Build A Employee Travel Approval Application For Corporates

NAAN MUDHALVAN PROJECT REPORT

Submitted by

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TABLE OF CONTENTS

Chapter No	Title	Page No
	LIST OF FIGURES	5
	LIST OF ABBREVIATION	6
1.	PROJECT SPECIFICATION	7
	1.1 Project Goal	7
	1.2 Project Scope	8
	1.3 Problem Statement Definition	9
	1.4 Empathy Map Canvas	10
	1.5 Ideation & Brainstorming	11
	1.6 Proposed Solution	14
	1.7 Functional & Technical Requirements	16
	1.8 Project Road Map	19
2	PREPARATION DATA MODELING	23
	2.1 Salesforce Developer Org	23
	2.2 Custom Object Creation & Tabs	25
	2.3 Lightning App	29
	2.4 Relationship between Objects	31
	2.5 Customize User Interface	33
	2.6 Business Logic	37
3.	Users & Data Security	38
	3.1 User Creation & Setup Approvals	38
4.	Automation	40
	4.1 Flow	40
	4.2 Approval Process	42
5.	Reports & Dashboard	48
	5.1 Reports	48
	5.2 Dashboard	50
6.	Conclusion	51
7.	Project Demonstration	52
	Github & Project Video Demo Link	52

LIST OF FIGURES

Figure No	Name Of Figure	Page No
1.8.1	Data Flow Diagram	19
1.8.2	Technical Architecture	20

LIST OF ABBREVIATION

CRM Customer Relationship Management

ESP Email Service Provider

UI User Interface

UX User Experience

OWD Org - Wide Default

CTA Call To Action

CSV Comma - Separated Values

SLA Service Level Agreement

API Application Programming Interface

SaaS Software as a Service
PaaS Platform as a Service

CHAPTER-1

PROJECT SPECIFICATION

Project Goal

Building an Employee Travel Approval Application for corporate use within the Salesforce platform involves a multi-faceted approach, starting with requirements gathering to define user roles and workflows. A well-structured data model captures essential information, and user-friendly interfaces for both employees and managers streamline the travel request and approval process. Workflow automation facilitates efficient routing and notifications, while integrations with external systems like expense management tools enhance data accuracy.

Robust reporting and analytics tools offer insights, and mobile app development ensures accessibility on-the-go. Security and compliance measures safeguard sensitive data, and thorough testing ensures a reliable application. Training and documentation support user adoption, and ongoing maintenance and improvements address evolving needs. Scalability planning and future enhancements cater to growing demands, while comprehensive documentation maintains transparency, ultimately streamlining the travel approval process and enhancing efficiency.

Project Scope

The Employee Travel Approval Application built in Salesforce serves a vital purpose in corporate travel management. Firstly, it streamlines and automates the often complex and time-consuming travel request and approval process. This efficiency results in reduced administrative burdens, faster approval times, and improved communication between employees and managers. With the ability to centralize all travel-related data, the application ensures data accuracy and compliance with corporate policies and regulatory requirements, contributing to better financial management and accountability.

The application fosters transparency throughout the travel approval workflow. Both employees and managers can easily track the status of travel requests, which enhances visibility into the process. By providing a clear overview of approval progress, it minimizes potential delays and miscommunication, ultimately improving the user experience and helping employees plan their travel more effectively.

The Employee Travel Approval Application in Salesforce offers robust security, ensuring that sensitive data is protected while also providing scalability for future growth. The built-in reporting and analytics tools offer insights into travel expenses and approval metrics, supporting data-driven decision-making. By facilitating on-the-go access through mobile app development, the application empowers employees and managers to manage travel efficiently and enhances the organization's overall travel management capabilities. In conclusion, the application optimizes corporate travel management by enhancing efficiency, transparency, and control, ultimately leading to cost savings and a more seamless user experience.

Problem Statement Definition

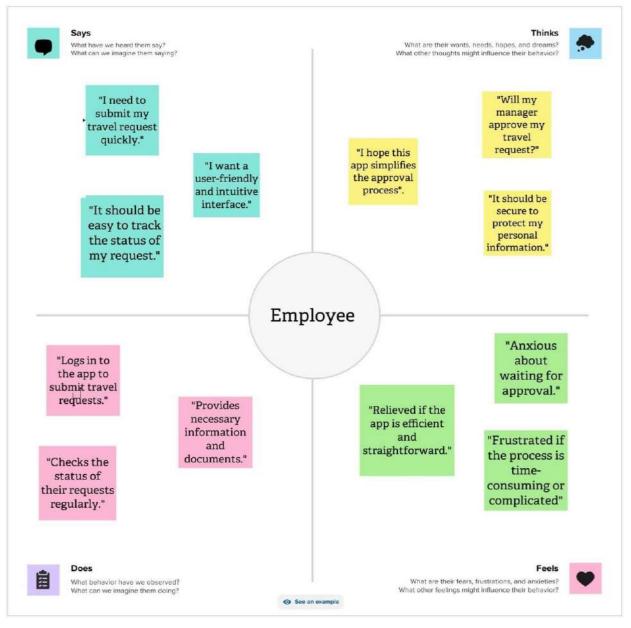


Problem Statement (PS)	I am (Employee)	I'm trying to	But	Because	Which makes me feel
PS	Employee	I am trying to streamline and simplify the process of submitting, tracking, and approving travel requests to ensure a smoother travel experience	But the current process is manual, time-consuming, and lacks transparency, resulting in delays and confusion.	Because this inefficiency in the travel approval process creates frustration, adds unnecessary administrative work, and can lead to financial discrepancies	Which makes me feel frustrated, anxious about travel plans, and often uncertain about the status of my request, ultimately affecting my overall job satisfaction and productivity

Empathy Map Canvas

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behavior and attitudes.

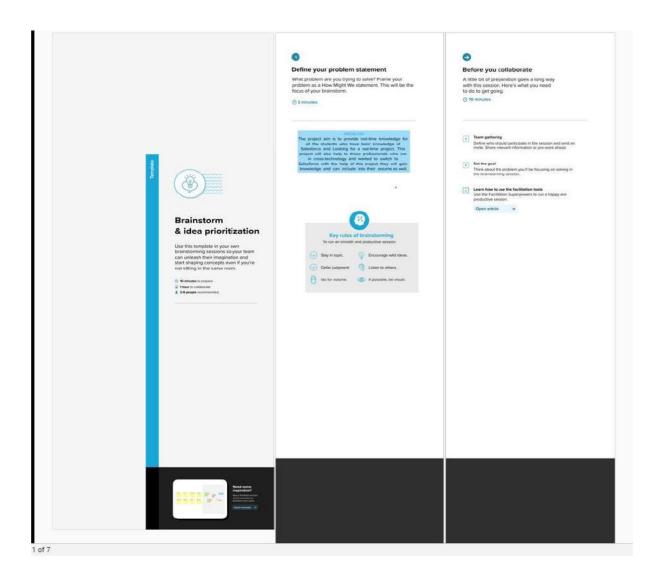
It is a useful tool to helps teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.



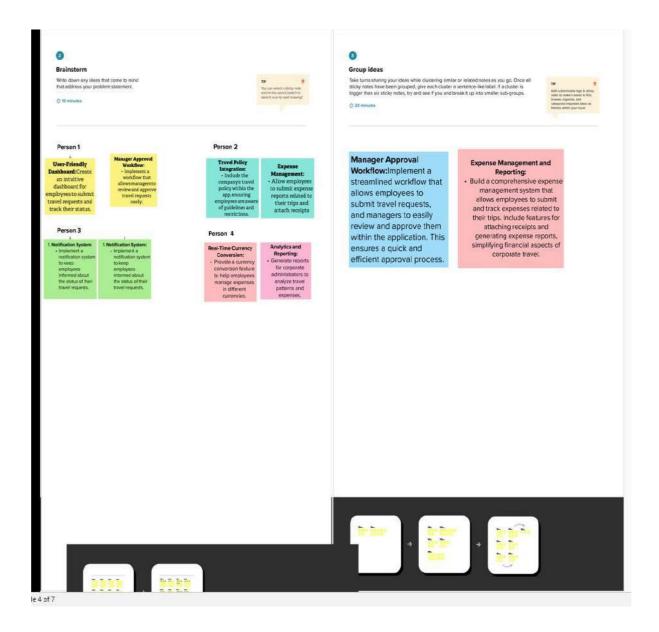
Ideation & Brainstorming

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

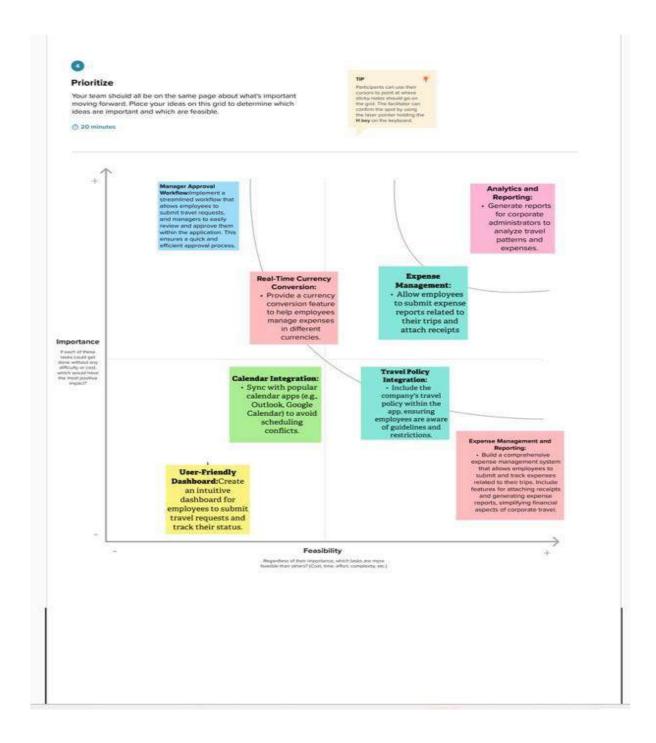
Step-1: Team Gathering, Collaboration and Select the Problem Statement:



Step-2: Brainstorm, Idea Listing and Grouping:



Step-3: Idea Prioritization:



Proposed Solution

S. No	Parameter	Description	
1.	Problem Statement (Problem to be	Corporates often grapple with inefficient and	
	solved)	manual travel approval processes that involve	
		paperwork and a lack of transparency. These	
		outdated methods lead to delays, increased	
		administrative work, and potential compliance	
		issues. The process is a source of stress for	
		employees who require timely approvals to	
		plan their business trips effectively, and it	
		leaves them dissatisfied with the process.	
		Managers, on the other hand, struggle to	
		review and manage a high volume of travel	
		requests while ensuring compliance. The	
		absence of transparency leads to bottlenecks	
		and a lack of visibility, leaving them	
		overwhelmed and frustrated.	
		Our proposed solution is to develop an	
2.	Idea / Solution description	Employee Travel Approval Application within	
		Salesforce, offering automation and	
		centralization. The application will provide a	
		user-friendly and automated system that	
		allows employees to submit travel requests	
		seamlessly. Managers will be able to review	
		and approve them efficiently, while the	
		system offers real-time tracking of request	
		statuses. It will also include integration with	
		external systems for expense management,	
		robust security measures, mobile accessibility	
		and analytics tools for data-driven decision-	
		making. The benefits include reduced	
		administrative burdens, improved	
		communication, cost control, and better	
		compliance with corporate policies and	
		regulations.	

3. Novelty / Uniqueness

What sets our solution apart is the innovative use of Salesforce, a highly customizable and powerful platform, to streamline corporate travel management. The automation of approval workflows and integration with external systems will significantly reduce manual work and errors. The mobile app component will provide users with the flexibility and convenience of on-the-go access. Furthermore, the incorporation of robust reporting and analytics tools will enable data-driven decision-making and offer insights into travel expenses, setting our solution apart from conventional methods.

4. Social Impact / Customer Satisfaction

Our application will have a substantial social impact by enhancing the user experience in corporate travel management. Employees and managers will benefit from a smoother, more transparent, and efficient travel approval process, reducing frustration and uncertainty. The streamlined process will free up time and resources for more strategic tasks, thereby improving overall workforce productivity. Data-driven decision-making will lead to better cost management, making it easier to control expenses and ensuring financial compliance. The application will also guarantee compliance with corporate policies and regulatory requirements, reducing risks and ensuring data security. Lastly, by optimizing travel planning, our solution can contribute to a more sustainable approach to business travel, aligning with corporate sustainability goals.

Functional & Technical Requirements

Functional Requirements

FR	Functional Requirement	Sub Requirement (Story / Sub-Task)	
No.	(Epic)		
FR-1	User Management	User Registration: Allow employees to register and	
		log into the system.	
		User Roles: Define roles (employees, managers,	
		travel administrators) with different permissions.	
		User Profiles: Capture and manage user profiles,	
		including contact details.	
FR-2	Travel Request Submission	Travel Request Form: Provide an intuitive form for	
		employees to submit travel requests.	
		Expense Entry: Allow users to enter estimated	
		expenses, including flights, accommodation, meals,	
		and incidentals.	
		Travel Dates: Specify departure and return dates,	
		including the option for flexible schedules.	
		Attachments: Enable the attachment of supporting	
		documents, such as itineraries or conference detail	
FR-3	Approval workflow	Workflow Automation: Implement an automated	
		approval process with defined workflows.	
		Manager Assignment: Automatically route requests	
		to the appropriate manager based on criteria like	
		department or project.	
		Notifications: Send notifications to managers and	
		employees at various stages of the approval process.	
		Delegation : Allow managers to delegate their	
		approval authority when they are unavailable.	
FR-4	Approval Management	Manager Dashboard: Provide managers with a	
		dashboard to view and manage pending travel	
		requests.	
		Request Review: Allow managers to review travel details, expense estimates, and supporting	
		documents.	
		Approval/Rejection: Enable managers to approve	
		or reject requests with comments.	
		Escalation: Implement escalation processes for	
		unattended requests or those exceeding certain	
		thresholds	

Build A Employee Travel Approval Application For Corporates

FR-5	Expense Tracking	Expense Tracking: Record actual expenses	
		incurred during the trip.	
		Receipt Upload: Allow users to upload expense	
		receipts for verification.	
		Expense Categories: Categorize expenses (e.g.,	
		transportation, lodging, meals) for reporting.	
		Expense Reconciliation: Compare estimated and	
		actual expenses for cost control.	
FR-6	Reporting and	Reporting Tools: Develop custom reports and	
	Analytics	dashboards to monitor travel request status and	
		expenses.	
		Analytics: Implement data analytics for insights	
		into travel patterns, expenses, and approval	
		efficiency.	
		Export: Allow users to export reports for offline	
		use or sharing	

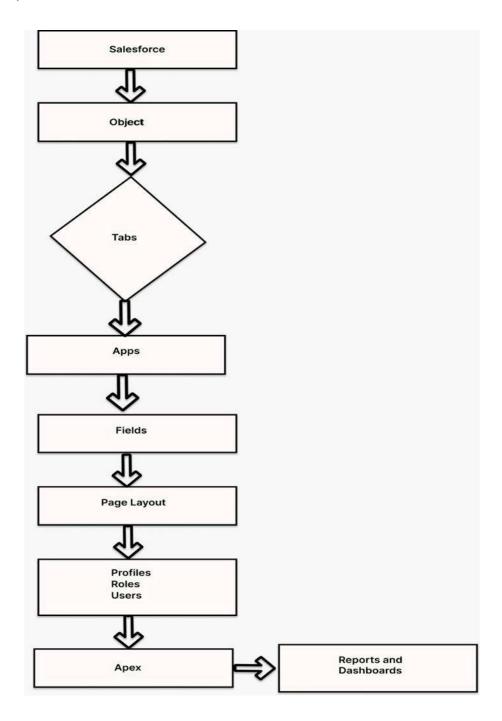
Technical Requirements

TR	Technical Requirement	Description	
No.			
TR-1	Salesforce Environment	Utilize Salesforce's Enterprise or Unlimited	
		edition to ensure scalability and access to	
		advanced features.	
TR-2	Development language	Develop using Salesforce's proprietary	
		programming language, Apex, for server-	
		side logic.	
TR-3	Security	 Implement role-based access control 	
		(RBAC) to control who can access and	
		modify data.	
		 Encrypt sensitive data both in transit and 	
		at rest.	
		Utilize Salesforce Shield for enhanced	
		security, including event monitoring and	
		field-level encryption.	
TR-4	Integration	Use REST and SOAP APIs for integration	
		with external systems, such as finance and	
		expense management tools.	
		• Implement Single Sign-On (SSO)	
		solutions for seamless and secure access.	
TR-5	Customization	Allow administrators to customize and configure	
		the application, including approval workflows,	
		fields, and user profiles.	
TR-6	Mobile Accessibility	Ensure that the application is accessible	
		via the Salesforce mobile app for on-the-	
		go request submission and tracking.	
		 Develop a custom mobile app using 	
		Salesforce Mobile SDK for more tailored	
		mobile functionality.	

Project Road Map

Data Flow Diagram

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



Technical Architecture

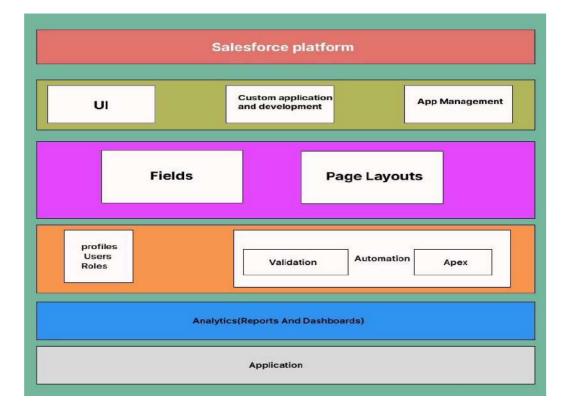


TABLE-1: Component and Technologies:

S.No	Component	Description	Technology
1.	User Interface	Lightning Components: Use Salesforce	Salesforce
		Lightning components to design the user	
		interface for employees, managers, and	
		administrators.	
		Custom Pages: Create custom Visualforce	
		pages for more tailored and complex UI	
		elements	
2.	Data Model	Custom Objects: Define custom objects	Salesforce
		in Salesforce to represent entities like	
		travel requests, expenses, and approvals.	
		Master-Detail and Lookup	
		Relationships: Establish relationships	
		between objects to maintain data	
		integrity.	
		Custom Fields: Create custom fields to	
		capture specific information, such as	
		travel dates, expenses, and approval	
		status.	

Build A Employee Travel Approval Application For Corporates

3.	Workflow	Approval Processes: Implement	Salesforce
	Automation	Salesforce Approval Processes to	
		automate and streamline the travel request	
		approval workflow.	
		Process Builder and Flows: Use Process	
		Builder and Flows to automate routine	
		tasks and send notifications.	
4.	Reporting and	Custom Reports: Create custom	Salesforce
	Analytics	reports to track travel request status,	
		expenses, and other relevant metrics.	
5.	Security	Role-Based Access Control (RBAC):	Salesforce
		Configure RBAC to control who can	
		access and modify data.	
		Data Encryption: Encrypt sensitive data	
		both in transit and at rest.	
		Audit Trails: Maintain audit trails to log	
		user activities for security and compliance	
		purposes.	
6.	Salesforce	Apex: Use Salesforce's proprietary programming	Salesforce
	Development	language, Apex, for server-side logic and data	
		manipulation.	
		Visualforce: Develop custom user interfaces with	
		Visualforce pages and components.	
		Lightning Web Components: Create modern,	
		component-based UIs using Lightning Web	
		Components for a more responsive and dynamic	
		user experience	

Table-2: Application Characteristics:

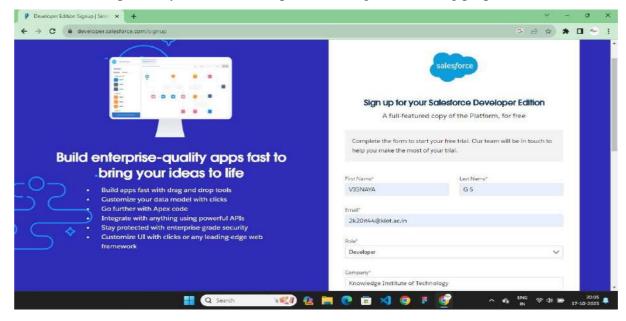
S. No	Characteristics	Description	Technology
1.	Responsive	Implement responsive design to adapt salesforce	
	Design	to various screen sizes, ensuring a	
		consistent and visually pleasing user	
	A 11.11.	experience.	1.6
2.	Accessibility	Ensure that the application is	salesforce
		accessible via multiple devices and	
		browsers, catering to users on	
		desktops, tablets, and mobile devices.	
		This accessibility is crucial for users	
		who need to make or approve travel	
		requests while on the go.	
3.	User-	The application should have an	Salesforce
	friendly	intuitive and user-friendly interface to	
		make it easy for employees, managers,	
		and administrators to navigate and use	
		the system without extensive training.	
4.	Scalability	The application should be able to	salesforce
		scale with the growing number of	
		users and data, accommodating	
		increasing demands without	
		significant performance degradation.	
5.	Performance	Ensure the application's performance	salesforce
		meets or exceeds user expectations,	
		with rapid response times for actions	
		such as submitting requests or	
		generating reports.	
6.	Reporting	Enable users to generate custom	salesforce
	and	reports and access analytics tools to	
	Analytics	gain insights into travel patterns,	
		expenses, and approval efficiency.	
	I		1

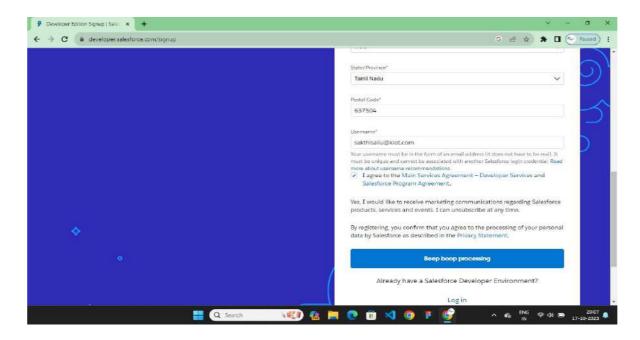
CHAPTER-2

PREPARATION DATA MODELING

Salesforce Developer Org

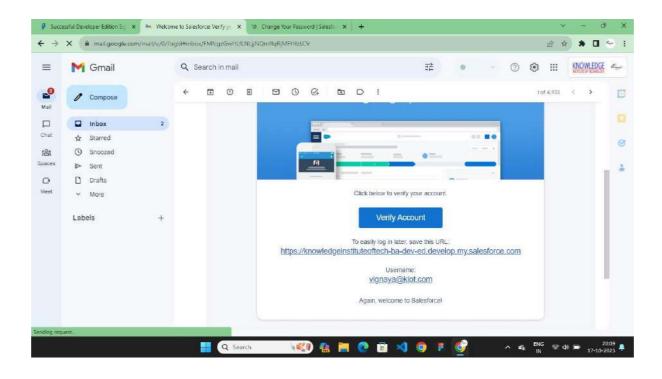
In Salesforce, a Developer Sign Up or Developer Edition is a special type of Salesforce environment that is primarily used for development, testing, and learning purposes.

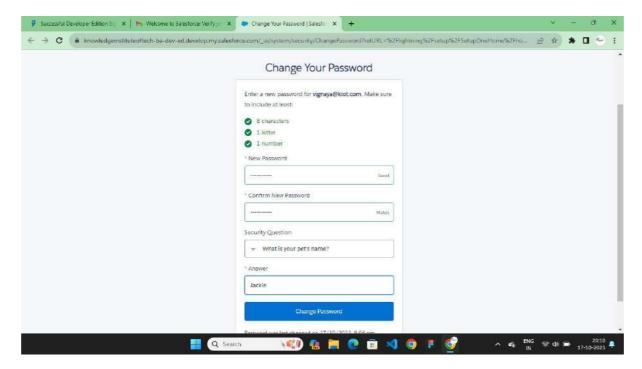




Account Activation

Activation tracks information about devices from which users have verified their identity.





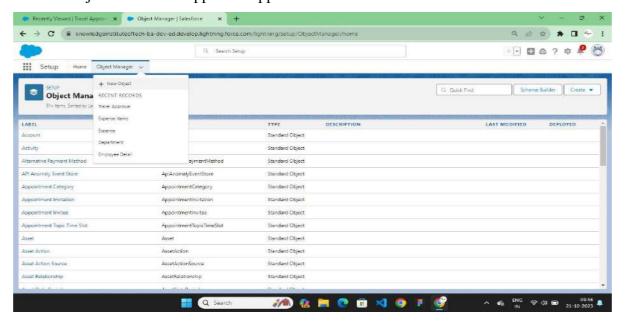
Custom Object Creation & Tabs

Custom Object Creation

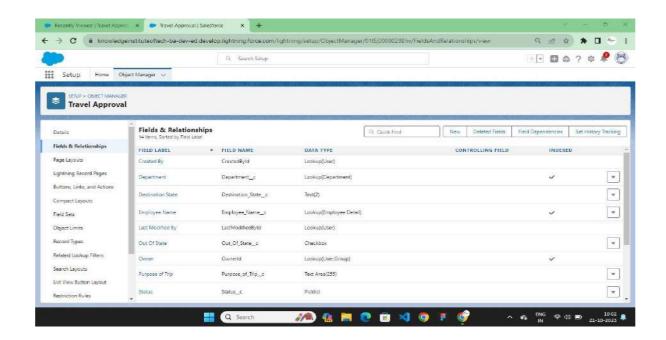
Objects are containers for your information, but they also give you special functionality.

Custom objects are create to store information that's specific to your company or industry.

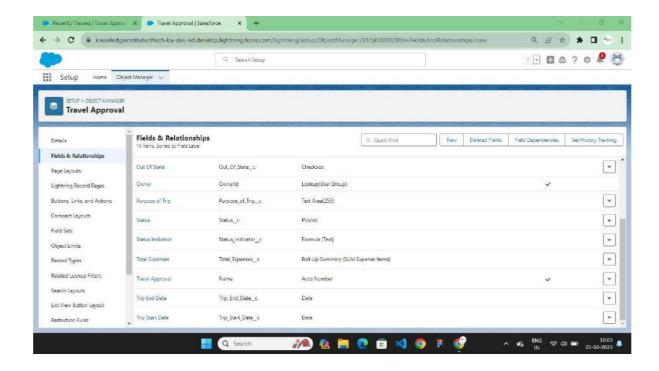
Custom Objects in Travel Approval App:



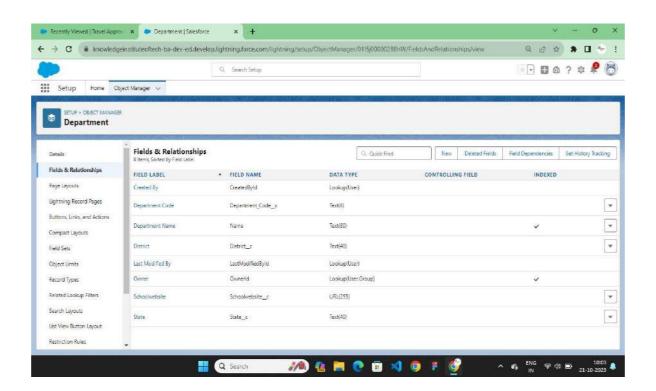
Fields in Travel Approval Object



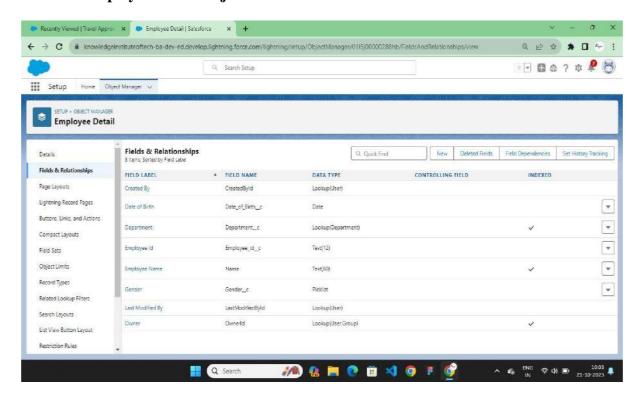
Build A Employee Travel Approval Application For Corporates



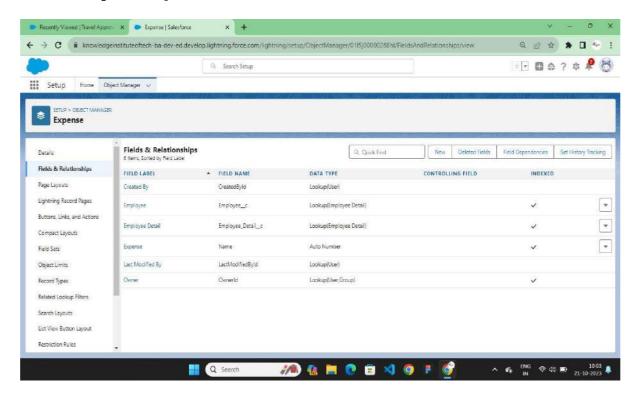
Fields in Department Object



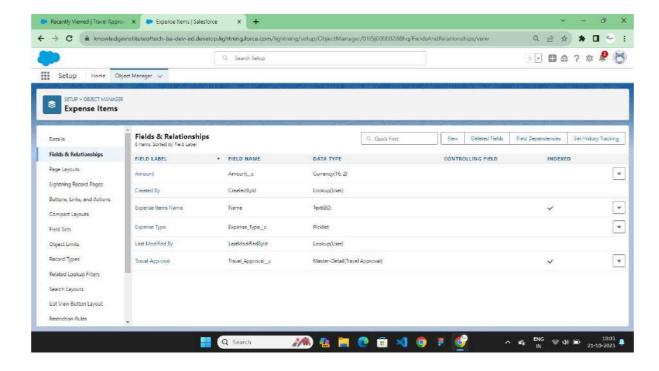
Fields in Employee Detail Object



Fields in Expense Object

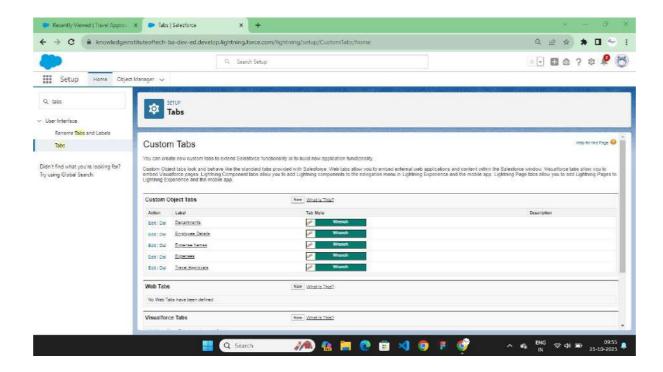


Fields in Expense Items Object



Tabs

Salesforce Tabs are like the menu options in a software application. They allow you to access specific functions, objects, or data.

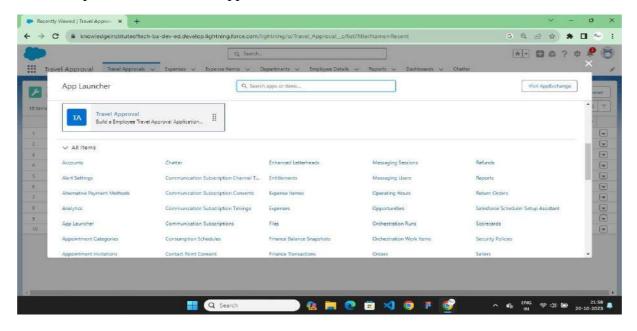


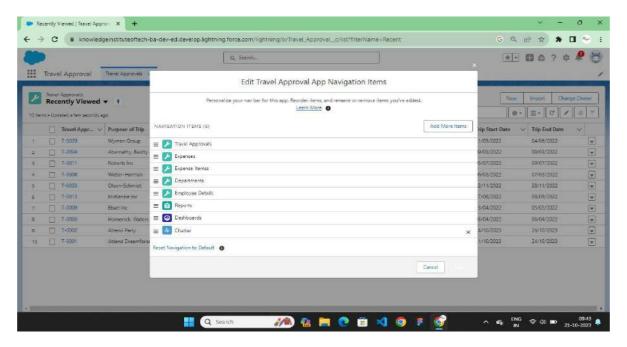
Lightning App

The Lightning App Builder is a point-and-click tool that makes it easy to create custom pages for the Salesforce mobile app and Lightning Experience, giving your users what they need all in one place.

Create a Travel Approval Lightning App

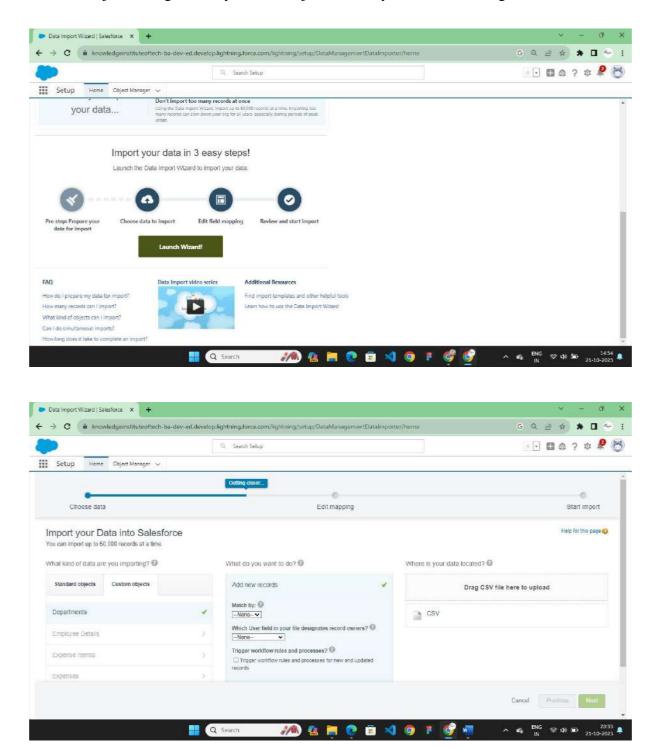
- Build a Lightning app, add tabs, and customize page layouts.
- Create custom objects and fields for the app.
- Define relationships between objects.
- Import data and test the app.





Data Import

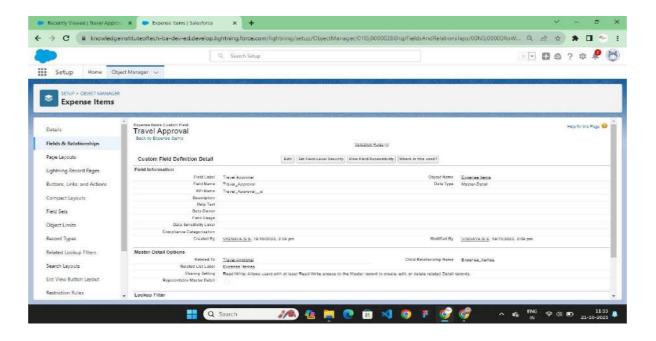
The Data Import Wizard is one of various tools available to Salesforce users for importing data. The tool is best used when importing data into the Account, Contact, Lead, or Solution objects along with any custom objects within your Salesforce organization



Relationship between Objects

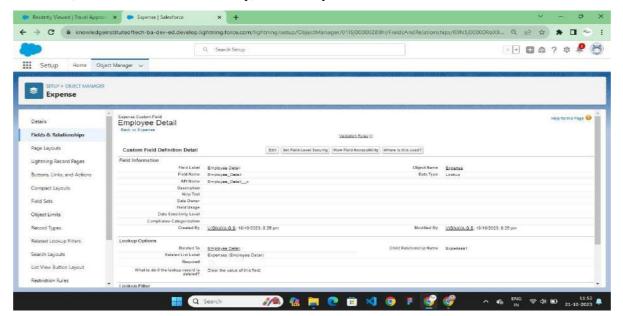
Master-Detail Relationship

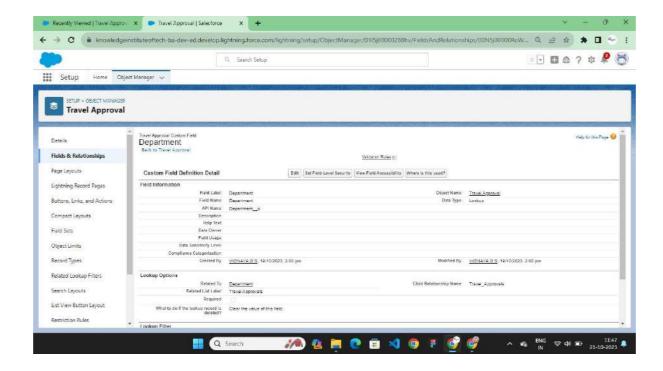
A master-detail relationship defines the relationship between the parent and the child. The master table defines the parent relation and the detail defines the child relation.



Look up Relationship

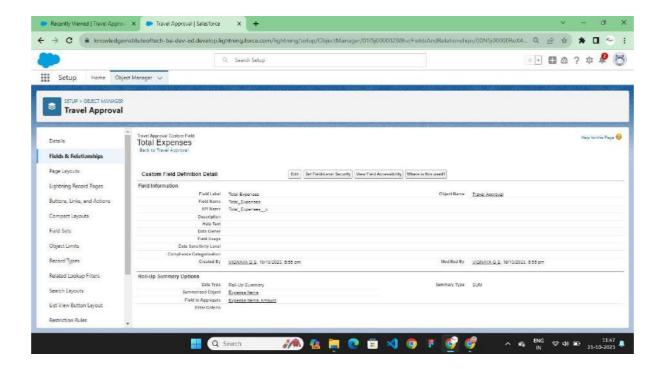
Lookup Relationship in Salesforce relates two objects together but does not affect deletion (cascade delete functionality) or security.





Roll-up Summary

Roll-Up Summary Fields in Salesforce summarize data of particular fields from a set of related detail records and automatically display the output on the master record.

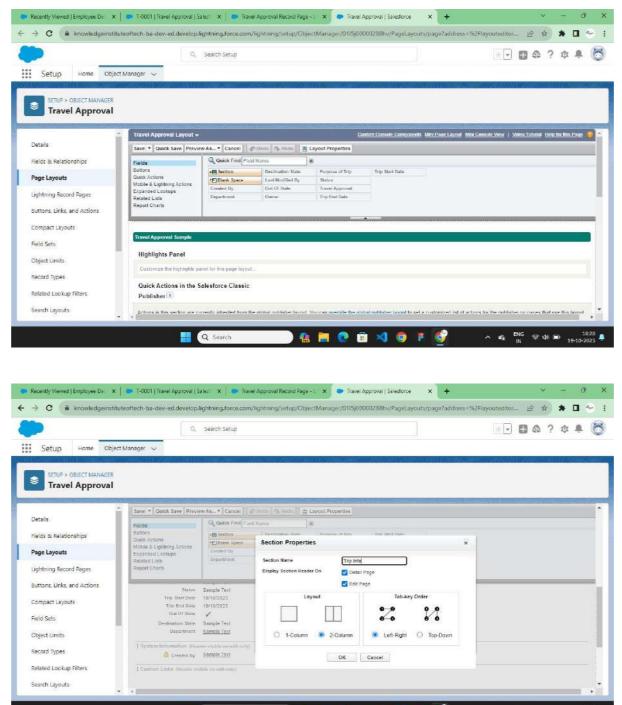


Customize User Interface

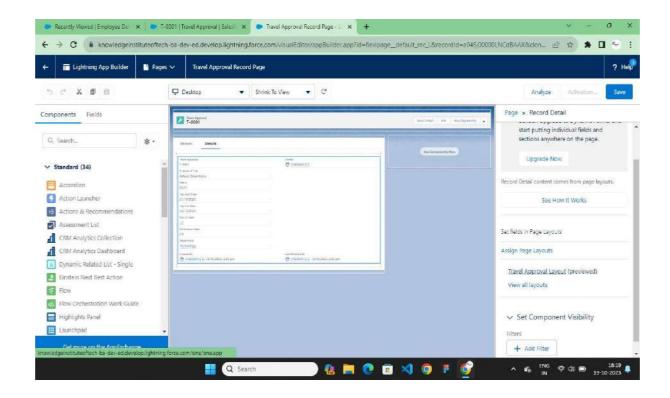
Customize your app's page layouts, compact layouts, and actions.

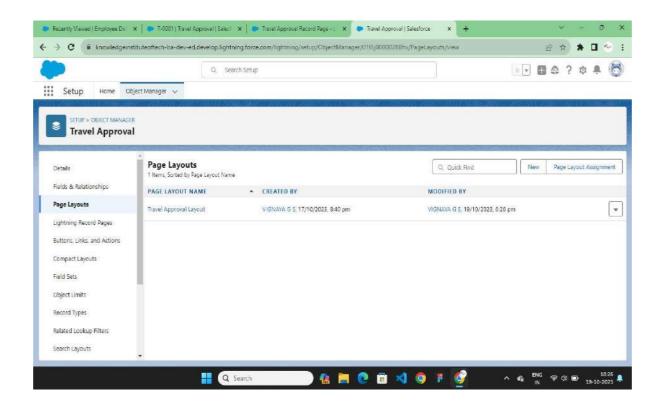
Page Layout

A page layout determines the fields, sections, related lists, and buttons that appear when users view or edit a record. You can modify an object's default page layout or create a custom page layout.

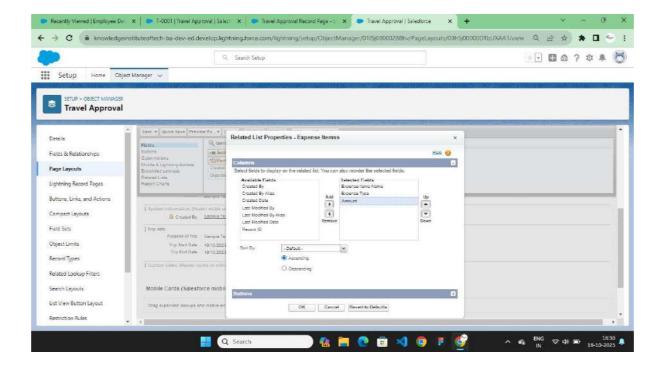


Build A Employee Travel Approval Application For Corporates



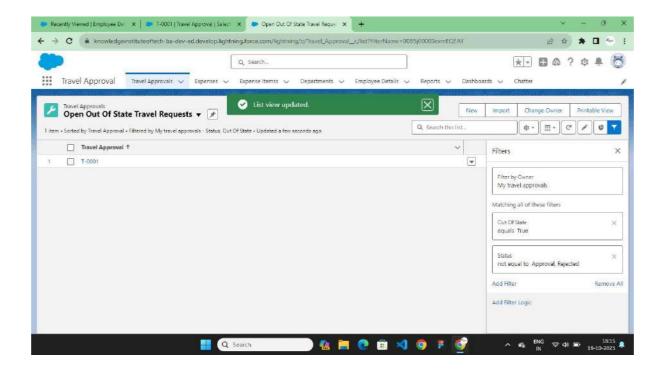


Build A Employee Travel Approval Application For Corporates



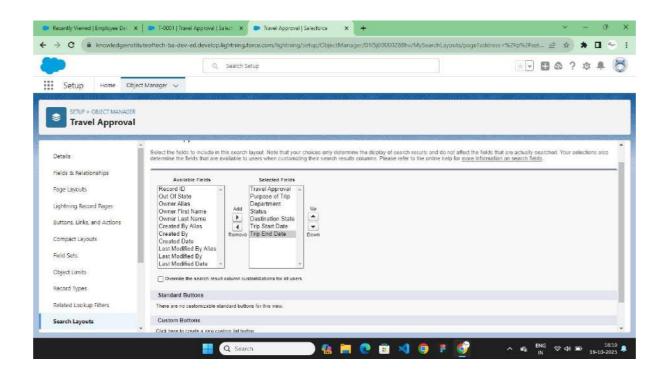
List View

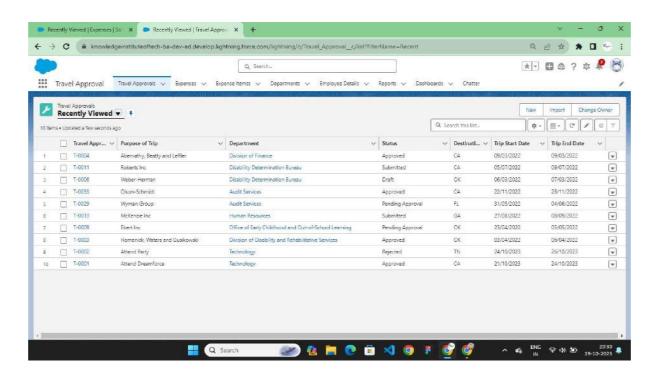
A list view is a set of search conditions that displays records that match the search conditions.



Search Layout

Create search layouts for standard and custom objects, ensuring the layout shows users what's most relevant to them.





Business Logic

Validation Rules

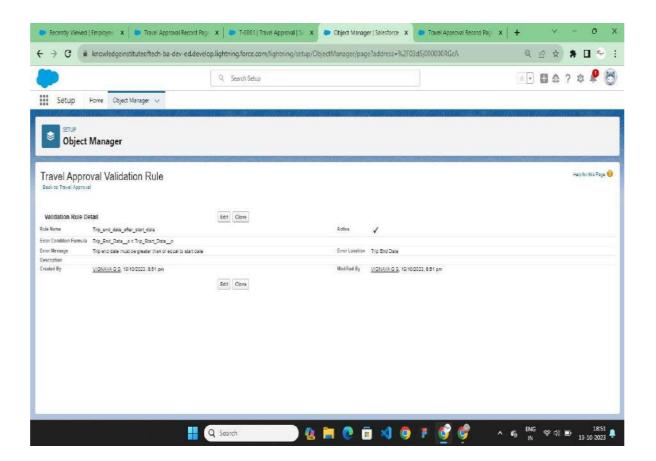
Validation rules let you set up business-specific criteria to prevent users from saving invalid data in one or more fields.

A validation rule evaluates a formula when a record is saved.

If a rule's criteria aren't met, users see a custom error message and the record doesn't save.

If a rule's criteria are met, the record saves.

Use validation rules to improve data quality by applying conditions, ensuring proper formatting, and enforcing consistency.

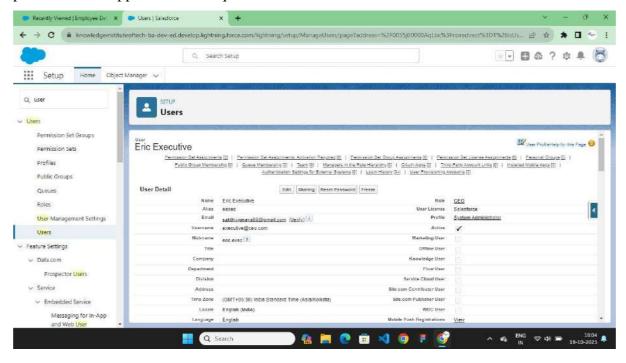


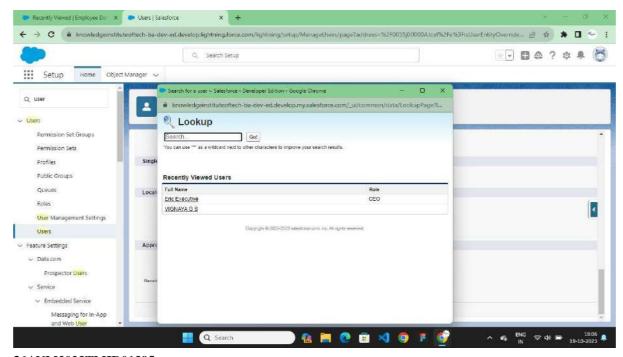
CHAPTER-3

USERS & DATA SECURITY

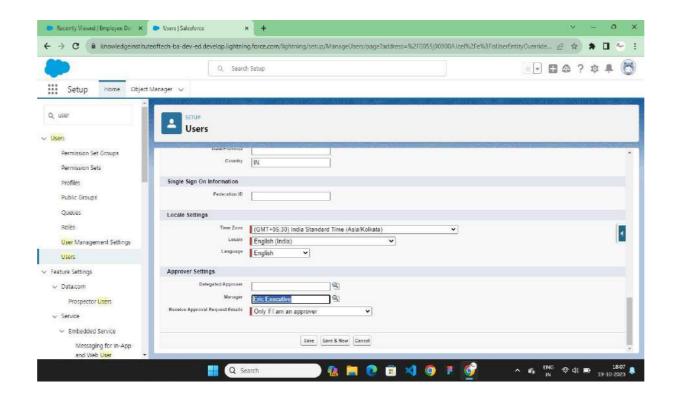
3.1 User Creation & Setup Approvals

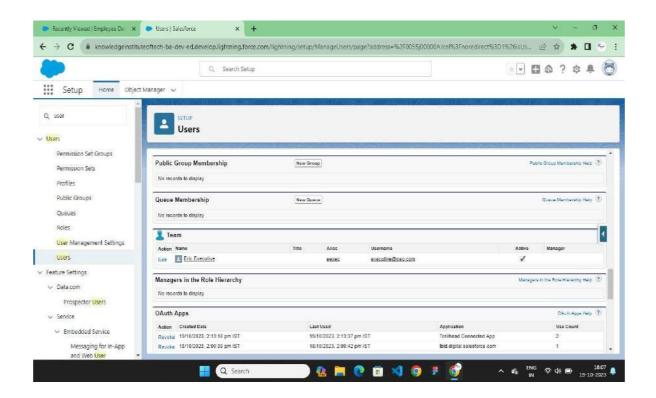
Before customizing the travel app, first create a new user, Eric Executive, and set him up as manager. This involves assigning roles and profiles so that Eric has the correct permissions to approve travel requests.





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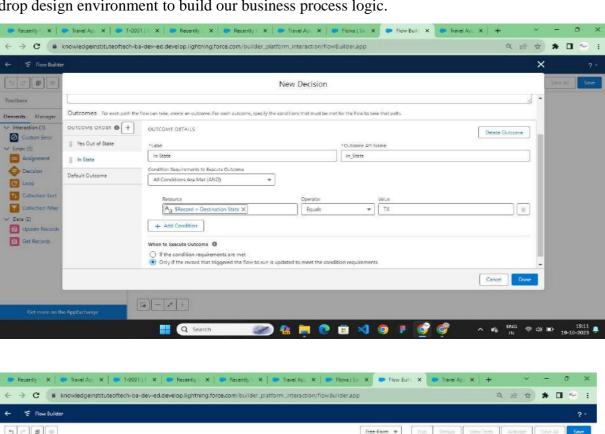


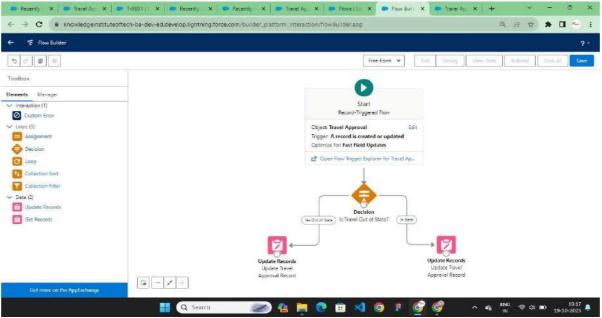


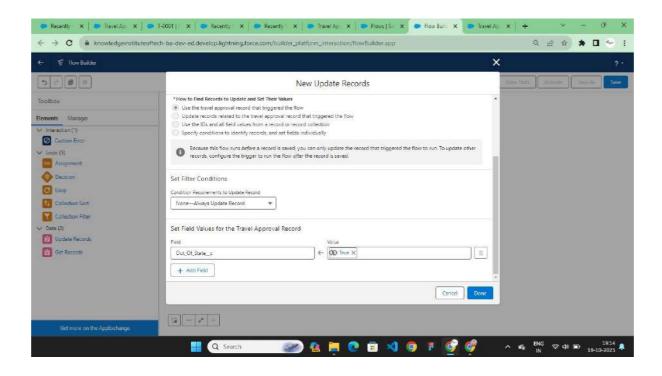
CHAPTER-4 AUTOMATION

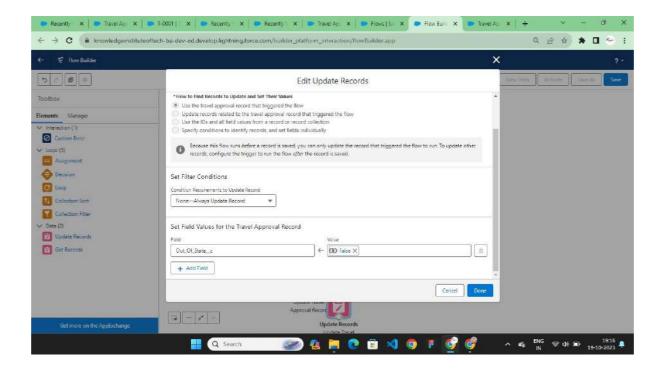
Flow

The last business rule functionality to implement before testing your application is a rule to set the Out-of-State checkbox field on the Travel Approval object if out-of-state travel has been chosen. Salesforce offers workflow capabilities that provide a declarative, drag-and-drop design environment to build our business process logic.







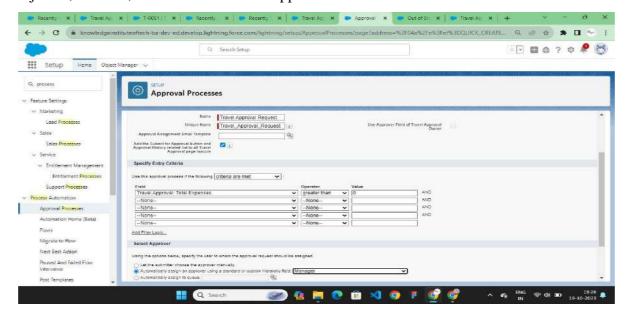


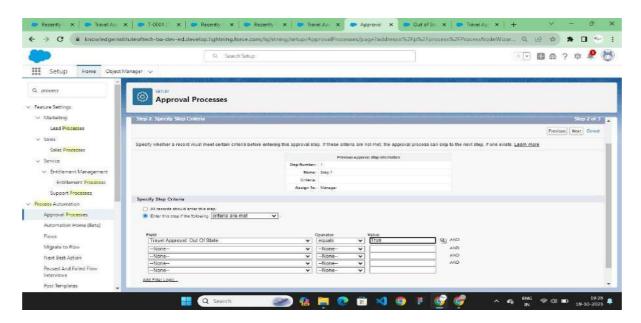
Approval Process

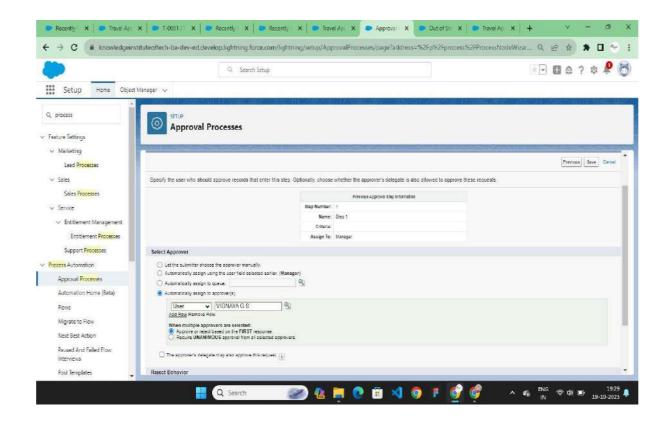
An approval process is an automated process your agency can use to approve records in Salesforce.

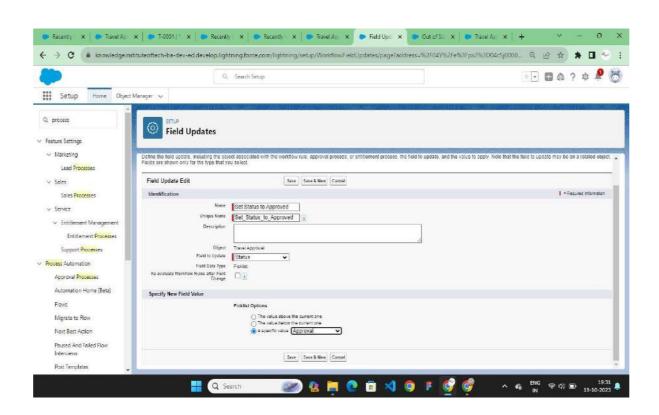
An approval process specifies the criteria a record must meet before it can be submitted for approval, the steps necessary for a record to be approved, and who must approve it at each step.

A step can apply to all records included in the process or just records that have certain attributes. An approval process also specifies the actions to take when a record is approved, rejected, recalled, or first submitted for approval.

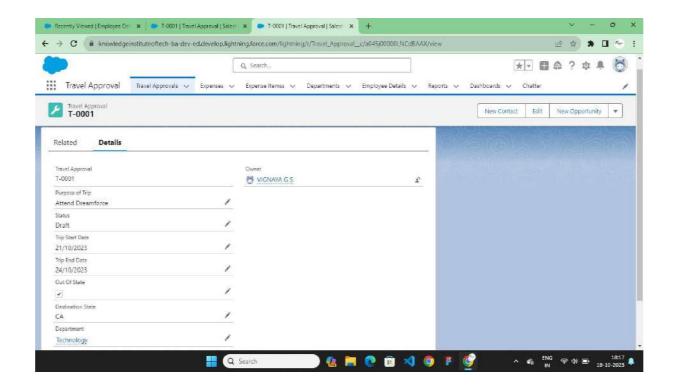


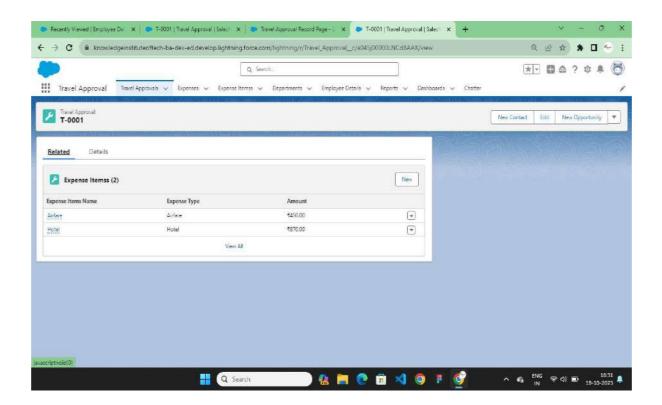


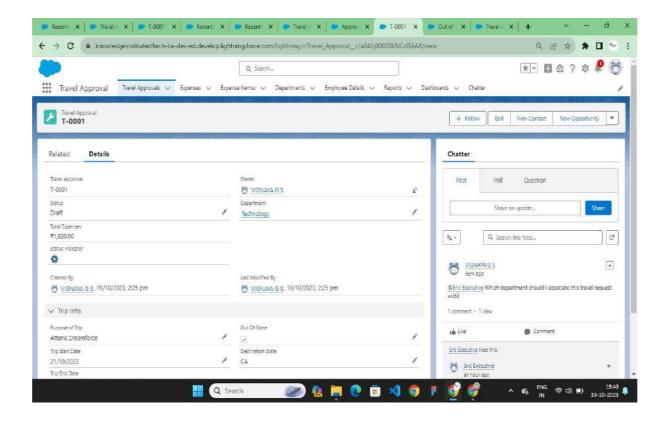


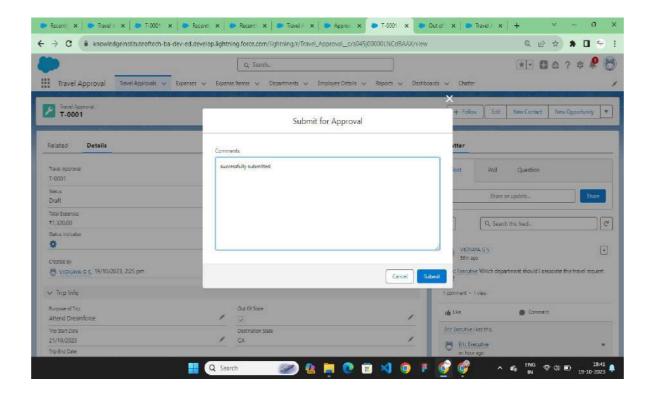


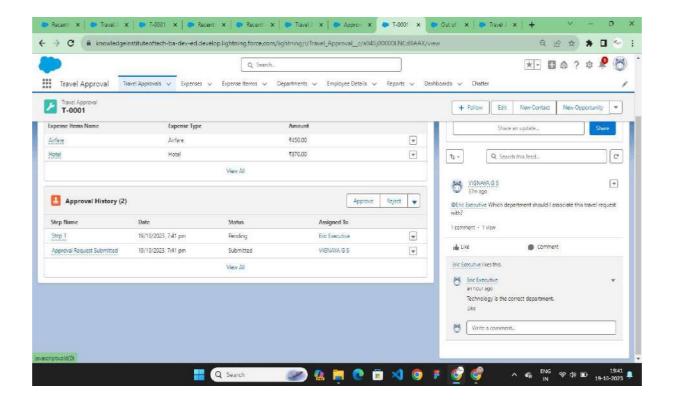
Final Views

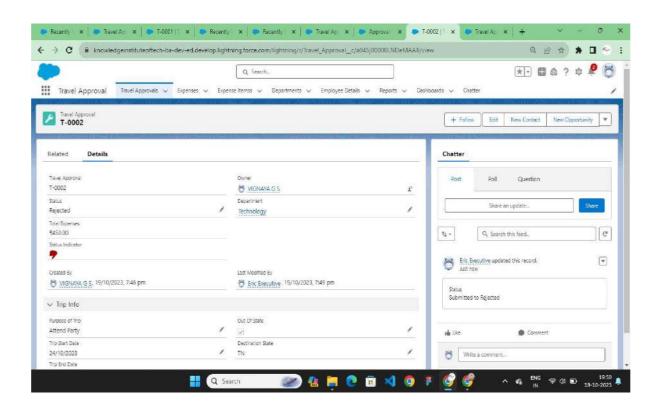


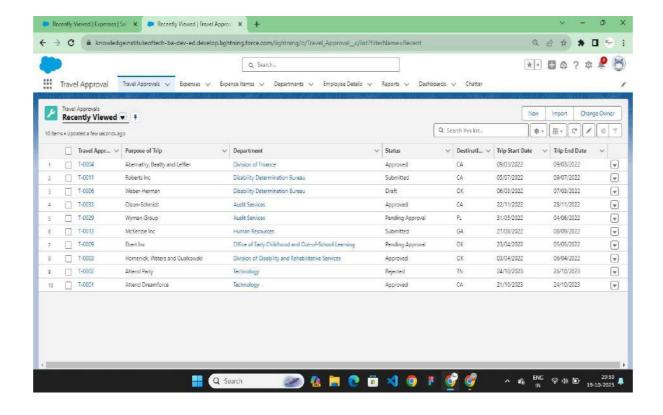


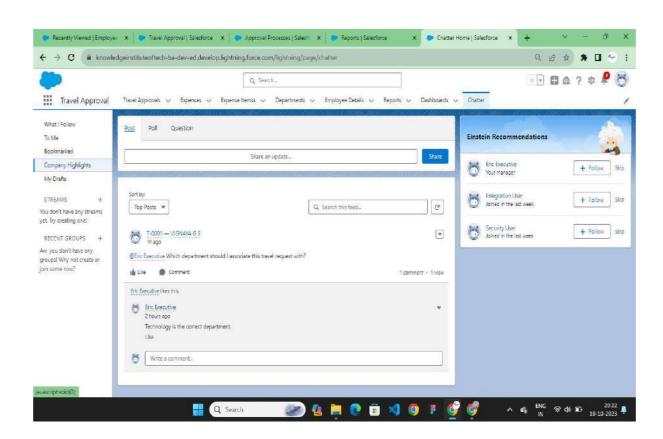












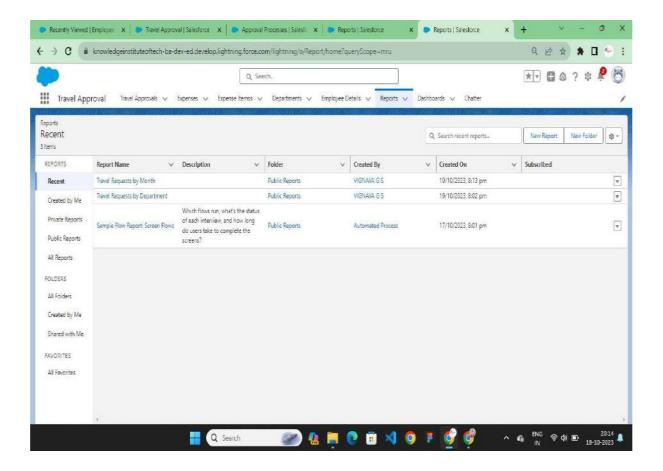
CHAPTER-5

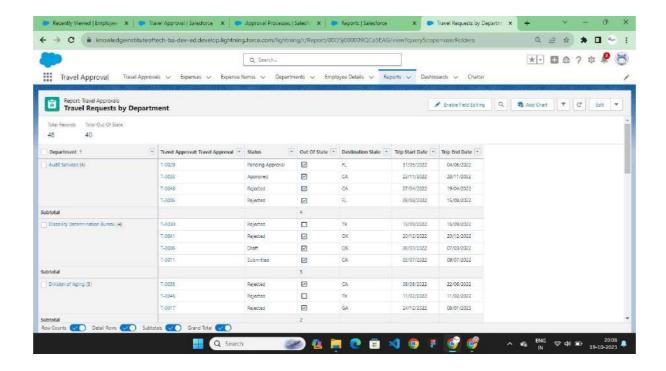
REPORTS & DASHBOARD

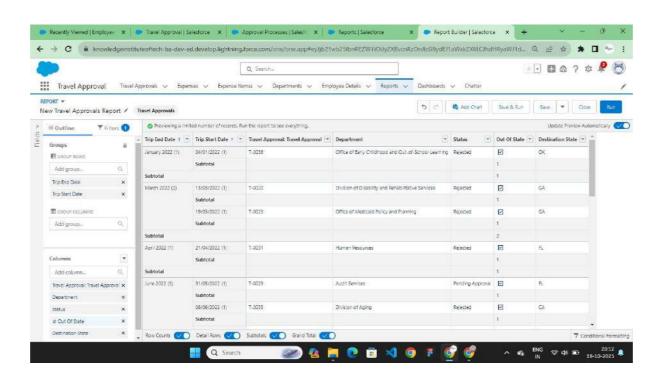
Reports

A Salesforce report is a list of data generated based on filter criteria. Salesforce Reports helped us predict trends and gives us the advantage to increase profits.

The report builder provides a drag-and-drop interface to easily build and customize your reports.

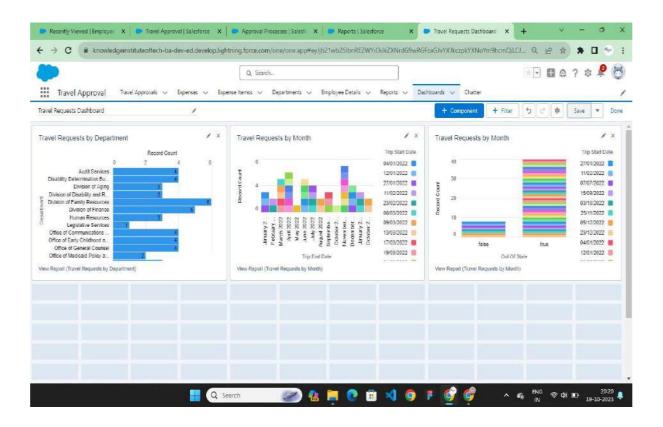






Dashboard

A dashboard provides an interactive visual display of key metrics and trends. Multiple dashboard components can be shown together on a single dashboard layout, creating rich visual displays of multiple reports that have a common theme.



CHAPTER-6

CONCLUSION

In conclusion, the development of an employee travel approval application for corporates is a critical step towards streamlining and enhancing the travel management process within organizations. This application serves as a centralized, efficient, and user-friendly tool for managing employee travel requests, approvals, and associated processes.

In building an employee travel approval application, it's essential to engage relevant stakeholders, including HR, finance, and IT teams, to ensure that the application aligns with organizational goals and requirements. Furthermore, thorough testing and training should be conducted to guarantee a smooth and successful implementation.

By addressing these key points and creating a tailored travel approval application that aligns with the unique needs and policies of the corporate, organizations can enhance their travel management processes, improve cost control, and provide a more satisfying experience for employees and travel administrators alike.

Build A Employee Travel Approval Application For Corporates

DEMONSTRATION

Github:

https://github.com/Priyanka6114/Build-a-Employee-Travel-Approval-Application-forcorporates

Demo Link:

https://drive.google.com/file/d/1dcV0TRgIZp5fHGe 7BqCEtcmrlse_X_OC/view?usp=drivesdk