

Certification Management Application

Prepared For

CRM SFDC Training Program

Capgemini Technology Services

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Abstract

The Certification Management Application is a salesforce-based application for the management of certifications and vouchers. The application is made using the tools such as process builder, approval process, apex triggers provided by salesforce. The application uses the following 4 custom objects:

1. Employees
2. Certifications
3. Vouchers
4. Certification Requests

The main purpose of this application is to allow the employees of an organisation to request for the certification and the respective voucher easily. The application also allows to keep track of different employees passed or failed in different certifications using the reports tool provided by salesforce. The application also leverages the power of Lightning Web Components for building the user interface for the application.

Scope

The application is used by 2 types of user:

1. App Admin

The app admin can:

- a. Create, update and delete Certifications in the system.
- b. Create, update and delete Vouchers in the system.
- c. View all the Certifications requests.
- d. Approve or reject the Certification requests.
- e. Assign Vouchers if a Certification request is approved.
- f. Provide comments if a Certification Requests is rejected.

2. App User

The app user can:

- a. Create, update and delete Employees in the system.
- b. Create and submit certification requests to app admin for approval on behalf of employees requesting for certifications.

- c. View all the Certifications and Vouchers.
- d. Update request status to passed/failed if request is approved.
- e. Manage reports and dashboards.
- f. Notify employee about status of request on every stage.

The Out Scope of the application are as follows:

- 1. The application does not include the Employee login
- 2. The employee can share his/her details with the app user who will create a record in employee object with the details provided by the employee.
- 3. Third party integrations are not included in the application.

Objects and Fields

- 1. **Employee Object** – The employee object is used to store the details of the employees in salesforce database.

Fields & Relationships:

- Employee Id (Auto Number)
- Employee Name (Text)
- Employee Email (Email)
- Experience (Number)
- Primary Skill (Text)
- Secondary Skill (Text)
- Comments (Text)

- 2. **Certification Object** – The certification object is used to store the details of the certifications in salesforce database.

Fields & Relationships:

- Certification Id (Auto Number)
- Certification Name (Text)
- Certification Cost (Currency)
- Comments (Text)

3. **Voucher Object** – The voucher object is used to store the details of the available vouchers in salesforce database.

Fields & Relationships:

- Voucher Id (Auto Number)
- Voucher Name (Text)
- Certification Object (LookUp Relationship)
- Voucher Cost (Formula((Currency))
- Validity (Date)
- Active (Boolean)
- Comments (Text)

4. **Certification Request Object** – The certification request object is used to store the details of the certification requests in salesforce database.

Fields & Relationships:

- Request Id (Auto Number)
- Certification Object (Master-Detail Relationship)
- Employee Object (Master-Detail Relationship)
- Voucher Object (LookUp Relationship)
- Due Date (Date)
- Status (picklist)
 - a. Draft
 - b. Approved
 - c. Rejected
 - d. Passed
 - e. Failed
- Comments (Text)

Process Builder and Approval Process

Process Builder

The application uses 2 process builder for providing major functionality in the application. These 2 process builders are “Process For Requests” and “For Due Date Passed Notification”. Along with these 2 process builder some other process builder are also deployed for firing the email alerts to send emails to employee at each stage of request. These process are invocable by 2 process mentioned above. The 2 major process builder are used as follows:

Process For Request

This process is used to call the approval process “Approval for voucher” whenever a certification request is created in the salesforce database by the app user. This process is also used to invoke other 3 processes – “Email to employee”, “Email When Approved” and “Email When Rejected” respectively when the request is submitted for approval, when request is approved and when request is rejected. This process also makes the voucher active when request is approved and inactive when request is rejected.

For Due Date Passed Notification

This process is used to send the email to employee and app user when due date of a certification request is passed and the request is not yet approved to rejected by the app admin.

Approval Process

The application uses 1 approval process – “Approval for voucher”. This approval process is invoked as soon as a request is created. The initial action of this approval process include changing the status field of certification request object to draft indicating that the request is submitted to the app admin. The app user submits the request on employee’s behalf to the app admin and the app admin either approves or rejects the request. Upon approval, the status field is changed to “Approved” by the approval steps feature of the approval process. Upon rejection, the status field is changed to “Rejected” by the rejection steps feature of approval process.

Validations

Validation Rules:

The following validation rules are applied to maintain the consistency of the application:

- App User should not be able to raise same certification voucher request again if one already exist in the system.
- App User should not be able to add new certification voucher request in system if there is any pending request exist for that employee.
- Voucher Name must be unique and 10 chars long.
- Voucher Validity should be greater than today (the date is stored in the database).
- Request Due date should not be less than Today (the date is stored in the database).
- A Voucher should be Active for it to be applied.
- If a request has been approved and has no voucher, but a voucher is available, then it should be automatically applied.
- If an employee gets passed/failed in any certification then system should not allow to App User to raise same certification request for that employee again.

Triggers:

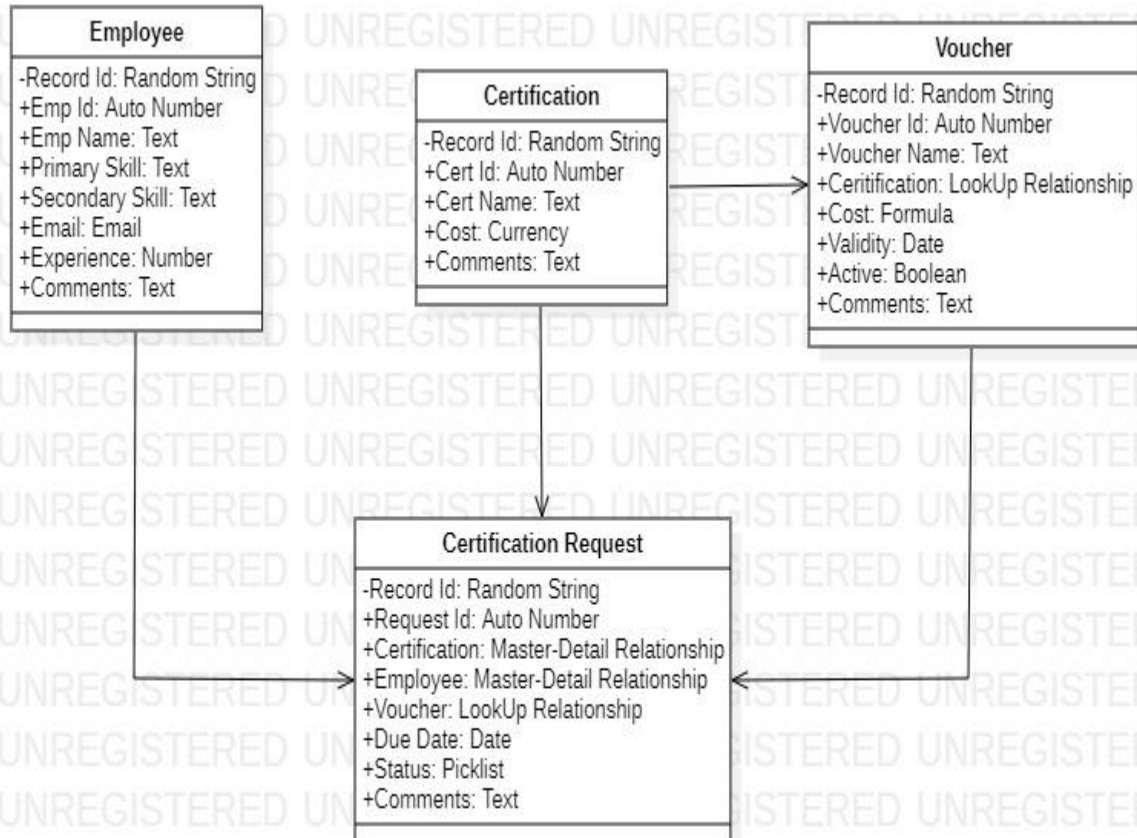
The triggers are used in maintaining the proper flow of the application and are also used in performing some validations. These triggers are written Apex programming language which is widely used in salesforce. Following triggers are used in this application:

1. **Check_Existing_Employees** - This trigger is used to restrict the app user to create request for an employee if a request already exists for the employee in pending stage.
2. **AddVoucherAutomatically** - This trigger is used to assign an active voucher if available to the certification requests which were initially submitted without a value in the voucher field.

3. **NewVoucherAdded** - This trigger is used to assign a newly added voucher in the system to the certification requests.
4. **ActiveUpdateNotAllowed** - This trigger is used to restrict the app user if the he/she tries to change the active field of a voucher associated with a certification request.

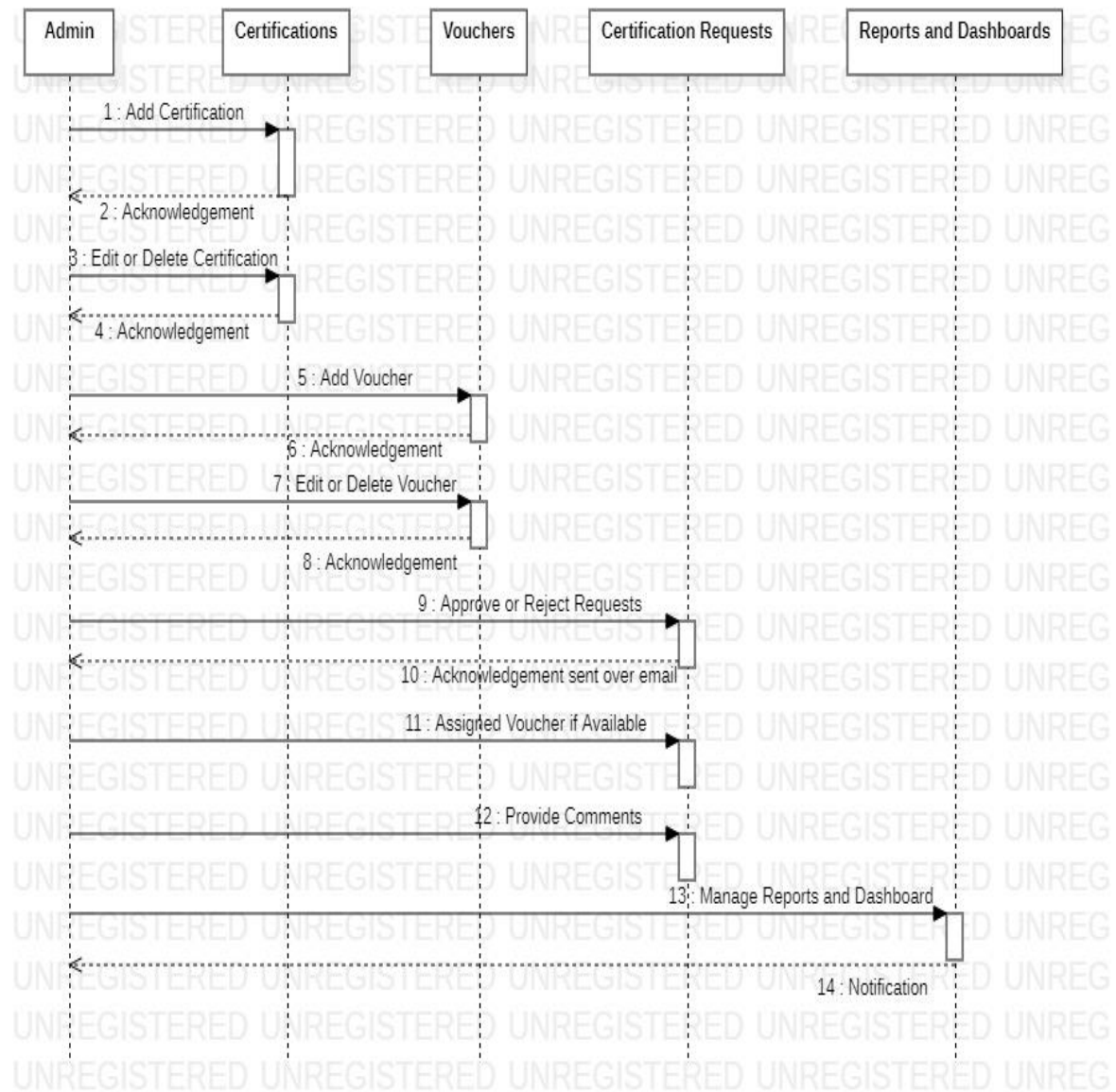
UML Diagrams

Class Diagram

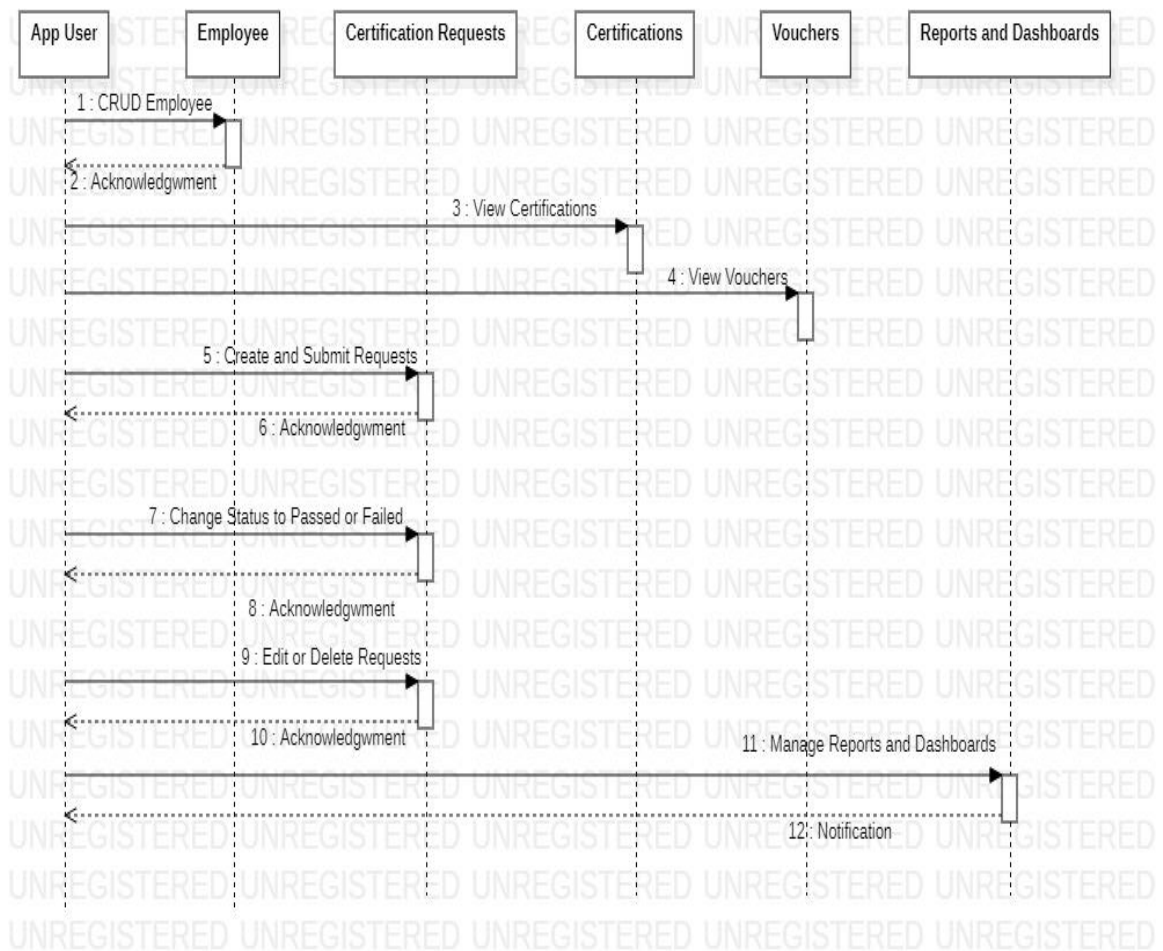


Sequence Diagram

1. For App Admin

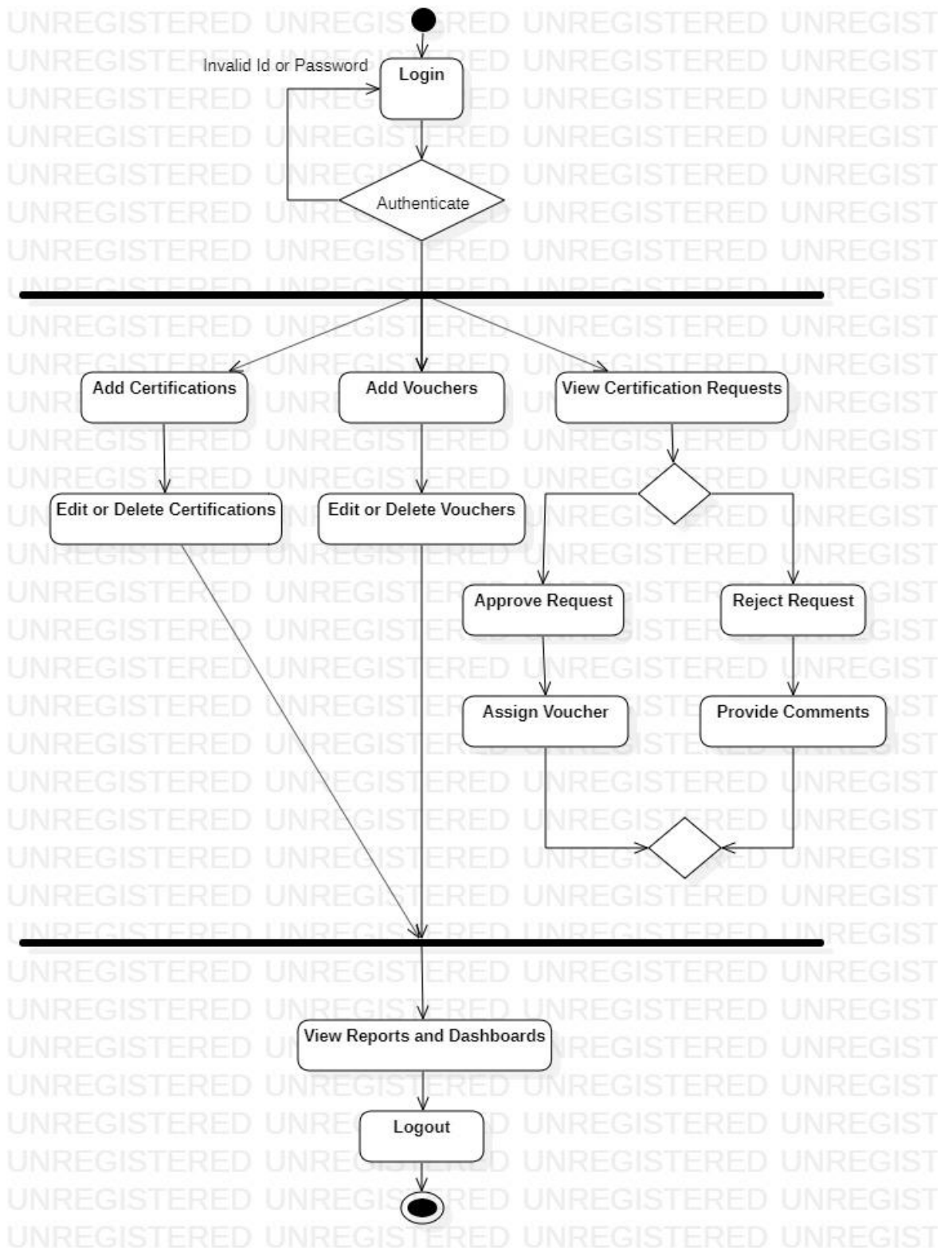


2. For App User

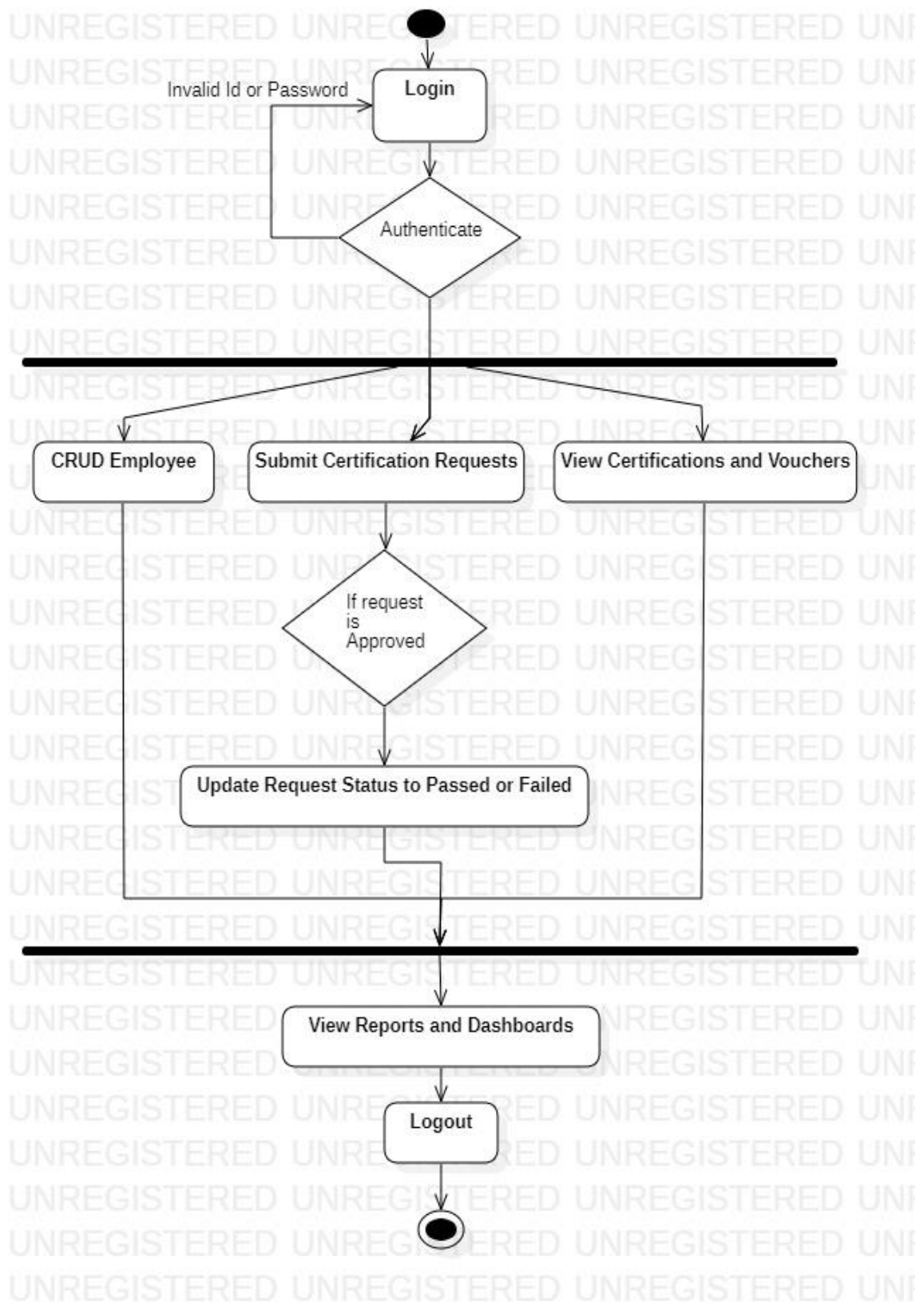


Activity Diagram

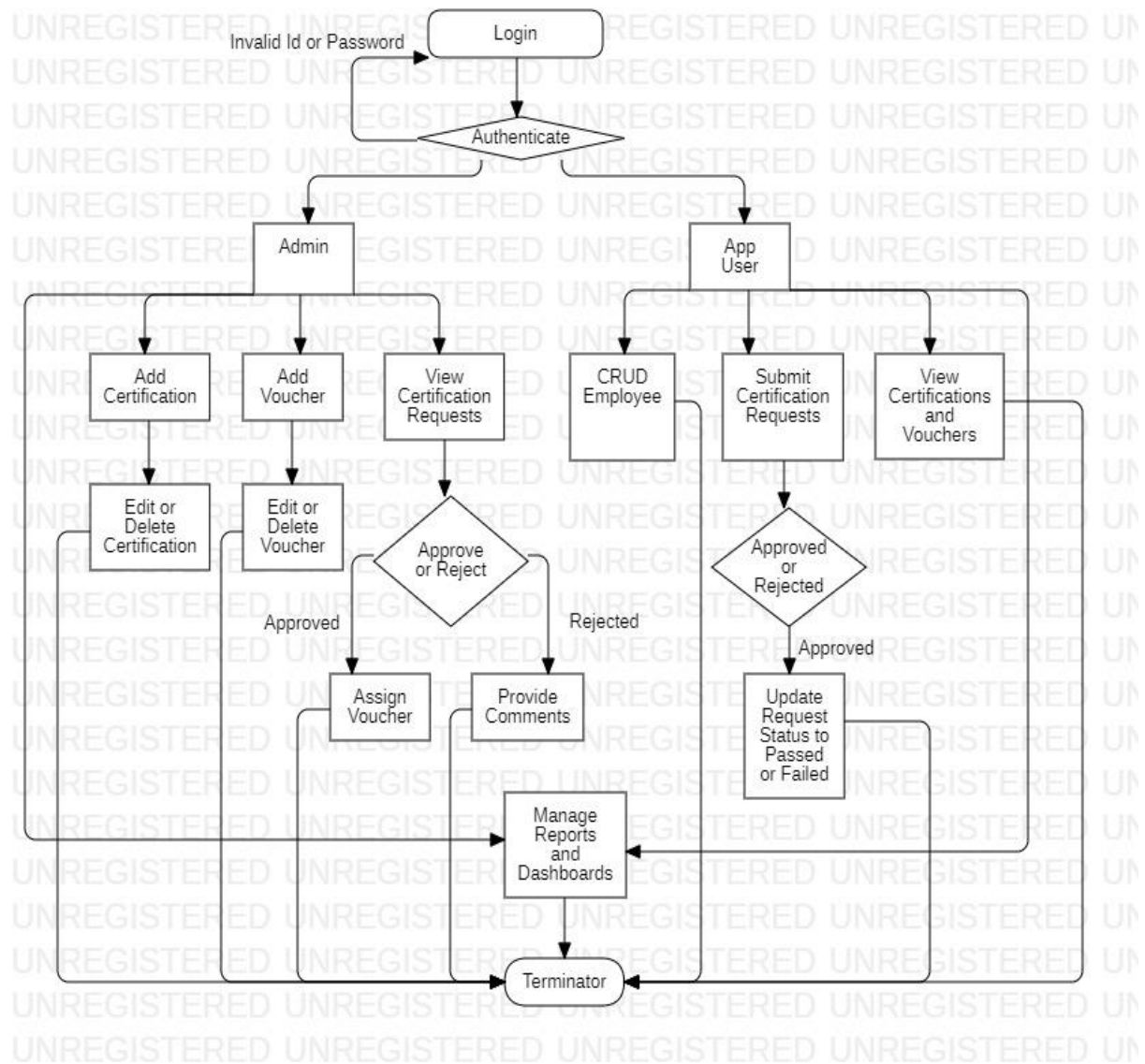
1. For App Admin



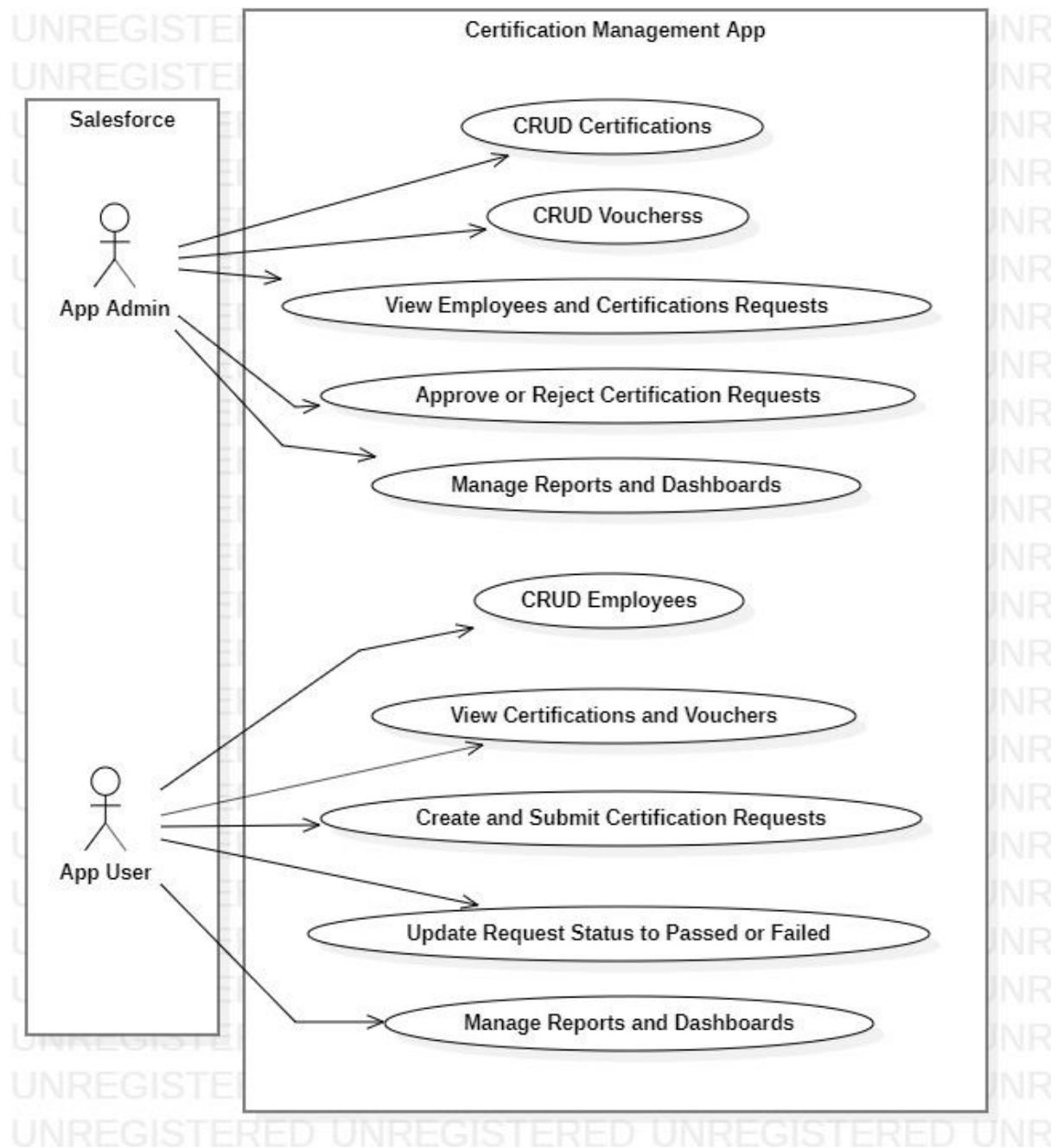
2. For App User



Flow Chart



Use-Case Diagram



Flow of Application

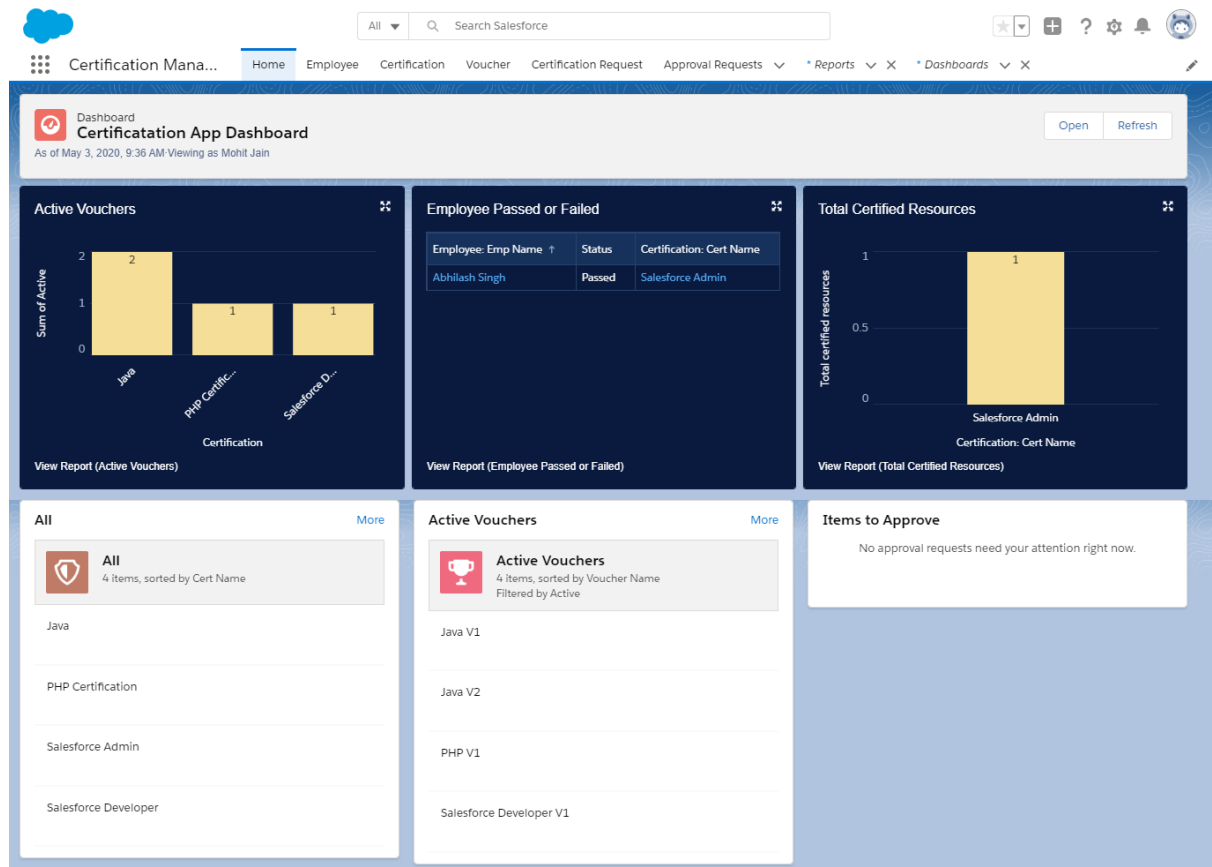
1. The App Admin creates certification and voucher records in the system.
2. Employee mails the app user to issue certification voucher.
3. App User raises the certification request to the App Admin who in turn approves or rejects the request. The request is raised using Approval Process tool of salesforce. The Approval Process is fired as soon as a request is created.
4. The Employee is notified when request is submitted by the App User via email.
5. The App Admin also receives an email when a request is raised.
6. If the App Admin approves the request, then, the employee and the App User receives a mail to notify them about the approval.
7. The voucher will be assigned to the user when request is approved.
8. If the App Admin rejects the request, then, the employee and the App User receives a mail to tell them about the rejection.
9. The App Admin will provide some comments if the request is rejected.
10. The employee will notify the App User about the status of certification after the request is approved.
11. The App User will then change the request status to Passed/Failed based on the information provided by the employee.
12. In case due date of request is passed and request is still not approved or rejected, then, the employee and the app user will receive a mail to notify them to update the status of request.
13. The whole repeats over and over again.

Assumptions

- The Employee mails for a Request
- The Employee can only see his details but cannot edit them.
- Employee results are passed over by mail.
- Reports and Dashboards have the time frequency set to the Current Financial Year, and this can be changed by the viewer accordingly, to fit his/her timeline.

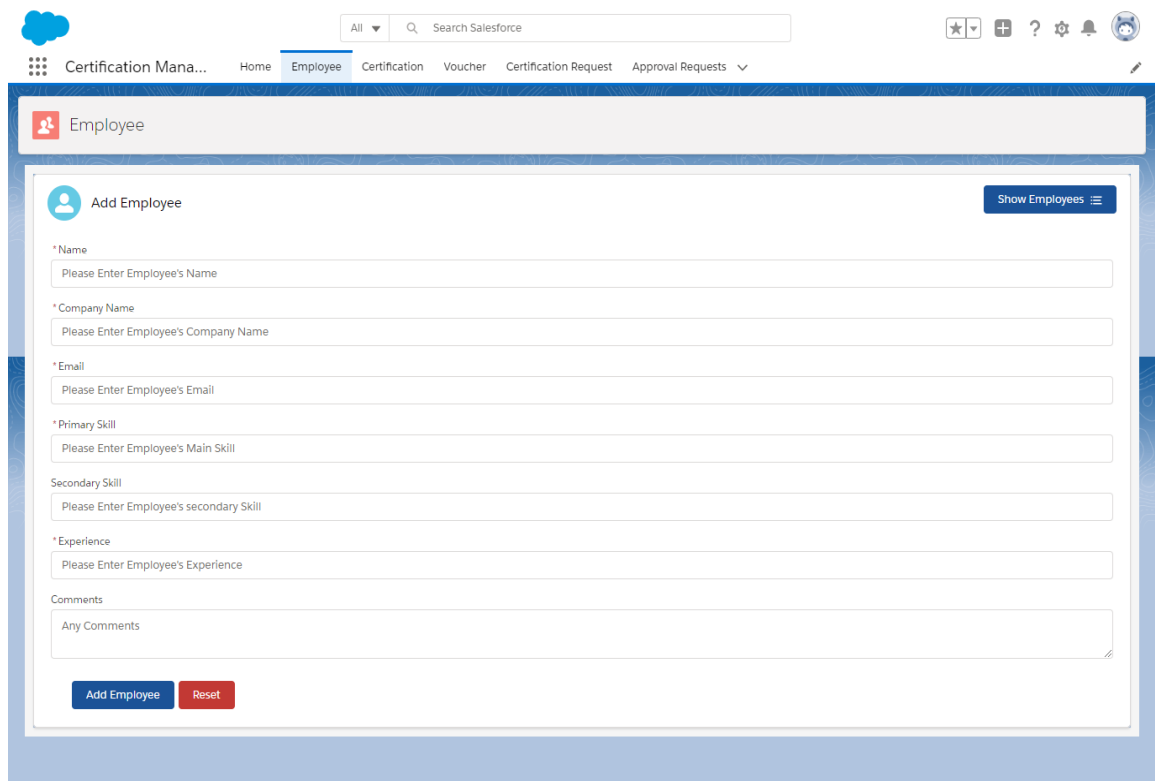
User Interface

1. Home Page



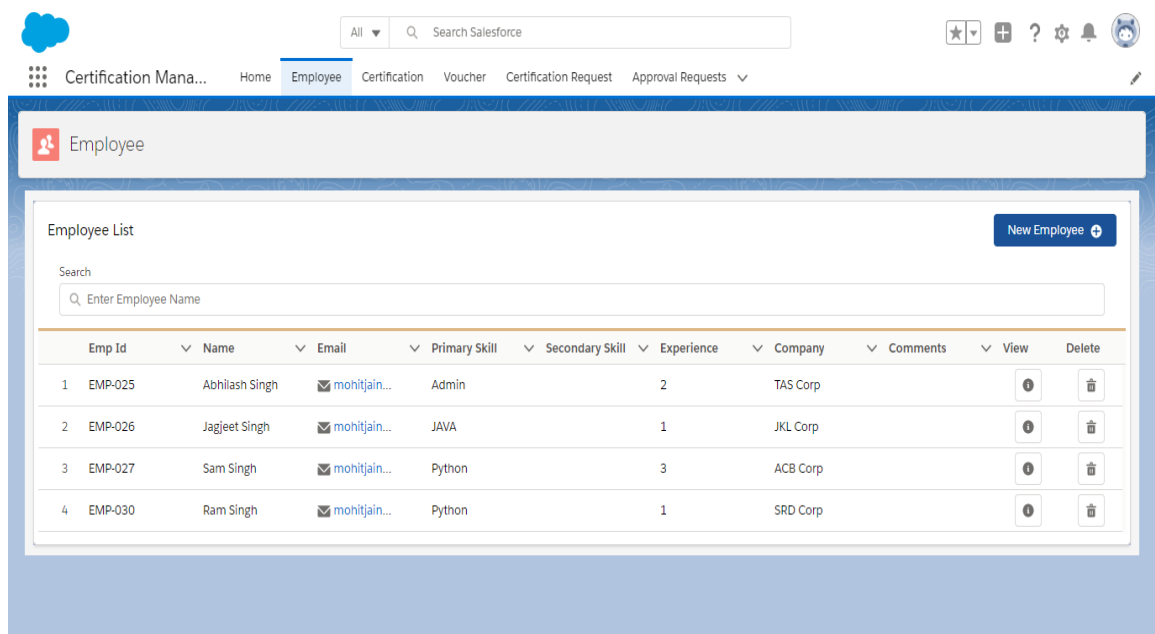
2. Employee Pages

a. Add Employee



The screenshot shows the 'Add Employee' form within a web application. The interface includes a top navigation bar with a logo, a search bar, and several menu items: 'Certification Mana...', 'Home', 'Employee' (highlighted), 'Certification', 'Voucher', 'Certification Request', and 'Approval Requests'. Below the navigation bar is a header section with a red icon and the word 'Employee'. The main content area is titled 'Add Employee' and contains several input fields: 'Name' (with placeholder 'Please Enter Employee's Name'), 'Company Name' (with placeholder 'Please Enter Employee's Company Name'), 'Email' (with placeholder 'Please Enter Employee's Email'), 'Primary Skill' (with placeholder 'Please Enter Employee's Main Skill'), 'Secondary Skill' (with placeholder 'Please Enter Employee's secondary Skill'), 'Experience' (with placeholder 'Please Enter Employee's Experience'), and 'Comments' (with placeholder 'Any Comments'). At the bottom of the form are two buttons: 'Add Employee' (blue) and 'Reset' (red). A 'Show Employees' button is located in the top right corner of the form area.

b. List of Employees



The screenshot shows the 'Employee List' table within the same web application. The interface is consistent with the previous screenshot. The table has a search bar at the top with the placeholder 'Enter Employee Name'. The table columns are: 'Emp Id', 'Name', 'Email', 'Primary Skill', 'Secondary Skill', 'Experience', 'Company', 'Comments', 'View', and 'Delete'. There are four rows of data:

Emp Id	Name	Email	Primary Skill	Secondary Skill	Experience	Company	Comments	View	Delete
1 EMP-025	Abhilash Singh	✉ mohitjain...	Admin		2	TAS Corp		👁	🗑
2 EMP-026	Jagjeet Singh	✉ mohitjain...	JAVA		1	JKL Corp		👁	🗑
3 EMP-027	Sam Singh	✉ mohitjain...	Python		3	ACB Corp		👁	🗑
4 EMP-030	Ram Singh	✉ mohitjain...	Python		1	SRD Corp		👁	🗑

c. View Record Data

The screenshot displays a Salesforce interface with a modal window titled "Employee Detail". The modal contains the following information:

- Employee Id : EMP-026
- Name : Jagjeet Singh
- Email : mohitjain75870@gmail.com
- Primary Skill : JAVA
- Secondary Skill :
- Experience : 1
- Company Name : JKL Corp
- Comments :

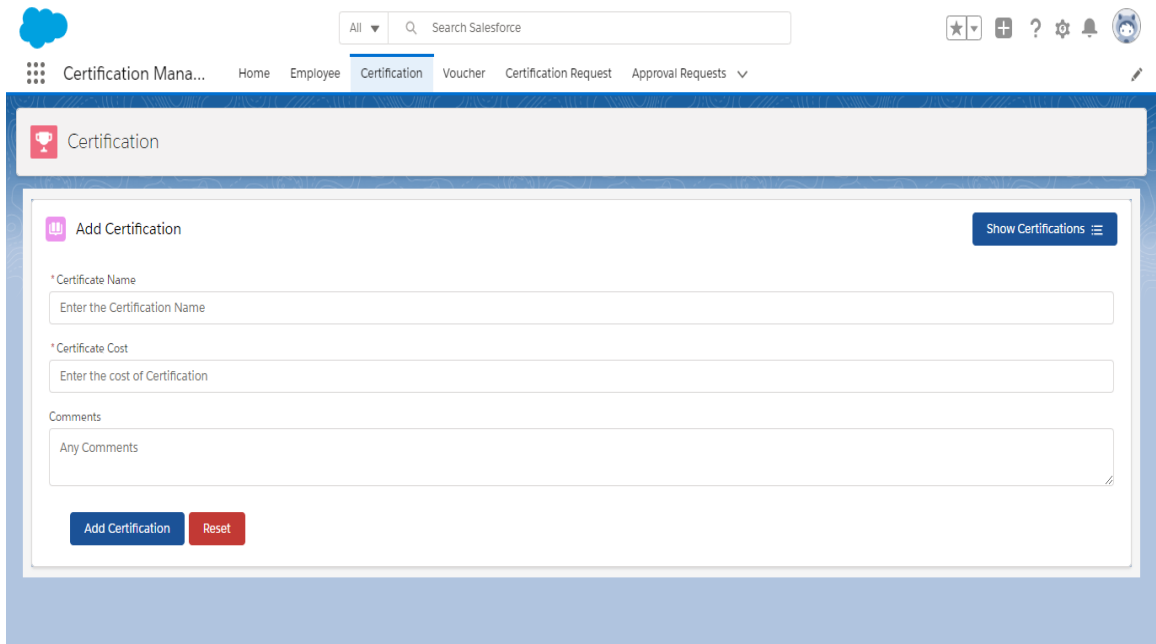
The background interface shows an "Employee List" table with the following data:

Emp Id	Name
1 EMP-025	Abhilash Singh
2 EMP-026	Jagjeet Singh
3 EMP-027	Sam Singh
4 EMP-030	Ram Singh

The "View" button for the second row (EMP-026) is highlighted. The interface also includes a search bar, a "New Employee" button, and a "Comments" section.

3. Certification Pages

a. Add Certification

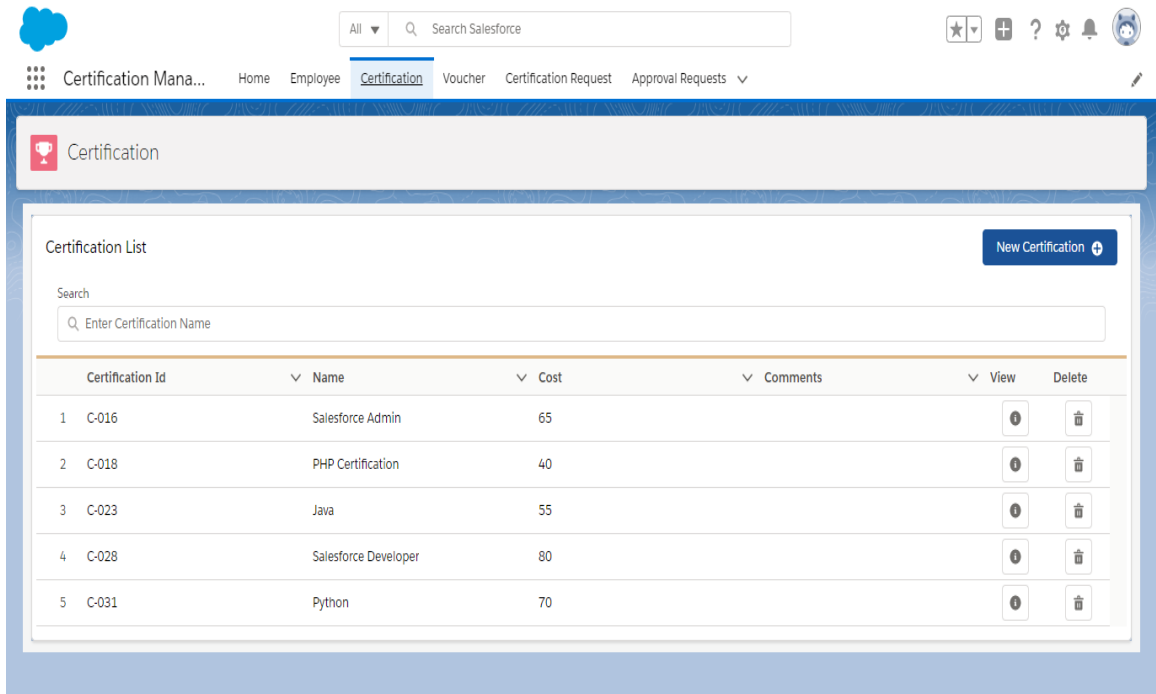


The screenshot shows the 'Add Certification' page within a 'Certification Manager' application. The page has a header with a blue cloud logo, a search bar, and navigation tabs: Home, Employee, Certification (selected), Voucher, Certification Request, and Approval Requests. The main content area is titled 'Certification' and contains a form with the following fields:

- * Certificate Name:** A text input field with the placeholder 'Enter the Certification Name'.
- * Certificate Cost:** A text input field with the placeholder 'Enter the cost of Certification'.
- Comments:** A text area with the placeholder 'Any Comments'.

At the bottom of the form are two buttons: 'Add Certification' (blue) and 'Reset' (red). A 'Show Certifications' button is located in the top right corner of the form area.

b. List of Certifications



The screenshot shows the 'List of Certifications' page within the same 'Certification Manager' application. The page has the same header and navigation tabs as the previous page. The main content area is titled 'Certification List' and contains a search bar with the placeholder 'Enter Certification Name'. Below the search bar is a table with the following data:

Certification Id	Name	Cost	Comments	View	Delete
1 C-016	Salesforce Admin	65			
2 C-018	PHP Certification	40			
3 C-023	Java	55			
4 C-028	Salesforce Developer	80			
5 C-031	Python	70			

A 'New Certification' button is located in the top right corner of the table area.

c. View Record Data

All

Search Salesforce

Certification Mana...

HomeEmployeeCertificationVoucherCertification RequestApproval Requests

Certification List

Search

Q Enter Certification Name

	Certification Id	
1	C-016	
2	C-018	
3	C-023	
4	C-028	Salesforce Developer80
5	C-031	Python70

New Certification

ViewDelete

Certification Detail

Certification Id : C-028

Name : Salesforce Developer

Cost : 80

Comments :

Cancel

4. Voucher Pages

a. Add Voucher

The screenshot shows the 'Add Voucher' page within the Certification Manager application. The page has a header with the Salesforce logo, a search bar, and navigation tabs: Home, Employee, Certification, Voucher (selected), Certification Request, and Approval Requests. The main content area is titled 'Voucher' and contains a form with the following fields:

- *Voucher Name: A text input field.
- *Validity: A date picker field.
- *Active: A checkbox that is currently checked.
- *Certification: A dropdown menu with a search bar labeled 'Search Certifications...'. A magnifying glass icon is on the right.
- Comments: A text area for additional notes.

At the bottom of the form are two buttons: 'Add Voucher' (blue) and 'Reset' (red). A 'Show Vouchers' button is located in the top right corner of the form area.

b. List of Vouchers

The screenshot shows the 'List of Vouchers' page within the Certification Manager application. The page has the same header and navigation tabs as the 'Add Voucher' page. The main content area is titled 'Voucher List' and contains a search bar labeled 'Enter Voucher Name'. Below the search bar is a table with the following columns: Voucher Id, Name, Validity, Active, Comments, View, and Delete.

	Voucher Id	Name	Validity	Active	Comments	View	Delete
1	VOU-000018	PHP V1	May 31, 2020				
2	VOU-000034	Java V1	Jun 30, 2020	✓			
3	VOU-000035	Java V2	Jun 15, 2020				
4	VOU-000044	Salesforce Admin V1	May 31, 2020	✓			
5	VOU-000050	PHP V2	Jun 30, 2020	✓			
6	VOU-000051	Salesforce Developer V1	Jul 15, 2020	✓			
7	VOU-000069	Salesforce Admin V2	May 31, 2020	✓			
8	VOU-000070	Python V1	Jun 30, 2020				

A 'New Voucher' button with a plus icon is located in the top right corner of the table area.

c. View Record Data

The screenshot displays the Salesforce Certification Manager interface. A modal window titled "Voucher Detail" is open, showing the following information:

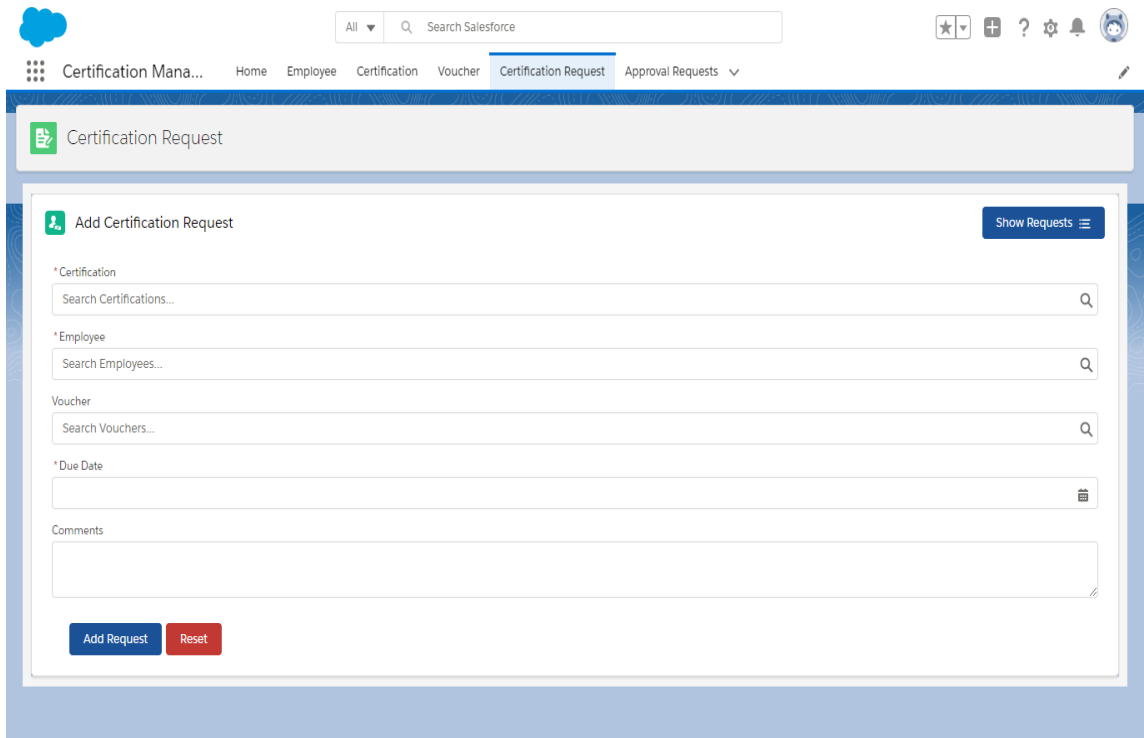
- Voucher Id : VOU-000044
- Name : Salesforce Admin V1
- Cost : 65
- Certification : Salesforce Admin
- Validity : May 31, 2020
- Active : true
- Comments :

The modal has a "Cancel" button at the bottom right. In the background, the "Voucher List" table is visible, showing a list of vouchers. The table has columns for Voucher Id, Name, Validity, and a status column with a checkmark. The row for Voucher Id VOU-000044 is highlighted, and its "View" button is selected.

Voucher Id	Name	Validity	Status
1 VOU-000018	PHP V1		
2 VOU-000034	Java V1		
3 VOU-000035	Java V2		
4 VOU-000044	Salesforce Admin V1	May 31, 2020	✓
5 VOU-000050	PHP V2	Jun 30, 2020	✓
6 VOU-000051	Salesforce Developer V1	Jul 15, 2020	✓
7 VOU-000069	Salesforce Admin V2	May 31, 2020	✓

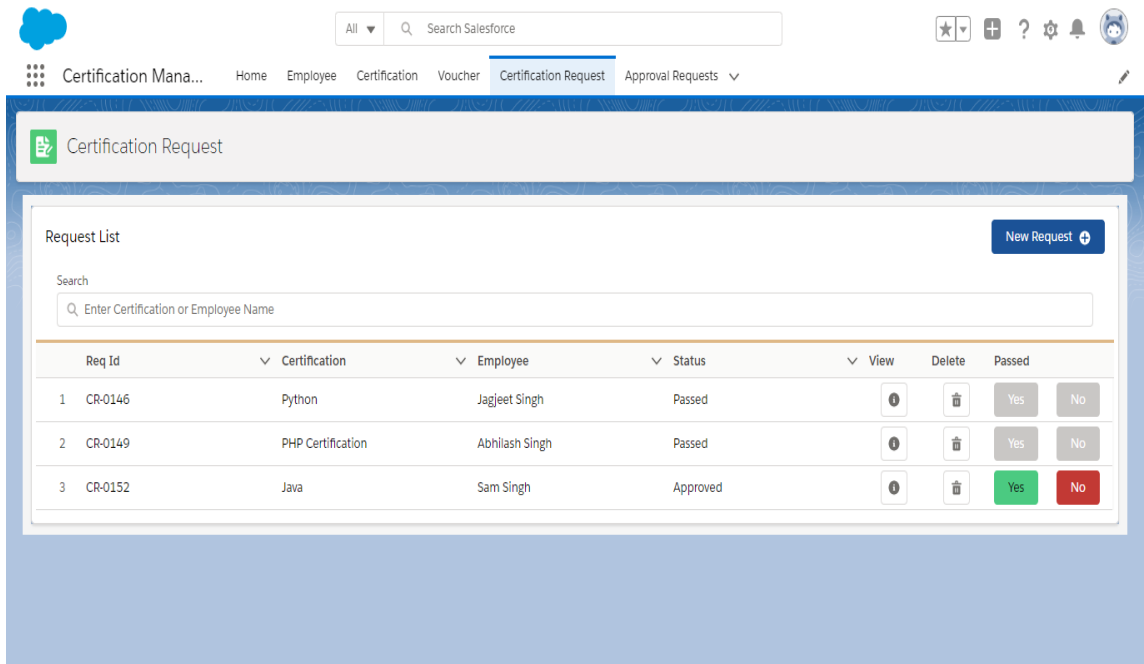
5. Certification Request Pages

a. Add Certification Request



The screenshot shows the 'Add Certification Request' page. At the top, there's a navigation bar with a cloud icon, a search bar labeled 'Search Salesforce', and several utility icons (star, plus, question mark, gear, bell, and a user profile). Below the navigation bar is a breadcrumb trail: 'Certification Mana...' > 'Home' > 'Employee' > 'Certification' > 'Voucher' > 'Certification Request' > 'Approval Requests'. The main header of the page is 'Certification Request'. The form itself is titled 'Add Certification Request' and includes a 'Show Requests' button. The form fields are: '* Certification' (a search bar with placeholder 'Search Certifications...'), '* Employee' (a search bar with placeholder 'Search Employees...'), 'Voucher' (a search bar with placeholder 'Search Vouchers...'), '* Due Date' (a date picker), and 'Comments' (a text area). At the bottom of the form are two buttons: 'Add Request' (blue) and 'Reset' (red).

b. List of Certification Requests



The screenshot shows the 'List of Certification Requests' page. At the top, there's a navigation bar with a cloud icon, a search bar labeled 'Search Salesforce', and several utility icons (star, plus, question mark, gear, bell, and a user profile). Below the navigation bar is a breadcrumb trail: 'Certification Mana...' > 'Home' > 'Employee' > 'Certification' > 'Voucher' > 'Certification Request' > 'Approval Requests'. The main header of the page is 'Certification Request'. The table is titled 'Request List' and includes a 'New Request' button. The table has a search bar with placeholder 'Enter Certification or Employee Name'. The table columns are: 'Req Id', 'Certification', 'Employee', 'Status', 'View', 'Delete', and 'Passed'. The 'Passed' column has two sub-columns: 'Yes' and 'No'. The table contains three rows of data:

Req Id	Certification	Employee	Status	View	Delete	Passed
1 CR-0146	Python	Jagjeet Singh	Passed			<input type="button" value="Yes"/> <input type="button" value="No"/>
2 CR-0149	PHP Certification	Abhiliash Singh	Passed			<input type="button" value="Yes"/> <input type="button" value="No"/>
3 CR-0152	Java	Sam Singh	Approved			<input checked="" type="button" value="Yes"/> <input type="button" value="No"/>

c. View Record Data

The screenshot displays a Salesforce application interface for managing certification requests. The top navigation bar includes a search bar labeled 'Search Salesforce' and a menu with options like 'Home', 'Employee', 'Certification', 'Voucher', 'Certification Request', and 'Approval Requests'. The main content area is titled 'Certification Request' and features a 'Request List' table. A modal window titled 'Request Detail' is open, showing the following information:

Field	Value
Request Id :	CR-0146
Certification :	Python
Employee :	Jagjeet Singh
Voucher :	Python V1
Due Date :	May 12, 2020
Status :	Passed
Comments :	

The background 'Request List' table contains the following data:

Req Id	Certification	Employee	Status
1 CR-0146	Python	Jagjeet Singh	Approved
2 CR-0149	PHP		
3 CR-0152	Java	Sam Singh	Approved