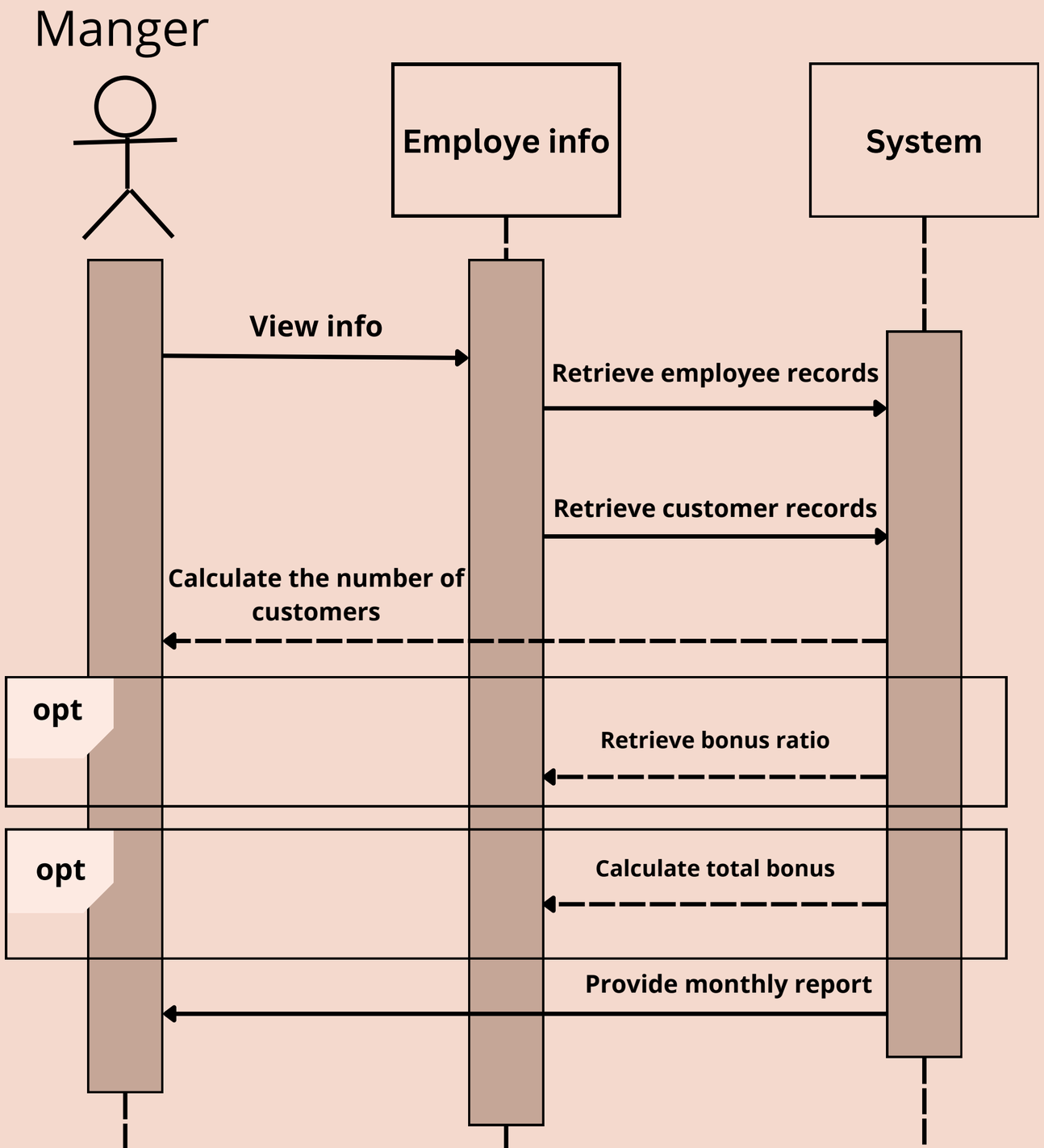
Login


User:
Login
Validation Form
User Record
Enter login info
Validate login info
User info matched
Matching info
alt
[Login OK]
Validation Msg
Send Employee Unique No.
[Login fail]
Error Msg

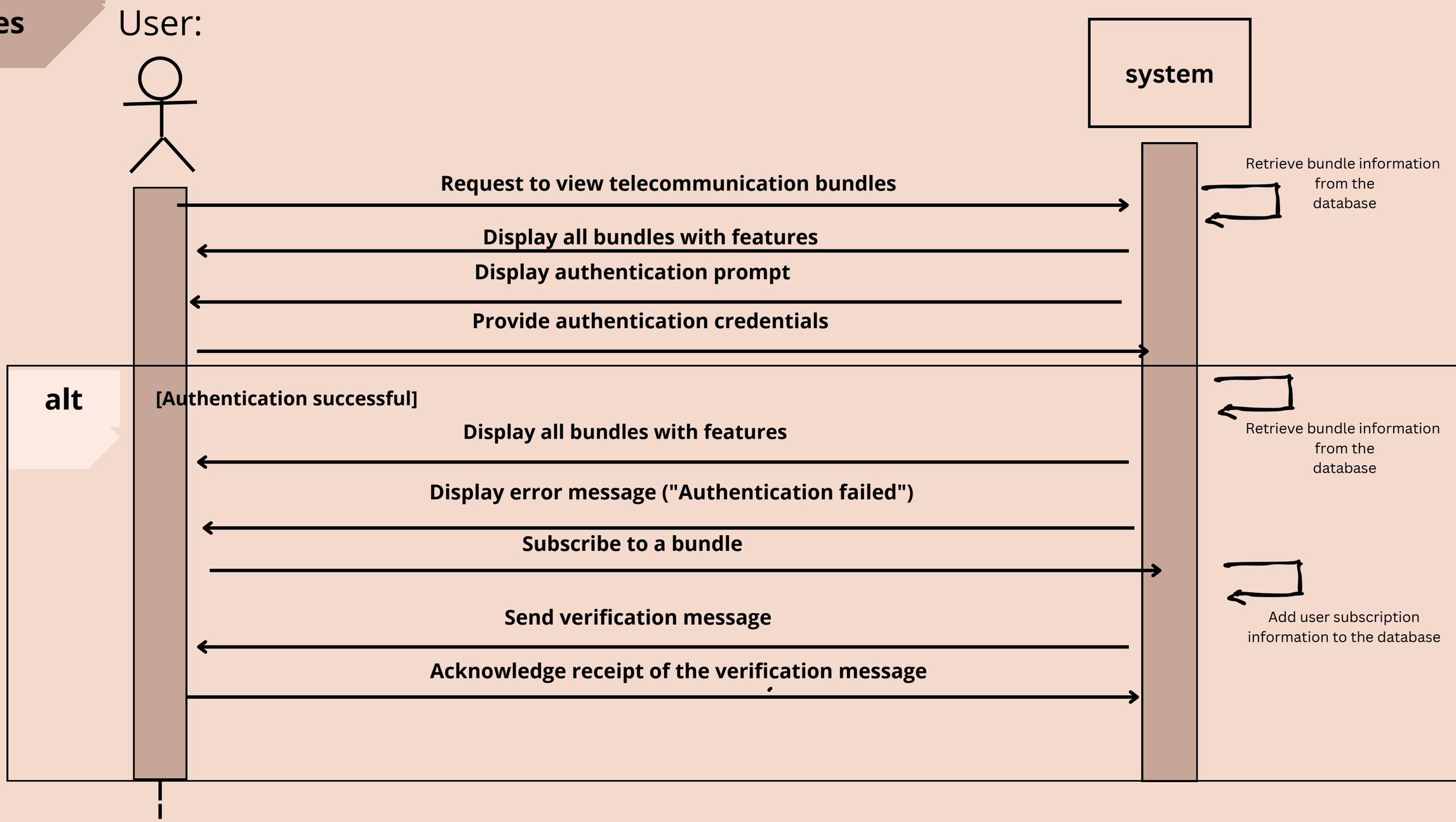
Local service



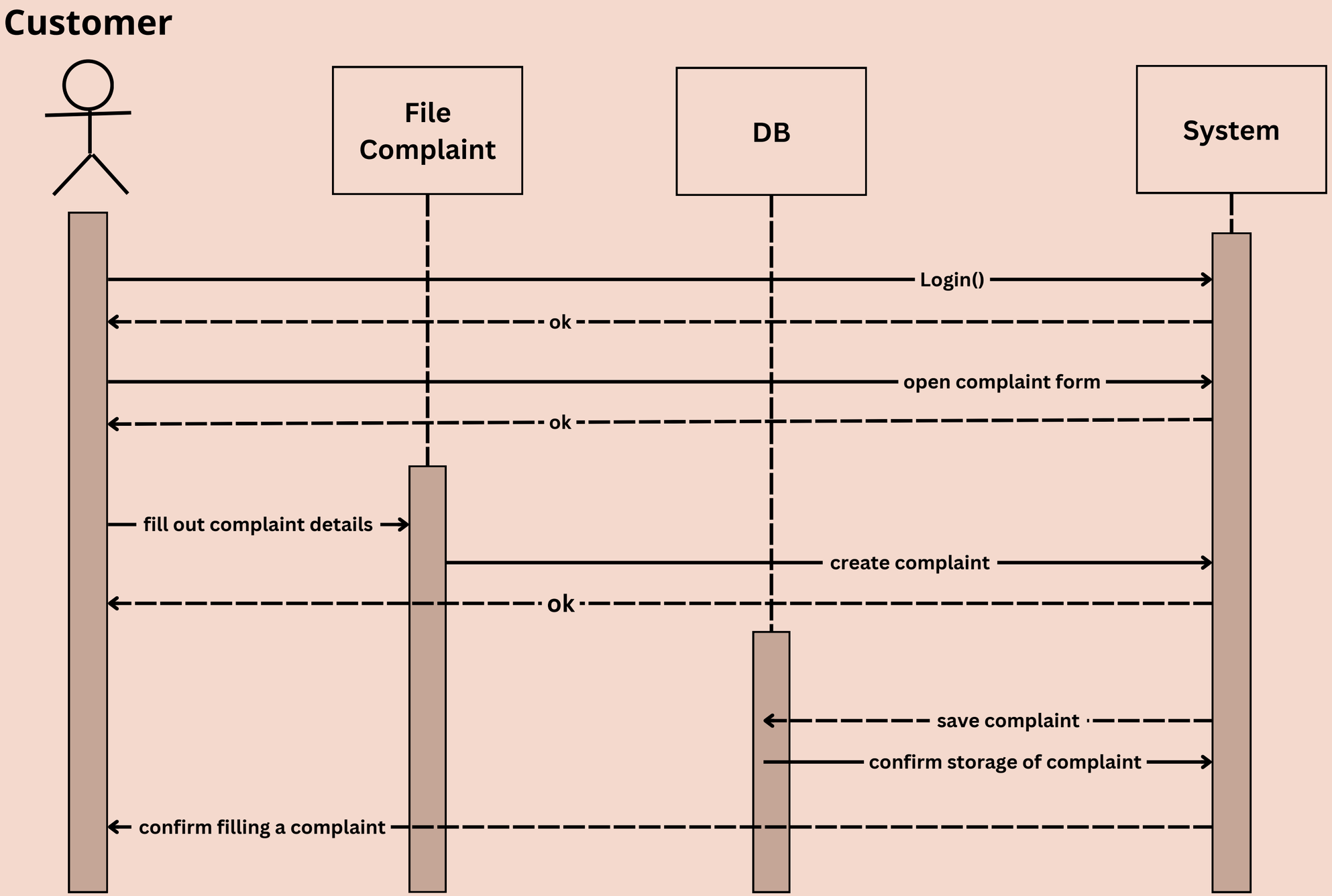
Monthly reports



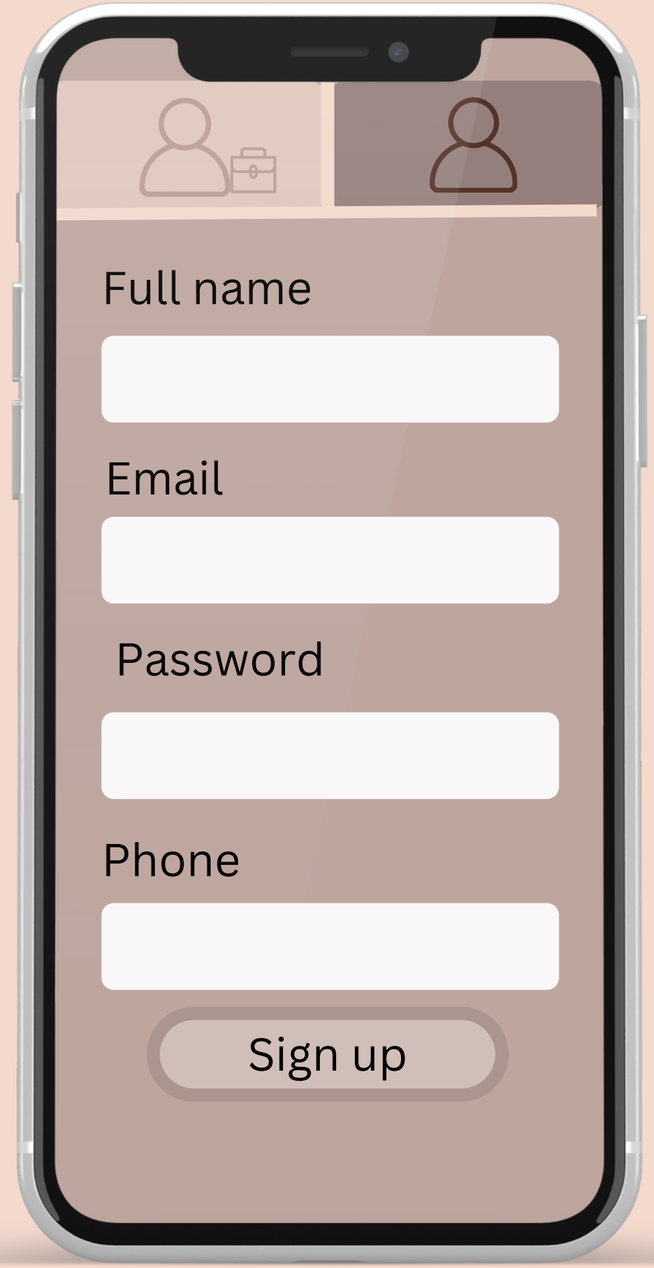
View & subscribe to bundles



File a complaint

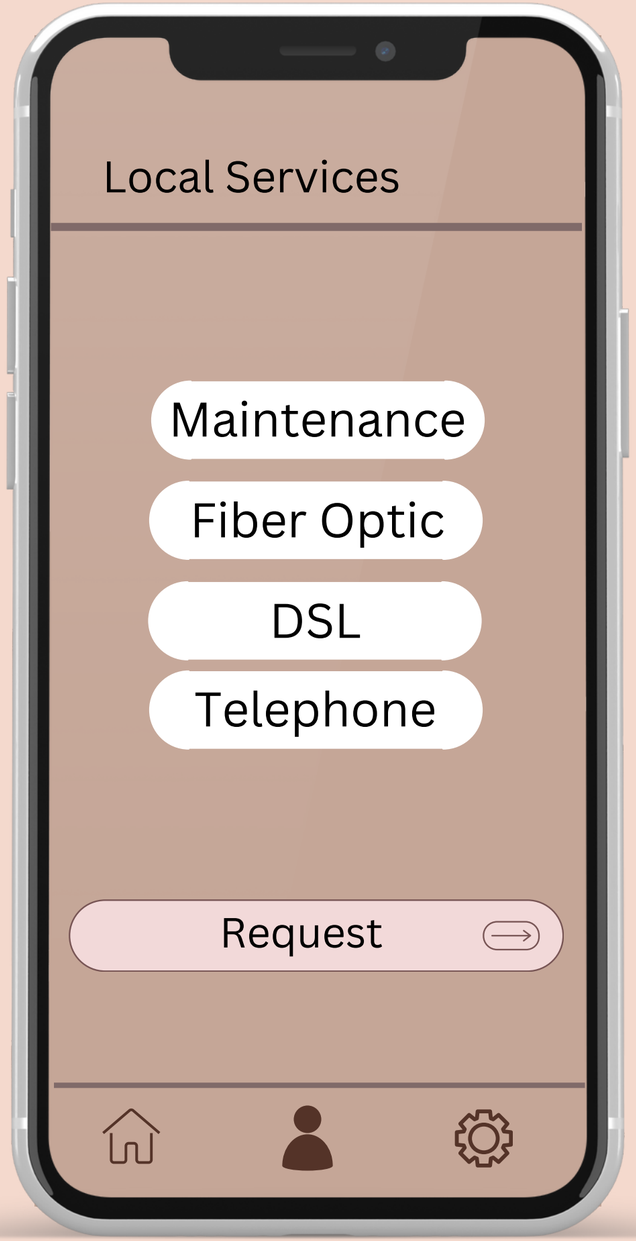


Create acount

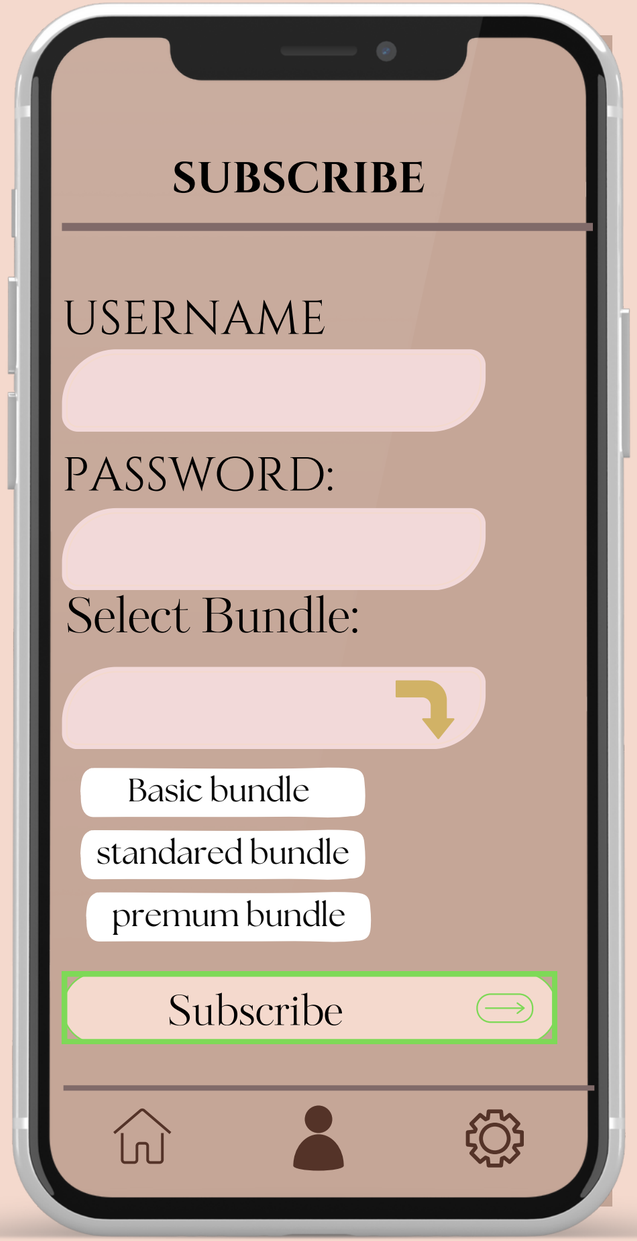


Login

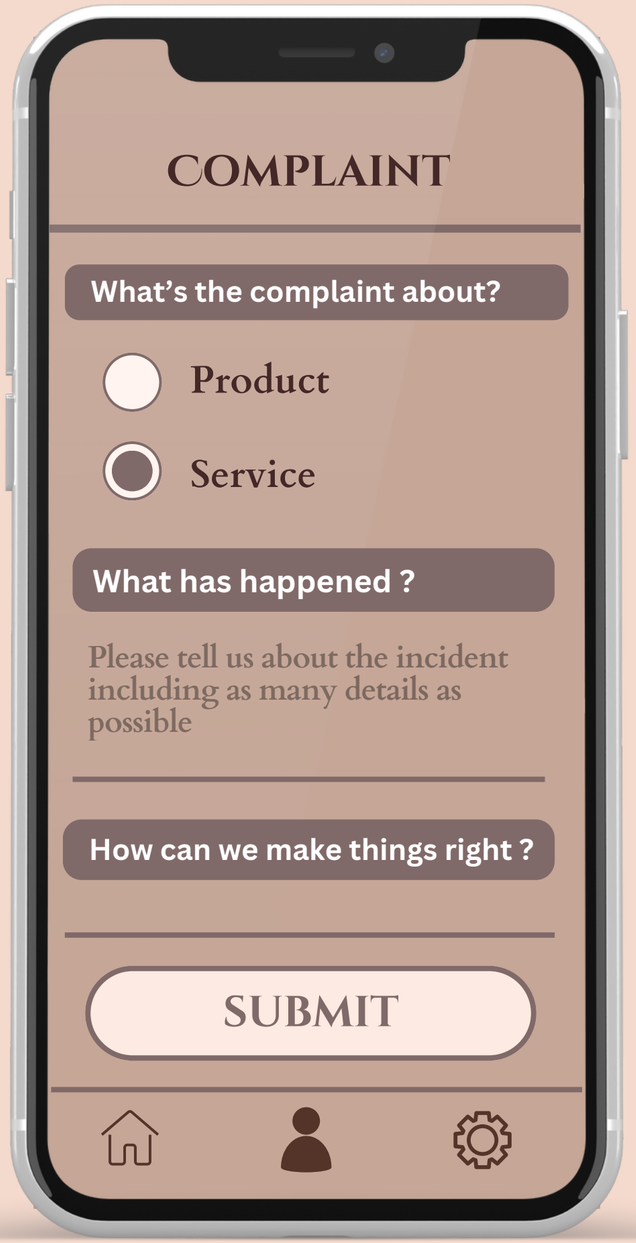
Local service



Subscribe


SUBSCRIBE
USERNAME
PASSWORD:
Select Bundle:
Basic bundle
standared bundle
premum bundle
Subscribe

File complaint



Monthly reports