



Improvisation of Salesforce Cloud Applications

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Abstract: Salesforce is one of the top cloud-based CRM software providers in the international market. It is a product-building platform using cloud computing concepts. It is designed for marketing, sales, and services. The Salesforce CRM does not require any technical knowledge to set up and manage the tool. It restructures the way businesses connect with their customers by creating a more meaningful relationship. The Salesforce CRM APP can provide a unique learning experience by providing a single view of each client interaction. The cloud services that provide on-demand access are running the world at a good pace. This paper presents the service of the cloud, which is Salesforce, and also the functionality of these services by introducing a design web portal for ordinary people who search for professionals for their construction work, like building a house, office, and more, using Salesforce. Salesforce is a suite of CRM (Customer Relationship Management) tools that are designed to help big and small businesses dramatically improve their customer service, retention rates, purchase analysis, and much, much more. Salesforce offers both SaaS and PaaS cloud services, as well as public and private cloud services.

Key words - Salesforce, Aura Components, Lightning Web Component, Apex, Visualforce, Java Script, HTML, CSS

1. INTRODUCTION

Salesforce Platform Force.com is a platform as a service (PaaS) that allows developers to create add-on applications that integrate into the main Salesforce.com application [1]. These third-party applications are hosted on Salesforce.com's infrastructure [2]. Salesforce's main technologies are tools for customer management. Other products let customers to create apps, integrate data from other systems, visualize data, and offer training courses. Trailhead is a free online learning platform with courses on Salesforce technologies, launched in 2014 [3]. Salesforce, a popular platform as a service, is a common way for organizations to store, transmit, and receive data locally and externally. With its built-in ability to let users write code to create specific REST services and an out-of-the-box database, Salesforce is a good platform to test the feasibility of a single coarse-grained REST web service that provides the ability to perform robust operations on multiple database records and specific operations to alter small pieces of information [4]. Today's CRM tools are supercharged with integrations that foster collaboration and access to accessible data—all under one roof. The right tool should help companies select different audiences, design smart automations based on an individual lead or customer's activity, proactively work with contacts, and manage relationships. More importantly, every department can now deliver consistent, personalized interactions to get the best returns from customers [5]. Salesforce makes CRM simple to use for both small and large businesses. That approach makes Sales Cloud so popular in the world [6]. Salesforce assists in putting together more important data. To better comprehend your customers' needs, recognize new chances to help, and address their issues speedily [7]. The better approach for building and running applications is enabled by the universe of cloud computing, where we can get to applications over the Internet as utilities, rather than as bits of programming running on your desktop or in the server space [8]. The congestion of Internet growing continuously as consistently developing prominence of data concentrated applications and the expanding number of devices associated with the Internet. Today's scenario generating of huge amount of data become milestone in cloud network and facing the challenges to ascertain 'the most effective method to effectually interconnect an exponentially expanding number of servers [9]. This research paper focuses on the customer relationship management stored and managed in the cloud environment on the Salesforce.com platform. CRM, or customer relationship management, alludes to software or an application that gives organizations a chance to track each collaboration with current and following clients.

1.1 Salesforce

Salesforce is an American cloud-based service software company headquartered in San Francisco, California. It provides customer relationship management (CRM) software and applications focused on customer service, sales, analytics, marketing automation, and application development. Salesforce is a cloud-based platform that provides software and services to create relevant customer resource management, etc. As a globally used CRM tool, Salesforce benefits both small and large businesses. It blew out the organization's operations and permitted the employees to have a single customer view of different departments. All these services allow a business to use the latest and updated technologies, find potential customers or users, and provide a better experience. App Exchange, Customer Cloud, Marketing Cloud, Collaborative Forecasts, Workflows are the top features for all salesforce users. Some more Features of Salesforce are Account and Contact Management , Opportunity Management, Salesforce Engage, Sales Collaboration, Sales Performance Management, Lead Management, Salesforce Mobile App, Workflow and Approvals, File Sync and Share, Sales Forecasting, Reports and Dashboards, Email Integration, Territory Management, Partner Management

1.2 Salesforce CRM

Salesforce CRM helps in many ways, like reporting to higher authorities and managing clients' data. This reminds me of the tasks or activities, for tracking the leads, analysing the market, etc. According to [10], CRM is a way that enables one to focus on their organization's relationship with people. Those people can be colleagues, suppliers, service users or end customers. In generic terms, CRM is referred to as a CRM System, a tool which helps in sales management, contact management, workflow processes, and more.

1.3 Cloud Service Model

Cloud computing administers computation over the internet on demand basis as per the requirement of the clients. It is a model for enabling all over, on-demand access to a shared pool of configurable computing resources [11]. The cloud provides its services keeping in mind the types of users it is going to have. Based on this notion, the cloud offers three types of service models [12]:

- SaaS (Software as a Service)
- PaaS (Platform as a Service)
- Infrastructure as a Service (IaaS)

1.3.1. Software as a Service (SaaS): This is a cloud-based application that retrieves data over the internet and is hosted by a third-party software vendor who maintains these databases. Users pay the provider a monthly subscription fee instead of a once-off package deal, which allows users to pay a smaller upfront fee for the features they want, with the scalable option to modernise as their business expands. Other benefits include easy integration with other apps, software maintenance, and automatic updates for less of a burden on a company's IT department. The end users use prebuilt functionalities of the cloud so that they do not need to undergo any process of installing, configuring, and maintaining [13].

1.3.2. Platform as a Service (PaaS): Like SaaS, PaaS is cloud-based, but the vendor provides tools for a user to distribute, create, and monitor applications. Companies that use this service don't have to spend time developing their applications from scratch nor squander the effort required to maintain them. A platform is an elementary computer framework that includes hardware equipment, an operating system, and sometimes user interfaces and application development tools. Along with the environment provided for application development and execution, resources [11] that support the life cycle of application creation are also provided by PaaS.

1.3.3. Infrastructure as a Service (IaaS): The customer has created the required applications and needs just an essential framework. In such cases, processors, systems, and capacity can be given by sellers as "administrations" with buyer arrangements. IaaS, which is also a cloud computing service, networking, and data storage, manages servers and data storage. This service provides IT resources faster, such as software upgrades and troubleshooting, and can support users remotely. IaaS providers also offer better security and data recovery capabilities than in-house software. IaaS services are therefore used for scalable websites or for back-ground processing [13].

1.4 Aura Components

Aura components are self-contained and feasible units of an app. They represent a reusable section of the UI and can range in graininess from a single line of text to an absolute app [15]. The framework includes a set of fabricated components. For example, components that come with the Lightning Design System styling are obtainable in the lightning namespace. These components are also known as the "base lightning components." You can gather and configure components to form new components in an app. Components contribute to producing HTML DOM elements within the browser.

A component can contain other components, as well as JavaScript, HTML, CSS, or any other Web-enabled code. This enables you to build apps with experienced UIs. The details of a component's implementation are summarised. This allows the customer of a component to focus on building their app while the component author can inaugurate and make changes without breaking consumers. You compose components by setting the named attributes that they reveal in their definition. Components socialise with their environment by listening to or publishing events.

1.5 Lightning Web Component

Lightning Web Components, or LWC, is a stack of modern, lightweight frameworks created using the latest web standards. It is a document object model element built using available code. It is used to generate powerful interfaces without using JS or building a library [16]. This feasibility makes it easy to use and quicker to develop, thus saving developers a tonne of effort and time on the web stack.

Let's look at a few of its remarkable features:

- The ability to create apps using small code as a critical component is part of the native web browser web stack and engine.
- Improved component performance.
- The richness of apps built with LWCs grows as they incorporate modern web standards.
- Unrivalled interconnectedness and the ability to combine LWCs and Aura components in apps with no discernible difference in end-user experience.

1.6 Visualforce and Apex

With the power of Apex and Visualforce, you can customise the look and behaviour of your skills, for example, with a robust article publishing cycle or custom search pages. Apex [17] is a firmly typed, object-oriented programming language that permits developers to implement the flow and transaction control reports on the server in conjunction with calls to the API. Using syntax that looks like Java and acts like database stored procedures, Apex allows developers to add business logic to most system events, including related record updates, button clicks, and Visualforce pages. Apex code can be instigated by Web service requests and by triggers on objects. Visualforce is a framework that allows developers to build worldly-wise custom user interfaces that can be hosted natively on the Lightning Platform. The Visualforce framework contains a tag-based markup language, similar to HTML, and a set of server-side "standard controllers" that make basic database operations, such as saves and queries, very easy to perform. Due to the endless probability with Apex and Visualforce, only the Apex Publishing Service class is in this guide. For more Apex and Visualforce details, see the Apex Developer Guide and the Visualforce Developer Guide.

- **Visualforce Markup:** Visualforce mark-up includes Visualforce tags, JavaScript, HTML, or different types of Web-aided code rooted inside a single apex tag. The mark-up describes the UI elements that need to be involved and the manner in which they must appear on the page.
- **Visualforce and Apex:** Visualforce is a framework that enables developers to assemble advanced, custom user interfaces that can be facilitated locally on the Force.com platform.
- **Visualforce Controller:** A Visualforce controller is a set of commands that determine what happens when a client interfaces with the segments indicated in related Visualforce markup, for example, when a client clicks a button or link. Apex is used when it requires validations over multiple objects, creating custom logic over the entire transaction, not over a single record or object, and other cases.

2. PROPOSED MODEL

The custom objects contain certain custom fields in Salesforce.com. To overcome this new model has proposed shown in figure 1. It requires a new user on its web portal to first register and then login to continue with further use of it. After getting logged in, a user can access the web portal and can see a glimpse of knowledge about the construction industry. If they don't know about it, they can gain some knowledge over here. Then, from the tab option, a user can see the list of professional employees with all the details, along with their contact numbers and work samples. Along with this functionality, a user can also change the password as per their wish. All these things were done using the Salesforce platform. Salesforce.com provides a special storage place for storing the database objects. There are two types of objects: standard objects and custom objects. The standard objects are the objects provided by salesforce.com (a service provided by SaaS) and the custom objects are those which are made by the user for storing the information vital to the application and hence the organization. Home Page is the link to the first page of the web portal which navigates the user for further use of web portal. Registrations and Logins are the objects which show the database entries of number of requested calls, registrations made and logins done respectively. Apart from these, other custom objects are Professional's details, work samples and track process work.

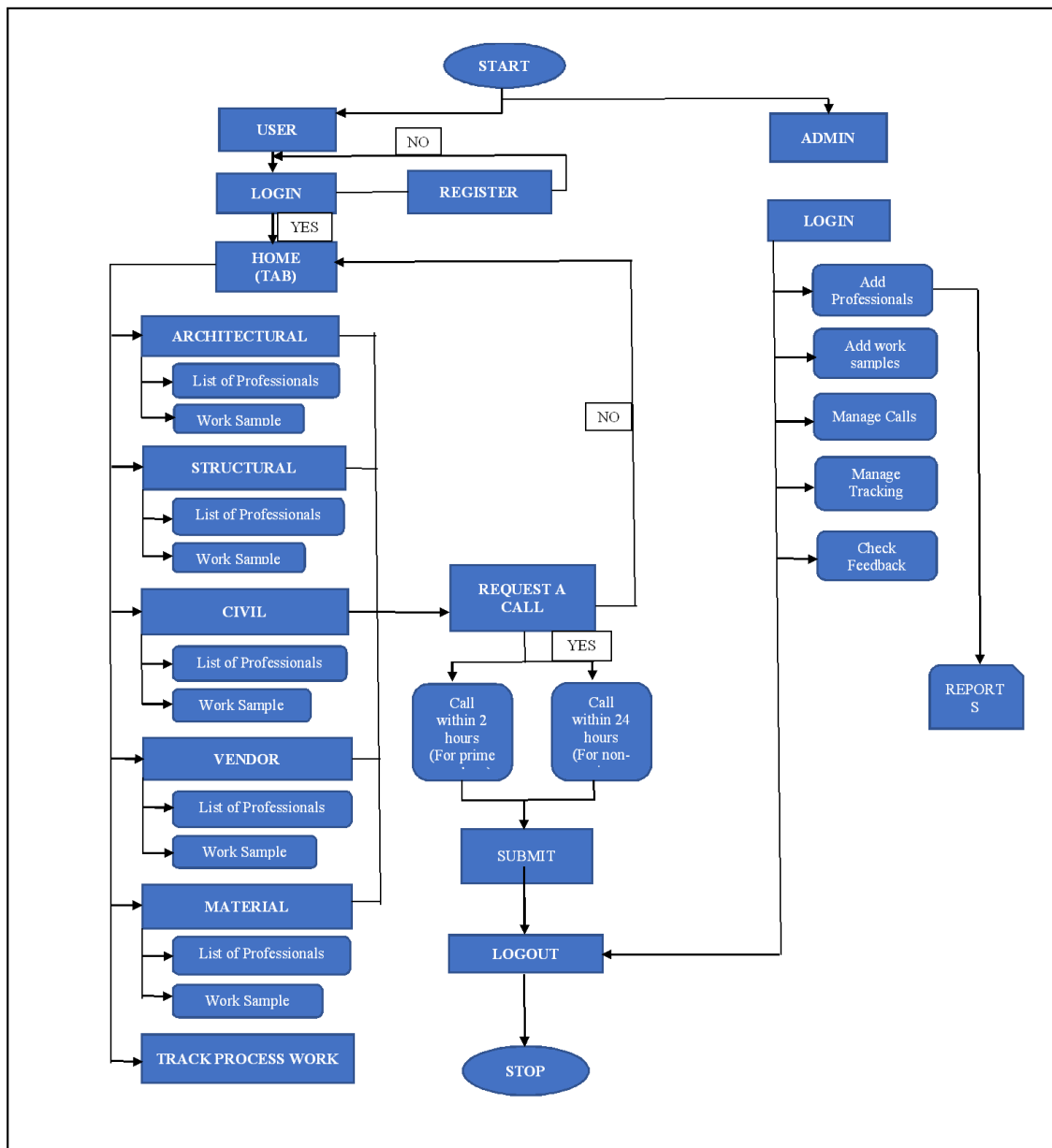


Fig.1. Proposed Model

The proposed model is shown that how to access the web portal, a user will login the web portal. The front page shows some glimpse about the construction work. As this portal is about where you find all the details about the professionals to contact from where you are. It shows the tab option where you find the list of engineers who work in construction field. Every specific label contains the details of the professional engineers from there address to contact number and their sample work. And it also shows you the list of stores from where you can buy the materials for construction. If a user is interested, he/she can request a call and will receive a call back within 2 or 24 hours as per your convenience. Then you have to submit it and logout the web portal and wait for the call from others side. When all the discussion is done between a user and professional, when the work is begun and a user is not present there to see, from this option track process work you can track your work, is added in web portal.

3. OBJECTIVE

To provide an authentication platform to a people for hassle free construction work, according to survey, 70-75% people don't have any type of knowledge and platform to provide all the necessary knowledge of construction work. From this portal, people will get a chance to connect with the authorized architectural, structural, civil, vendors and their local government officials to resolve their queries and problems. On this platform a beginner will get a knowledge about how to construct, evaluate, expenditure and time for their desired house. People will directly connect with the desired person of their professional fields at a one click. This is a web portal delivered as a service must comply with vendor requirements as well as market requirements. The conception of a web portal as a service commonly comes from a business opportunity derived from market requirements rather than from single custom requirements.

4. COVID-DRIVEN IMPACT

The continuing pandemic has also had a collision with the construction technology industry [18]. As thousands of health professionals heroically battle the COVID-19 virus, construction industry leaders are also charting a path toward keeping their contractors, employees, and end users safe. Indeed, technology will resolve the majority of the construction industry's short-and long-term pandemic-related issues.

Top construction companies were already splashing out heavily on technology pre-pandemic. By necessity, contractors, architects, engineers, and suppliers have quickly shifted to working and collaborating digitally—from video-calling site meetings to filling digital orders. While there has already been a rapid rise in collaboration technology uptake, the pandemic has also triggered a painful shakeout. Many contractors are seeing shrinking backlogs and more competitive bidding environments, which have had an analogous impact on the construction tech industry. Construction technology players have been forced to lay off hired hands and cut costs to manage cash flow. Continued uncertainty about recovery timelines and the risk of virus resurgence could cause another wave of bankruptcies among smaller players, hastening the industry's consolidation. Taking the good with the bad, we expect that the on-going COVID-19 pandemic will drive a net advance in the use of technology and the construction industry will continue its transformation from a highly complex, fragmented, and project-based industry to a more standardized, integrated, and consolidated one. This web portal will help people connect with the engineers and constructors in this COVID-19 situation. They will get to know everything about their requirements for construction work through this web portal, as it has all the details of the engineers with their contact numbers and work samples, which will make an easy understanding for the customers. So, the customer can work with the person they want to through this web portal.

5. CONCLUSION AND FUTURE SCOPE

In conclusion, this system will be useful and informative in the real world as the user will be able to get pricing and information from across the construction sector through this web portal instead of searching at each different construction website. Salesforce is a powerful cloud-based technology driving business today. It provides a robust and reliable platform for developing custom applications and has a good community. The projects/applications developed using this technology automatically has the cloud as their database, which is very helpful for business purposes, which is growing day by day. The construction web portal is developed to provide necessary details of the construction work to provide ease of sufficient knowledge and also provide a user-friendly environment. A web portal can be made more user-friendly by adding some more security features, a call request from a user's side to the professionals, and tracking of their work progress.

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