Building Platform Recruiting App in Salesforce

Project report submitted in fulfilment of the requirement for the degree of Bachelor of Technology

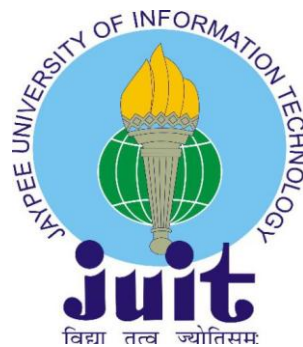In

Computer Science and Engineering

By

Tapasya Sangrai (161234)

Under the supervision of

Dr. Mrityunjay Singh

To

Department of Computer Science & Engineering and Information Technology

Jaypee University of Information Technology Waknaghat, Solan-173234, Himachal Pradesh
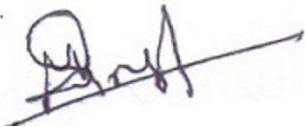
Certificate

We hereby declare that the work presented in this report entitled **"Building Platform Recruiting App in Salesforce"** in fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science & Engineering** submitted in the Department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology, Waknaghat is an authentic record of our own work carried out over a period from February 2020 to May 2020 under the supervision of **Dr. Mrityunjay Singh.**

The matter embodied in the report has not been appeased for the award of any other degree or diploma.

Tapasya

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Tapasya Sangrai

This is to certify that the above affirmation made by the candidate is true to the best of my knowledge.

…………………………….

Dr. Mrityunjay Singh

Assistant Professor

Department of Computer Science & Engineering and Information Technology

Jaypee University of Information Technology

Dated: June 23, 2020

ACKNOWLEDGEMENT

We would like to take the opportunity to thank and express my deep sense of gratitude to our mentor and project guide Dr. Mrityunjay Singh for his immense support and valuable guidance without which it would not have been possible to reach this stage of our final year project.

We are also obliged to all our faculty members for their valuable support in their respective fields which helped us in reaching at this stage of our project. Our thanks and appreciations also go to the colleagues who have helped us out with their abilities in developing the project.

Tapasya

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161234

Project Report Undertaking

I Mr. /Ms. Tapasya Sangrai Roll No.161234 Branch-CSE is doing my internship with Cognizant from Feb 7, 2020 to June 5, 2020.

As per procedure I have to submit my project report to the university related to my work that I have done during this internship.

I have compiled my project report. But due to COVID-19 situation my project mentor in the company is not able to sign my project report.

So I hereby declare that the project report is fully designed/developed by me and no part of the work is borrowed or purchased from any agency. And I'll produce a certificate/document of my internship completion with the company to TnP Cell whenever COVID-19 situation gets normal.

Signature- *Tapasya*

Name-Tapasya Sangrai

Date-June 23, 2020_____

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ABSTRACT

Cloud Computing is the new trend in IT industries. In simple terms, cloud computing refers to the storage and access of data and programs over the internet rather than from our computer's hard drive. It has the most powerful architecture for computation. Before cloud computing techniques came into existence in August 2006, traditional business applications were very complicated and involved a huge amount of money. These applications involved a variety of hardware and software that were very challenging. So, it required a whole team of experts to install the hardware and software, configure them accordingly, run and test them and update them as well. It was a cumbersome task to do. Along with that security of the data was also the issue. When we consider multiple applications the effort also gets multiplied.

With cloud computing these efforts were minimized and these headaches of managing the hardware and software were eliminated. It was the responsibility of experienced platforms like Salesforce.com in cloud computing. With the cloud-based applications we can open the browser and login and start customizing the application. Now businesses are using all kinds of applications in the cloud like customer relationship management (CRM), accounting, Human Resource and much more. Some of the world's largest companies have moved their applications to the cloud with salesforce.com after rigorously testing the security and reliability of its infrastructure.

Salesforce brings customers closer to the companies. Customers interaction with the companies have also increased over recent years and the products that salesforce offers creates best possible experience for the customers to interact with their companies. They have created a positive impact on all the communities that they have interacted with.

CHAPTER 1: INTRODUCTION

1.1 Introduction

Cloud Computing is a big revolution that has changed the way traditional business thinks about information technology resources. And in this revolution Salesforce is the leading environment in cloud computing that offers applications in the cloud like customer relationship management (CRM), accounting, Human Resource and much more. Cloud computing is an environment that is basically used for storing and accessing the programs and files over the internet rather than storing and accessing the programs and files from our hard drives. It makes the task very easy and therefore is very easy to use and understand as well.

It is an era of cloud computing in information technology industries. As real clouds are the collection of water molecules similarly cloud in cloud computing is the huge collection of networks. There are various reasons why the information technology industries are shifting to cloud computing services from traditional business technologies. Some of the reasons may include cost, performance, speed, productivity, security and many more. In cloud computing environment it is possible for the user to use the features and modalities of cloud computing in every possible way without worrying about the boundaries or any limits set. This is not possible in traditional techniques as it requires setting up of a physical infrastructure and also includes the management of that infrastructure. Whereas in cloud computing there is no requirement of any physical infrastructure. It just needs to use a mediator for using the services over the internet. User pay for the services used by them. The services that the user uses are the responsibility of network and are handled by them. Therefore, the collection of networks forms the cloud and all we need is a web browser to access the services of cloud computing. Apart from this there are several reasons because of which cloud computing techniques are preferred over traditional business techniques.

Cost: This is one of the biggest reasons for the use of cloud computing instead of traditional business. Traditional business techniques involved the setting up of large hardware and software which itself required a huge amount of capital. Not only this but the management of theses hardware and software also required money in large amount. Using cloud computing eliminated these setting and management cost as user pay only for the services they used and rest is all managed.

Speed: A Cloud computing service provides speed in its working. Most of the services and resources of cloud computing are accessed in minutes with the help of few mouse clicks and everything is a self-service and on demand.

Productivity: Cloud computing has eliminated the headache of setting up and management of hardware and software on onsite data centres where the physical infrastructure is set up. Therefore, the team which was previously involved in these tasks can now do something productive and achieve business goals.

Performance and Security: Cloud computing services are based on certain set of policies like data encryption that provides a very secure framework in all its applications and safeguard the applications from any potential threats. Cloud computing services run on a wide data network centres all over the world instead of a single data centres which are regularly updated with efficient hardware and therefore achieving high economy of scale.
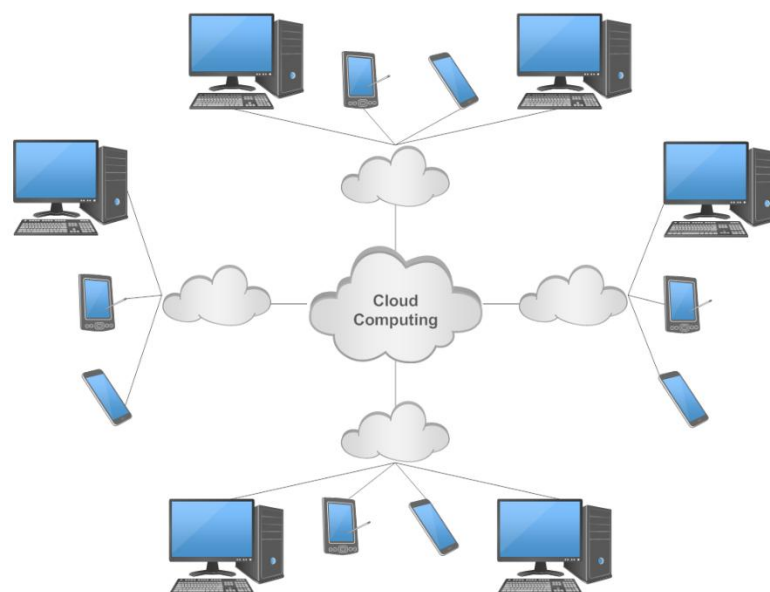
Fig 1: Basic Cloud computing

1.2 Deployment Models:

Every cloud is different in its features and services and not one type of cloud is right for every user. Every user has its own requirements of cloud and every cloud has its own specifications. Depending upon that there are four types of ways in which the cloud services can be employed to the user requirements.

Private cloud: Private cloud is a type a cloud in which the cloud computing services and its resources are used by a single organization. The cloud is basically set on the organizations data centres which may be offsite or may be onsite or sometimes contract may be given to third party to handle the cloud but the cloud is used only by the organization.

Public cloud: Public cloud is a type of cloud which are owned by a third organization that provides services to different organizations and charges them accordingly. Salesforce is an example of public cloud. All the hardware and software are owned and managed by third party commonly known as cloud service provider. The users can access the services via a web browser and pay according to the services used by them.

Hybrid cloud: Hybrid cloud basically is the combination of private and public cloud and data sharing takes place between the clouds. Now as the data flows between the public and private clouds there is a better environment for service deployment and thereby achieving high economy of scale and accomplish business goals.

Community cloud: Community cloud is a type of cloud in which several organizations can use the cloud that is set up and maintained by a third organization externally.

1.3 Service Models:

Services of cloud computing are divided into three categories which are Software as a service, Infrastructure as a service and Platform as a service. These are commonly known as SaaS, IaaS, PaaS respectively.

Software as a service (SaaS): This is a way of deploying software services over the internet. In 2020 from small business to big multinational companies everyone uses software as a service as a default deployment method. In SaaS the software is delivered over the internet and all the data and programs are accessed over the internet. The whole task of setting up the software and maintaining the software and all the coding behind the software is accomplished

by the software dealers and the users only access the services offered by the software via a web browser by logging on to the software. This system is very flexible and less expensive and affordable for the users. The software under SaaS comes under subscription basis. Users can subscribe for the software they want to use and pay accordingly. Today's software based on web are flexible enough for customizations. Therefore, users can customize the software according to their own choice and enjoy the working experience. The data completely belong to the user and SaaS providers have no ownership of the data. So even if the software service provider goes out of the business then the data is still users to keep. The data is completely safe as there is set of security policies like data encryption, two factor authentication that forms a whole set of security bubble around the data. And even if there are security patches, these patches are identified and filled up by the service providers themselves.

Infrastructure as a service (IaaS): This is a way of deploying services on rent. It is completely managed over the internet. Users can access the services over the internet and pay for what the user use. It is very flexible system as the user can rent only the particular software that they want and pay for only that particular software. The complete headache of setting and managing the software is eliminated. The overhead of buying the software and complexity of managing it is also avoided by this and the user only pays for the software as long as they rent it. For example, cloud service provider salesforce manages all the physical infrastructure and users like us access the services as long as we are subscribed to it and as long as we rent it. This is also a very flexible system which is user friendly. The user can rent small infrastructures like networks, operating systems from service providers based on which we can pay accordingly. There are various reasons for using IaaS like stability, supportability and reliability. One of the main reasons for using this system is better security and elimination of cost involved in setting up of software and maintenance of software. There are various scenarios where this type of deploying service is used like in test and development, big data analysis, website hosting.

Platform as a service (PaaS): This is a way of deploying services over the internet on demand. It provides an environment for developing, testing and managing different software applications. Users simply can create web applications without worrying about the physical infrastructure that is associated with it for setting up the software and its overall management. It makes the system easier for the user to create the application by using the platform as a service. Platform as a service is used in various scenarios like development framework and analytics. There are various reasons for which PaaS can be used like its decreases the coding

time for certain applications as some applications are pre-coded. As the development environment is accessed totally over the internet different people sitting in different places can easily work together
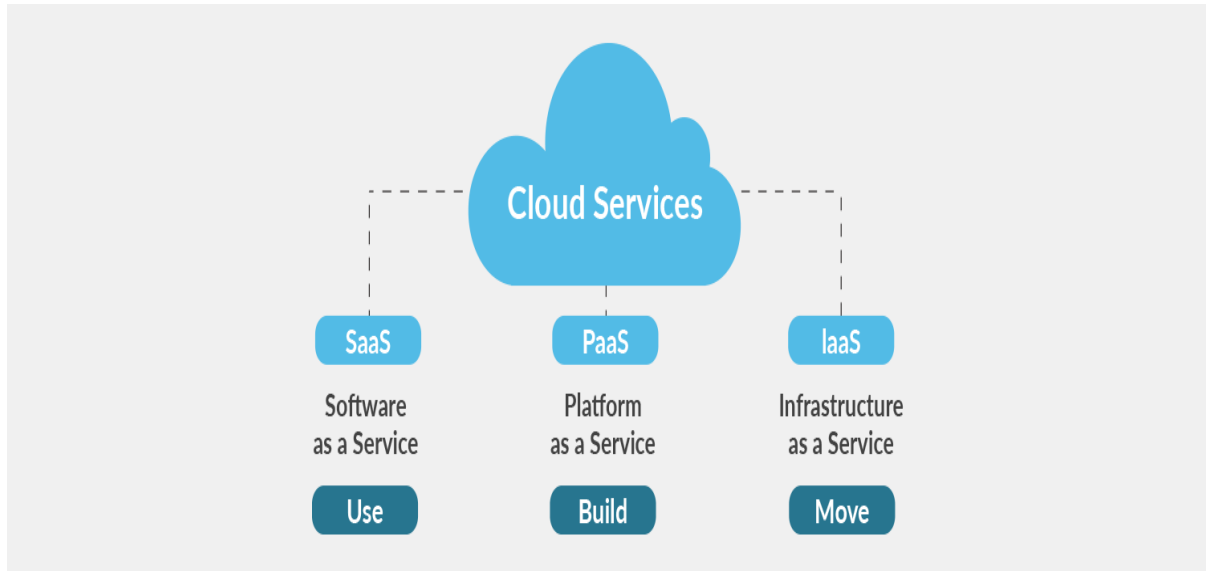

Fig 2: Types of cloud services

CHAPTER 2: SALESFORCE

2.1 Introduction

Salesforce is the customer relationship management that act as a bridge between the customer and companies. It is an American based cloud software company. Salesforce brings customers closer to the companies. Customers interaction with the companies have also increased over recent years and the products that salesforce offers creates best possible experience for the customers to interact with their companies. They have created a positive impact on all the communities that they have interacted with. It does not need any pre-installation before accessing its services. All what is needed is a web browser to login and access the services of salesforce.

Salesforce values: Salesforce does everything according to their values. It has four core values according to which it does all the things. These four values are as follows:

Trust: Trust is the foremost value which salesforce follows. Salesforce believes in the trust of customers and stakeholders who have invested in the company with their money and time. Everything that is delivered by the salesforce is trustworthy.

Customer Success: Salesforce always believes in success of the customers. Customer success is the foremost goal of Salesforce community.

Innovation: Salesforce empowers Trailblazers to succeed with technology in their hand in the Industrial Revolution, and also it incorporates into the products the latest innovations three times in a year so that our customers can stay focus and ahead in their industries.

Equality: Salesforce always believes in equality of customers though they belong to different diverse locations

Salesforce always put the customers at the centre of everything. Using salesforce, we can get the complete data about customers and therefore it makes it easier to get the complete picture of the customer and thereby helping the business to meet the customer needs. In 1999 salesforce became trailblazer by making software as a service popular. This is a way of deploying software services over the internet. In 2020 from small business to big multinational companies everyone uses software as a service as a default deployment method. In SaaS the software is delivered over the internet and all the data and programs are accessed over the internet. The whole task of setting up the software and maintaining the software and

all the coding behind the software is accomplished by the software dealers and the users only access the services offered by the software via a web browser by logging on to the software.

2.2 Products and Services offered by Salesforce

Sales: Salesforce provides sales cloud as a platform which basically controls all the processes related to sales. We know that in a company there are a lot of employees who work in different departments and eventually they have to be connected to each other in their respective departments. Sales department has to be well aware of all the information about its customers, leads, opportunities, contacts and accounts. Therefore, salesforce provide sales cloud as a service to manage all the sales processes and also helps in refining the sales processes

Marketing: Salesforce provides marketing cloud as a service to manage all the marketing processes. Sales cloud is only for selling the product to the customers but the question is how will the people sell their products. This is done with the marketing of the product which can be in the form of mass short messages, mass e-mails and even in the form of digital marketing which is perhaps a very good option for marketing of any product. With marketing cloud people can manage their social profiles and their marketing as well.

Services: Salesforce provides service cloud as a platform to manage all the service-related requests of the customers. It is there to provide the best service to the customer queries. Whenever the customers are not happy with the product, they may raise a query about the product and this generates ticket in the service cloud and a particular person from the sales cloud is assigned to the customer to answer all his queries and provide him with the best possible solution of his problem.

Analytics: Salesforce provides an analytics cloud to perform the analysis of almost all the activities that are going on in the framework. Analytics cloud can perform analysis on sales cloud, marketing cloud, service cloud and every other cloud that is present in salesforce. It lets the clouds know that their certain scheme like for example certain marketing scheme is a success or it is a failure. Therefore, it is basically for analysis purpose and also it can collaborate with other clouds for their analysis.

Community: Salesforce provide community cloud as a platform where the customers can interact with each other. Here the customers can put up their queries regarding the product and not only the service people can respond but every other customer who can relate to the

query have an open environment to respond. Basically, it enables the communication between the clients and therefore they can collaborate and help each other with their problems.

App: App cloud is one of the major services that is offered by salesforce where the user can create and customize their own app with the help of developer teams. Salesforce lightning and salesforce classic are such platforms where the user gets a chance to create their own customized app. Therefore, app cloud allows user to create their own apps with their own programming logic.

Commerce: Commerce cloud in salesforce is basically used to improve the e-commerce activities of the client. The concept behind this is the recommendation engine. Using this concept, the companies help the clients better their e-commerce activities. For example, suppose a client buys a product A then the recommendation system will recommend the client with the products that were bought by the all the clients who bought the similar product. This is all managed using the commerce cloud.

IoT: IoT cloud is provided by the salesforce to manage the activities of companies that are basically, dealing with IoT devices. All the data that comes from these companies about the clients can be stored in the IoT cloud and therefore managed from there.

Health: Salesforce provides health cloud as a service which is basically used by the doctors and patients. The kind of data that is stored in this cloud is basically the information about the patients and the diseases and using the data analysis can be done about various things like which diseases are most common among the patients and what type of treatments are recommended for them and also which doctors are specialist in handling various type of diseases.

These are the basic services that are offered by the salesforce platform for the customers and every service that is offered is managed in the best possible manner keeping in mind the customer satisfaction which is the foremost goal of salesforce.

Fig 3: Services offered by salesforce

2.3 Salesforce Editions

Salesforce offers variety of services and features that are wrapped together in the form of bundle called editions. These editions are designed to meet specific business needs and they have different functionality and prices associated with them. Depending upon the functionality salesforce editions varies from the very basic to advanced version and it is upon the need of business to choose the right edition. Different salesforce editions are

Essential edition: This salesforce edition is basically designed for small business companies who have just taken a decision to get started with any customer relationship management software and wants to be able to use the very basic features of this CRM software. It basically includes the very basic functionalities of CRM that is essential for small businesses such as account management, opportunity management, lead management, contact management, reports and dashboards, chatter, fields and relationships, task or event tracking, salesforce mobile app which is customizable etc. Since this is the basic version the features are also very

basic and there are various limitations of this edition of salesforce such as limit of custom objects and custom fields, field history tracking of maximum of 20 objects that may be standard or custom, no external objects, no opportunity teams, no dashboard filters and many more. Essential edition is available at the cost of $25 per user per month.

Professional edition: Professional edition is designed for mid-sized business company that wants to explore the complete feature of customer relationship management software. It includes no user limit unlike essential edition. Professional edition is available at the cost of $75 per user per month. Some of the features that are included in this edition are case management, mass emails, lead assignment and routing, products and price books, process builder to automate processes, developer sandbox to develop and test the new functionalities. However, it also includes various limitations in different cloud of salesforce. There are no bucket fields, no dynamic dashboards, no joined reports, no account assignment rules, a limit of 20 validation rules per object, limit of 100 custom fields per object, no live agents, no salesforce communities, limit of 10 developer sandboxes and many more.

Enterprise edition: Enterprise edition is designed for big businesses that are very complex. This edition is available at the cost of $150 per user per month. User may opt for this edition over the professional edition due to its exclusive enterprise features like in this edition user has full control of what it can do with the profiles, multiple systems can be integrated in salesforce through this edition, offers workflow rules and visual workflow in addition to web to lead automation, 200 custom objects,500 custom fields per object,100 validation rules per object, 10 custom apps, 200 custom reports, advanced history tracking ,advanced cross filters, joining reports and also it offers 25 developer sandboxes. These exclusive features make enterprise edition a perfect choice but along with these, feature there comes certain limitation also such as limit of 25 lightening apps, limit of 5 dynamic dashboards, and limit of 1 reporting snapshot.

Unlimited edition: Unlimited edition is for large businesses having thousands of users and the requirement of using the entire ultimate functionality, services and features. This edition is available at the cost of $350 per user per month. User may opt for this edition over the professional edition and enterprise edition due to its exclusive enterprise features like in this edition there is a benefit of having500 validation rules, 800 custom fields per object, 2000 custom objects and an unlimited number of lightening apps, etc. In addition to this ultimate and exclusive functionality, user gets a 24/7 full toll-free support, premium knowledge

database can be accessed, developer support for facilitating custom code development and development using multiple Developer Pro Sandboxes and testing of new functionalities. These exclusive features make unlimited edition a perfect choice but along with these, feature there comes certain limitation also such as limit of 300 Custom settings: maximum fields per setting, limit of 100 Divisions: Maximum and the limit of 1000 Reply: maximum characters.

It is very crucial to opt for the right edition of salesforce that meet the needs and requirements of a business company and its users as well. Although there is an option of changing the edition once chosen by the company but downgrading the edition may be a very intimidating task though upgrading may be encouraging for the business. User can upgrade the business from the essential edition to professional edition and then from professional edition to enterprise edition and then from enterprise edition to unlimited edition depending upon the needs and requirements of the business but going the other way around is not something that is encouraged. So, it is very important to understand and evaluate the needs and requirements of any business at the right time that is the present as well as the future to choose the right edition of salesforce for it which can meet its needs in the present as well as the future.

2.4 Salesforce Versions

Salesforce is of great importance in today's time. Almost every company is using salesforce as customer relationship management software. There is a cut-throat competition between companies in almost every situation. Salesforce is the framework that is enlightening the companies of their maximum capacity and how they can handle the load that is strived upon them. Salesforce has also taken customizability into next level by letting the user choose the two major versions of salesforce. Two major versions of salesforce are Salesforce Classic and Salesforce Lightning.

2.4.1 Introduction to salesforce classic

As implied by its name classic is the original interface that was designed by salesforce for its users. It is an easy to use user interface which is filled up with all the basic and as well as some advanced features that any user requires.
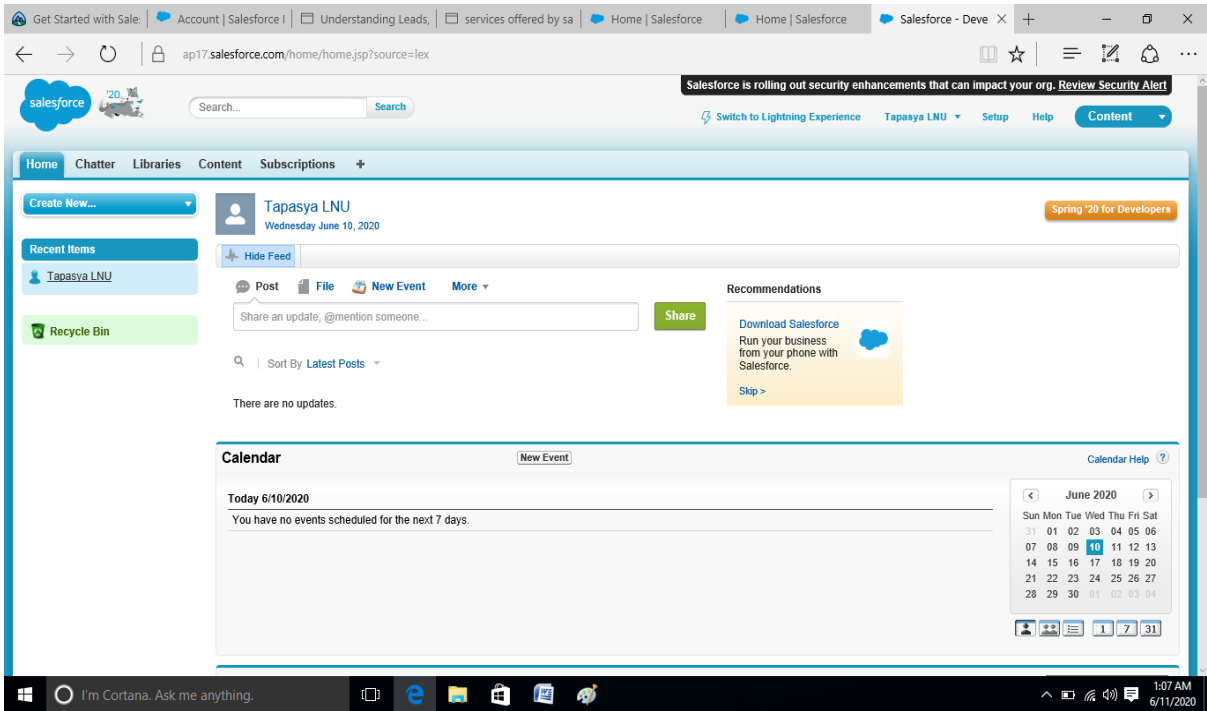
Fig 4: Salesforce classic version

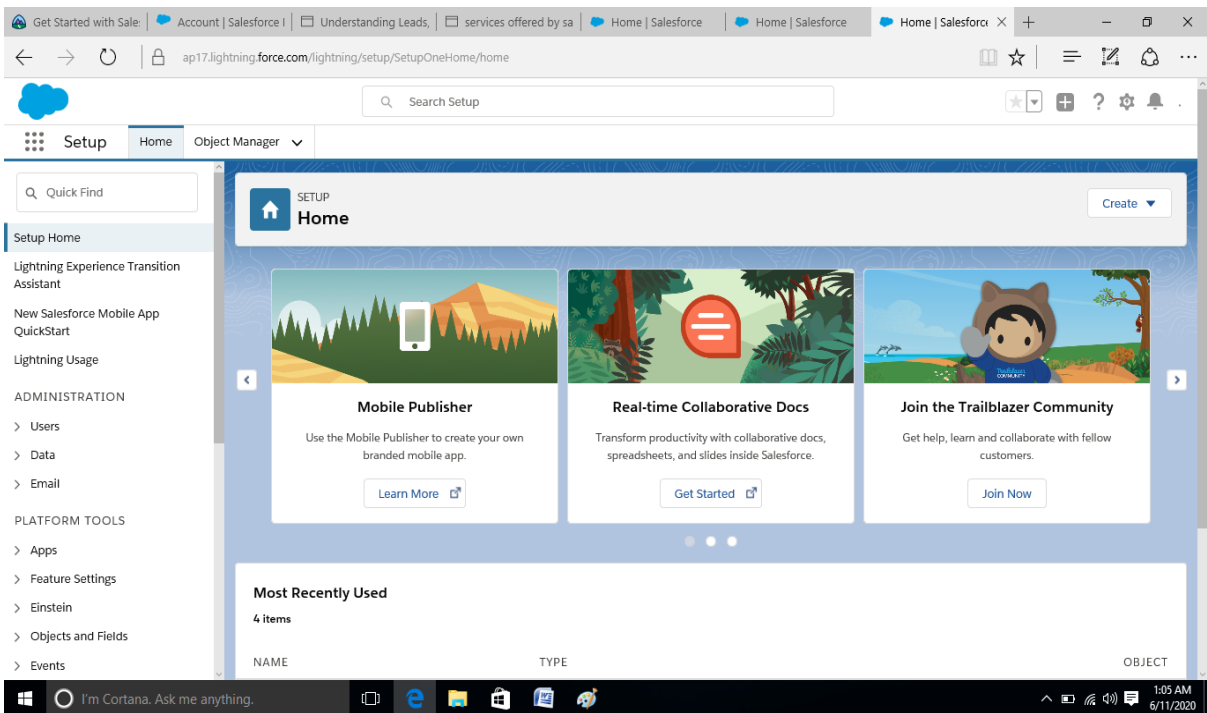## 2.4.2 Introduction to salesforce lightening

Fig 5: Salesforce lightening experience

2.5 Need for CRM and Salesforce as a solution

CRM (Customer Relationship Management) as the name suggests is basically a program to manage the relationship of the company with its customers. Customers are very important for any company and to maintain a good relationship with them is the company's priority. CRM changes the way the company totally works. Before CRM the sales team or any other team of the company spent more time and effort in keeping the track of every customer's information. They had to manually keep the track and every updating also was done manually. This is possible in small businesses with a smaller number of users but in large organizations where the numbers of users or customers are in a very large number it is a very daunting task to keep the track of customers manually. It will involve a lot of time and effort to manually update the customer related information in these large organizations. And if they want to retrieve certain information about any customer like their phone number or email id, they have to manually search for it which will consume a lot of time. So nowadays every large company and even small company have adopted the concept of CRM software like salesforce. It completely keeps the track of its customer's information. Thus, by adopting the CRM solutions the profitability of the company is increased as it smoothens the administrative processes, sales processes, marketing processes, commerce processes, service platforms and lets us keep our main focus intact which is maintaining the relationship with the customer and their satisfaction.

CRM brings growth opportunities in any company that follows it as it is a platform where everything crucial about the customer is stored to retain the company –customer relationship. Without CRM maintaining the relationship with the customer and growth of the company is not possible. Without CRM there may come situations where due to some mistakes the potential customer can be lost which is a loss to the company in every sense. We can imagine the situation where the customer information can be misplaced if it handled manually and the delay caused in finding that customers information can result in the loss of customer to the company. If everything is handles manually there may come a situation when two of the sales people are handling the same client which can definitely annoy the client as two times he has to answer the question of the sales people and two times he has to give his information and information about his company which is definitely annoying and it is unfriendly and unethical on part of the company and also it may develop very unhealthy competition

between the sales people which can create a bad and unhealthy atmosphere in the company. There is a need of a centralized system to keep the track of customers and their information. CRM brings with it great growth opportunities as with this centralized automated system the business professional have to no longer be involved in keeping customer tracks and they can be more involved in their tasks to achieve the goal of the organization leading it to success. There is definitely the need of CRM for achieving the business goals and customer satisfaction. Salesforce comes as a solution of it. It is number one in CRM software. Salesforce is a cloud-based customer relationship management (CRM) platform that is basically responsible for supercharging of every part of your company that involves in interaction with customers including marketing, sales, commerce, service, and more.

2.6 Salesforce basics

Salesforce is very game- changing technologies, with a host of productivity-boosting features that will help any company sell faster and better. Salesforce is a platform that is designed to help anyone sell, service, analyse, market and connect with the customers. Salesforce has everything that we need to run our business from anywhere. Using standard products and features, we can manage relationships with prospects and customers, collaborate and engage with employees and partners, and store your data securely in the cloud. Salesforce offers variety of services and features that are wrapped together in the form of bundle called editions. These editions are designed to meet specific business needs and they have different functionality and prices associated with them. Depending upon the functionality salesforce editions varies from the very basic to advanced version and it is upon the need of business to choose the right edition.

Before salesforce the data was stored in different places in different computers, different spreadsheets, sometimes in bulletin boards so it was difficult to get the complete picture of the data and hence the data could not get access from anywhere and from any computer and also the progress could not be seen by managers. And then to solve this problem Salesforce came into existence and changed everything. Now with the help of salesforce all the data is organized into a simple user interface. Salesforce is a place where we can manage all our contacts, work with customers prospectively, organize our every task and events, keep a great focus on the right deals, collaborate with the team effectively, publicly showcase the big achievements.

In salesforce data is organized into objects and fields. Objects can be compared to tabs on spreadsheets and record can be compared to a single row of data.
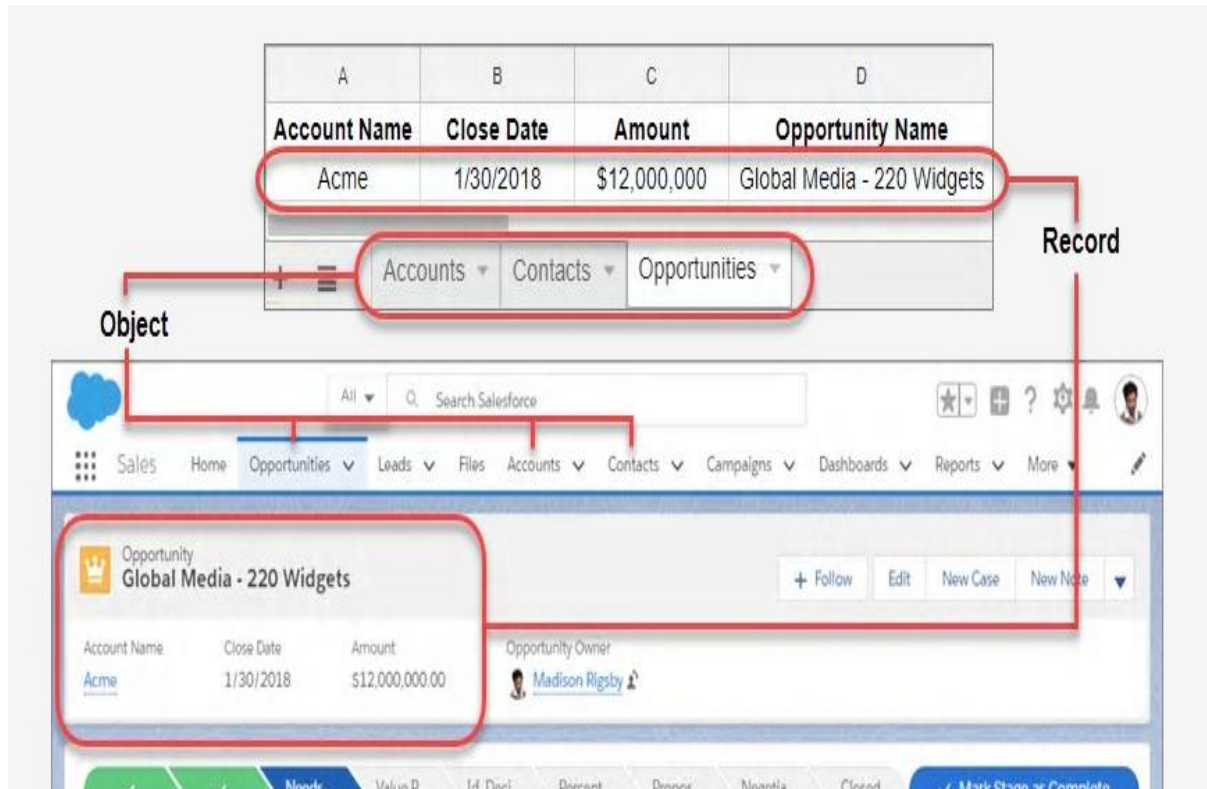

Fig 6: Objects and records in salesforce

Basic terms in salesforce:

Record	A record is something that we are tracking or entering in a database. It is like the single row of data in a spreadsheet. It is an item that we retrieve from what we have stored.
Fields	Fields are like the places where we store the values like the information of our customers like their names, addresses etc. It is like the column of a spreadsheet.

Objects	Objects are like the table in data base. Standard objects include accounts, contacts, leads, opportunities. In a spreadsheet it can be compared to tabs.
Org	Short for "organization," the place where all your data, configuration, and customization live. You log in to access it. You might also hear this called "your instance of Salesforce"
App	An app is a set of fields, objects, permissions, and functionality to support a business process.

In salesforce all the data is stored in a very secure cloud that can be access from any location using the desktop or even using our mobile phones. When everything is stored in salesforce we don't need to worry about if anything is left in our desk, we can simply get it by logging in. In addition to this we also don't need to inform the managers about the progress that is happening in any deal as the manager can simply log on to salesforce and can keep a check on the progress of his team. Salesforce has options of who can access the data and edit the data. Therefore, there is a benefit of powerful security and sharing features in salesforce that protects the data and also ensures that the data is visible to the right people who have access to the data.

2.6.1 Salesforce standard objects:

Salesforce offers a few standard objects that plays a very import role in salesforce dynamics. These are accounts, leads, opportunities and contacts. Each one of the standard objects has an important role to play.

Leads: Leads are the objects in salesforce that are going to store the information of potential customers. They are the customers who may be interested in the product but they have not yet confirmed to buy the product. For example, let us suppose we are selling a camera, then the potential customers who can be interested in the product can be photographers, videographers and those who are interested in buying a camera but have not yet confirmed to buy the camera. Therefore, their information is stored in leads.

Accounts: Accounts are the objects in salesforce where we store the information of company with whom we are doing business or selling our product to. We can do business with a company as well as an individual customer. For example, when we sell a camera to any photographer or any photographic company and they have confirmed the deal then the company information is stored in accounts. Account object has different fields that are associated with it like account id, account number, account owner, account source, annual revenue, billing address, account site etc.

Contacts: Contacts are those objects in salesforce where we store the information of those particular people of company with whom we are contacting to finalize the deal. For example, suppose we are selling 100 canon cameras to a digital company then there will be a particular person of the company with whom we will be interacting. That particular person information we store in contacts.

Opportunities: Opportunities are those objects in salesforce where we store the information of those leads who have been converted into accounts. The opportunity object basically consists the information of the companies with which have done business or are going to do any sort of business.
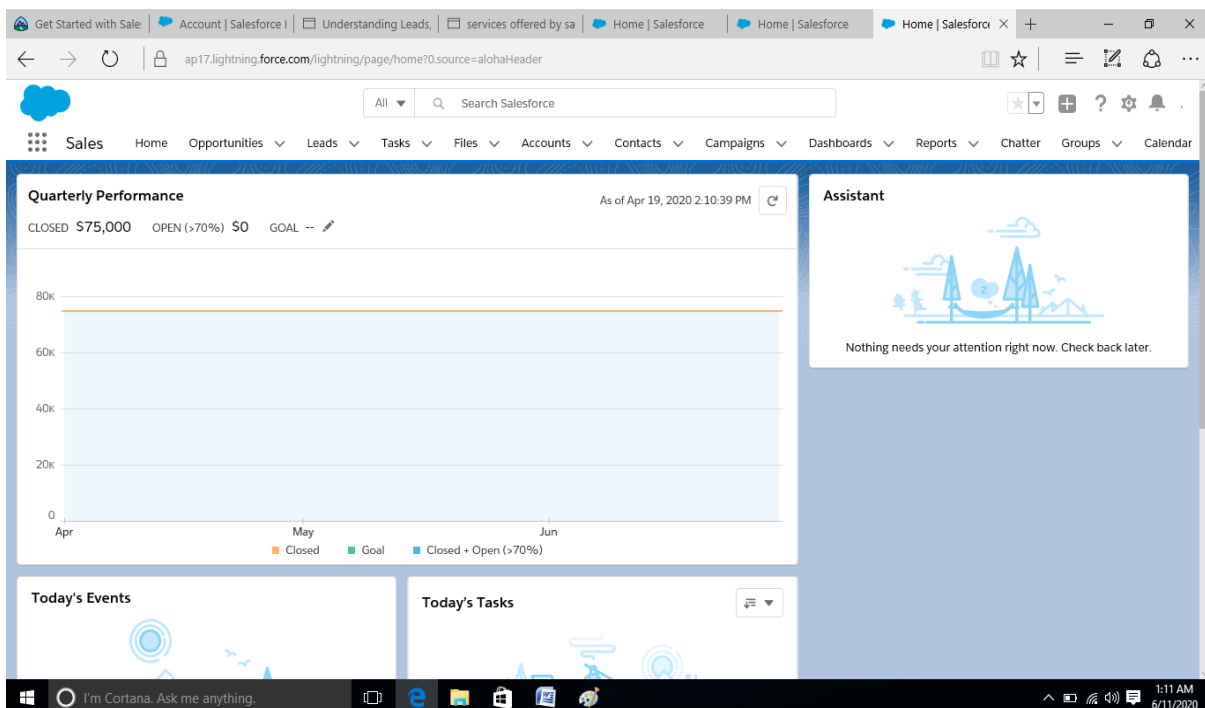

Fig7: Standard Objects in salesforce

Ch-3

Building Platform Recruiting App In lightening experience

3.1 Introduction

Salesforce is a secure platform where the user can create applications that can solve business problems and deliver very engaging experiences. Salesforce can be effectively used in

- Quickly creating applications without writing any code for it.
- Creating web and mobile applications that scale easily.
- Ensuring applications are secure and CRM-connected.

Salesforce can create applications that are designed to fit the needs of every department including HR, legal, marketing, finance, and other business units. The applications developed are used to automate the business processes across every business unit and also give every employee of the company a 360-degree view of the customer and their expectations and connect everything with faster app integration.

Salesforce offers two development platforms. The first one being the App Platform which is also known as Salesforce platform and the other one being the Heroku enterprise. The salesforce platform consists of variety of salesforce's native tools for building applications and on the other hand Heroku is a cloud, based platform service which supports databases and multiple open source languages.

3.2 Methodology

The main steps that are included in the building of platform application in salesforce lightening are

- Building a data model for the recruiting application.
- Customize the user interface for the recruiting application.
- Improve data quality for the recruiting application.
- Keep data secure in the recruiting application.
- Automate business process for the recruiting application.

3.3 Implementation

3.3.1 Building a data model for the recruiting application

In this step of implementation, we customize an app using clicks and not using code to give the recruiters an easy access to the key data. Before following any of the steps we need to install the package Recruiting app package whose publisher is AW Computing. After installation of the package we follow the further steps:

- **Creating a custom object for reviews**

We start by creating a custom object named review.

- ✓ Launch the salesforce profile and select setup and from there click on object manager tab.
- ✓ Now click on create and select custom object to create Review named custom object.
- ✓ The next step is to fill in details like label, plural label, data type, display format, starting number.
- ✓ In the optional features section select allow reports and field history and in the search status section select allow search.
- ✓ Now finally save the object.
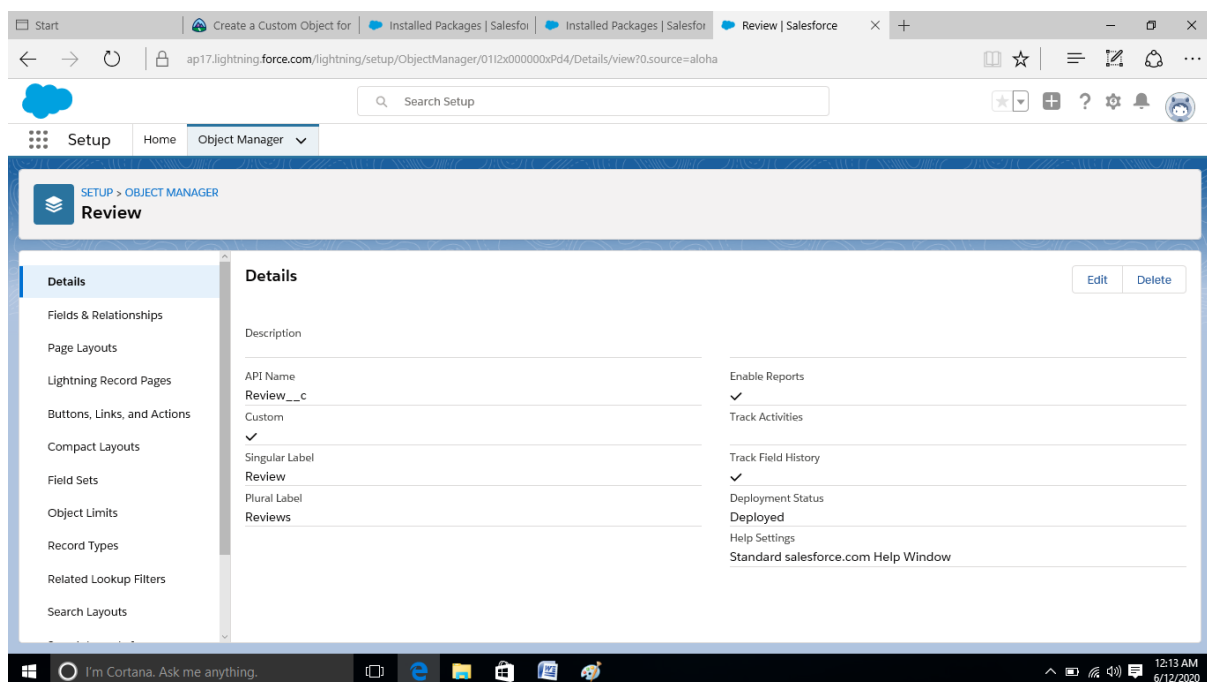
Fig 8: Custom object Review

- **Create job posting site object**

Next to keep the track of which websites host AW Computing open positions we create an object named job posting site

- ✓ Launch the salesforce profile and select setup and from there click on object manager tab.
- ✓ Now click on create and select custom object to create Job Posting Site named custom object.
- ✓ The next step is to fill in details like label, plural label, data type
- ✓ In the optional features section select allow reports and field history and in the search status section select allow search.
- ✓ Select launch new tab after saving the object option in the object creation section.
- ✓ Click save and now a new tab appears where we select the tab style as real estate sign and click next and then save the object.
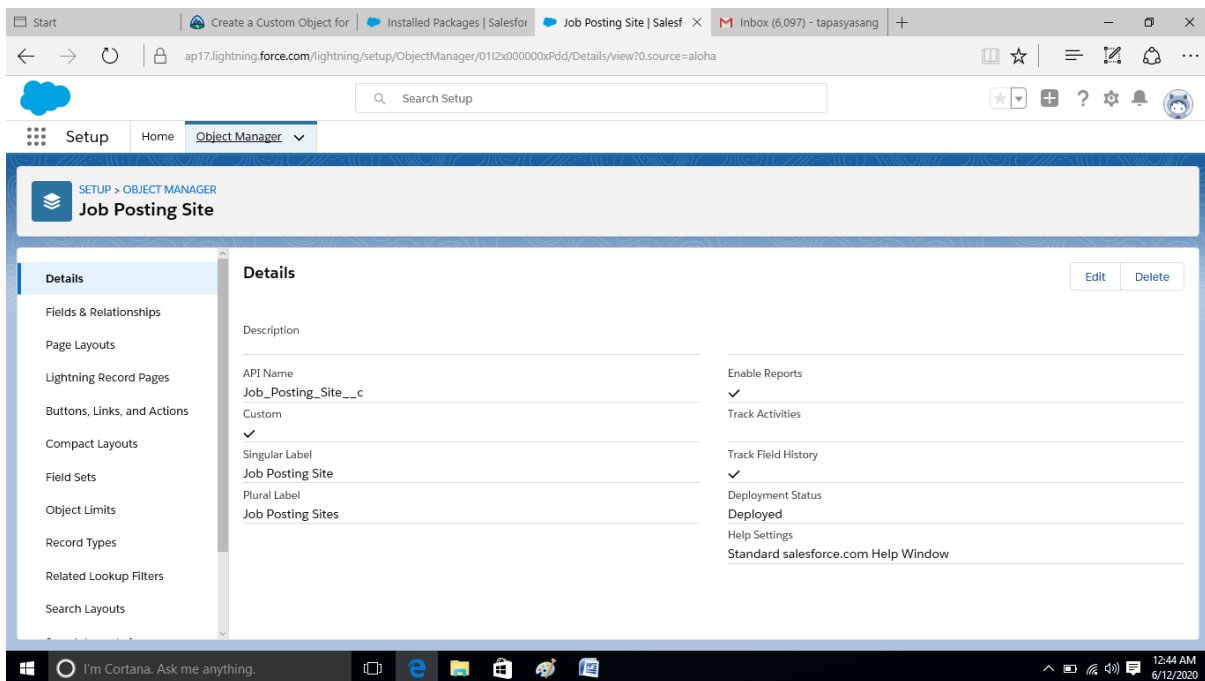
Fig 9: Job Posting Site object

- ✓ Now we create four fields for our object namely Job posting site URL status, technical site, description of data type URL, picklist having values active & inactive, checkbox, text area respectively by clicking on field and relationships.
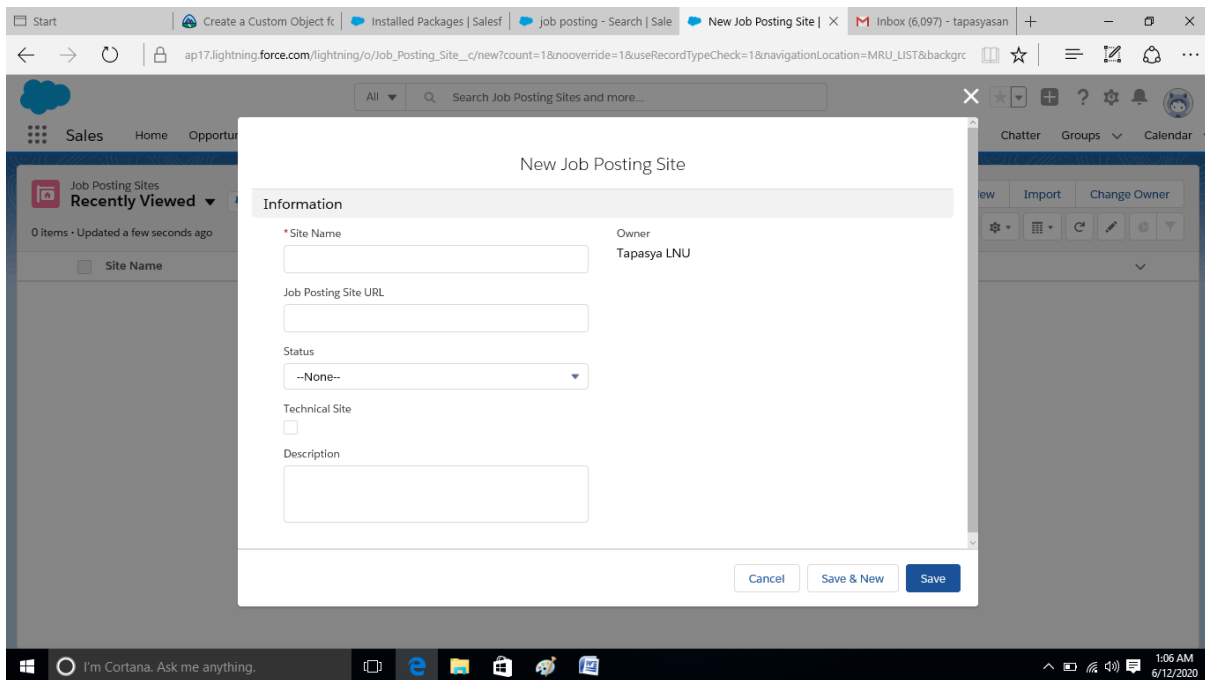
Fig 10: Job Posting site object with fields

- **Creating a junction object for job postings**

  A junction object is the one having two master detail relationships and displays many to many relationships.

  - ✓ Create object named job postings using the same procedure as for review object.
  - ✓ Now we create two master detail relationships for this object. First is related to Position object which is already created in the recruiting package and the second is related to job posting site object created above.
  - ✓ Next, we modify their page layouts by customizing the related lists.

- **Creating self-relationship with the position object**

  When HR team members look at a position in their recruiting app, they want each recruiter to be able to identify other open positions requiring similar skills or having similar job descriptions. This can be set up by creating a lookup relationship for her

  - ✓ From Setup->Object Manager select positions object and click on field and relationship to create new lookup relationship.
  - ✓ Click on create and select lookup relationship and relate it to position object itself and give the field and label names and save it.

- ✓ Now we can add lookup filters to help the team work in more efficient manner and narrow down their searches.
- ✓ Select related position and select edit.
- ✓ A page opens where at the bottom click on show filter settings and now, we can add filters like if position record id not equal to related position's record id then display the appropriate message other display the error message.
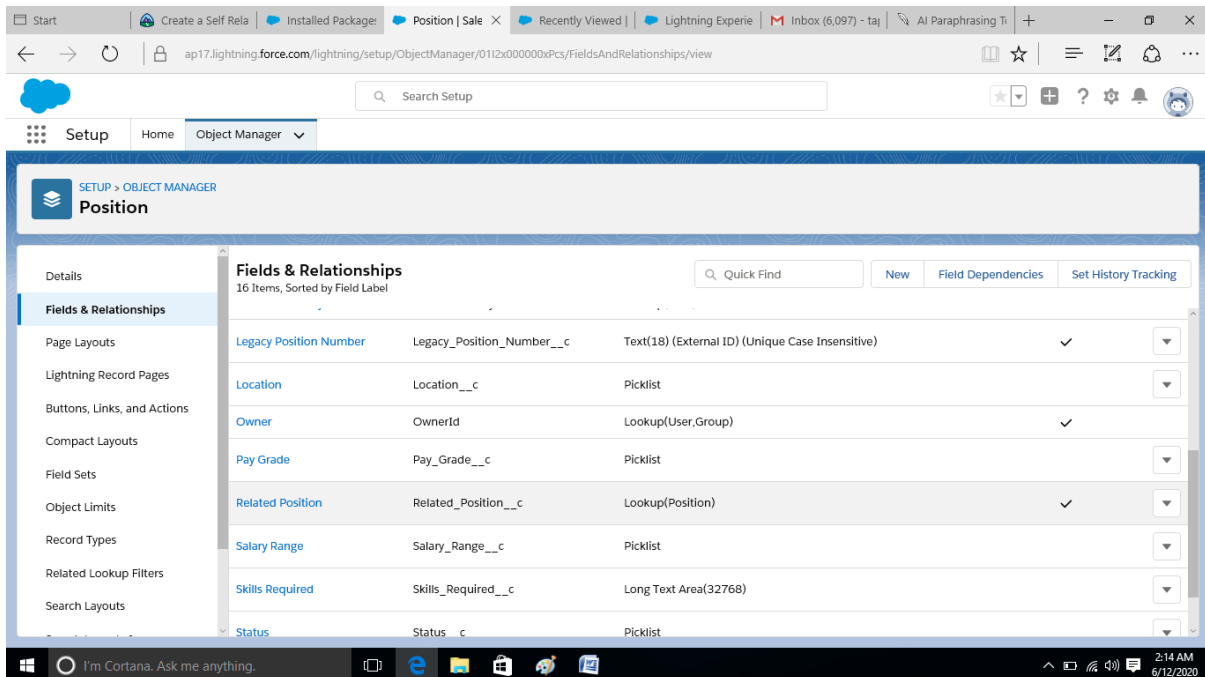

Fig 11: Lookup relationship of position object

- **Creating custom recruiting fields**

In this phase, you can help HR recruiters track the interview process by inserting custom fields to collect details about the outcome of an interview. In the areas of core competencies and leadership skills, it is needed that interviewees should assess and comment on each candidate and provide input on how they are recommending a hire candidate. To do this, set the Analysis object to some custom fields.

- ✓ Now we create three custom picklists on review object namely core competencies, leadership skills, experience so that the interviewer can rate the candidates from 1 to 5.

✓ Then we create 3 text area fields namely core competency comments, leader ship skill comments and experience comments so that the interviewer can add his comments.

✓ We also create a checkbox field namely recommend for hire so that the interviewer can check the box if he recommends the candidate otherwise let it remain unchecked.

✓ We also created a text area field namely reason for recommend to let the interviewer write the reason for recommendation.
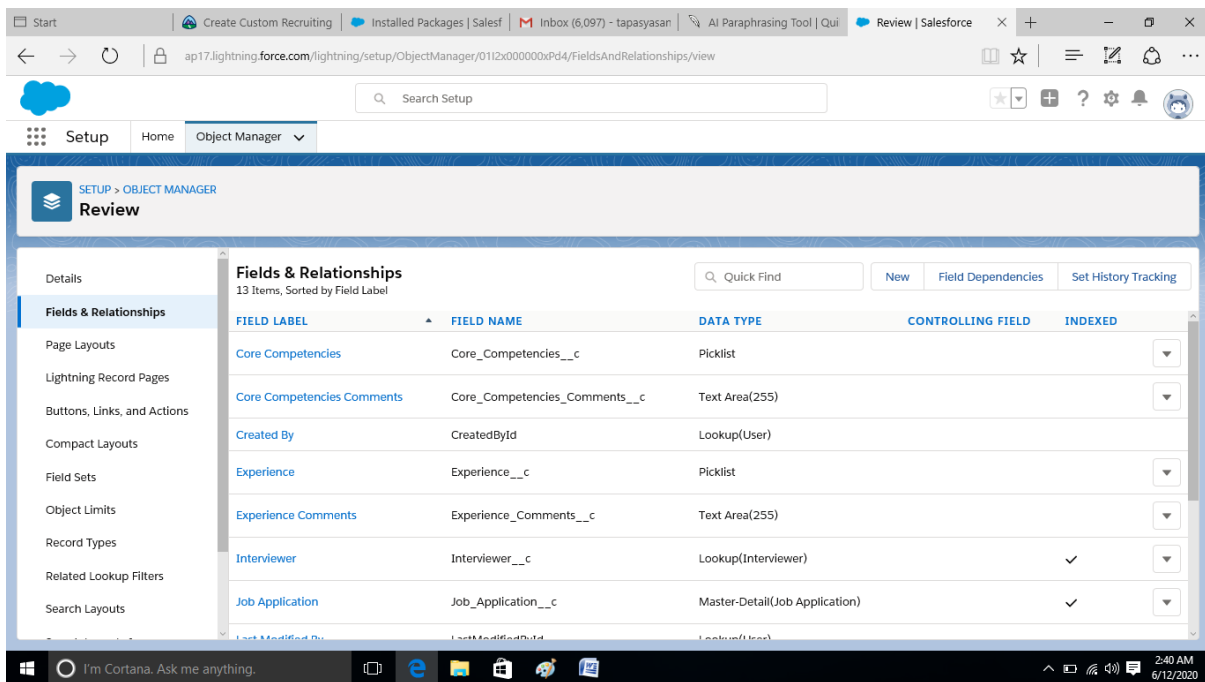

Fig 12: Created custom fields on review object

3.3.2 Customizing user interface for the recruiting application

We continue to configure AW Computing Recruiting App for this project, which is used by the HR team as they work to place candidates in open roles within the organization. We would like to see her recruiters have an effective user interface that helps them match the right candidate with the right job faster

- **Creating a tab for review object**
  We start by creating a tab for review object.

✓ Click on setup and select tabs by searching in the quick find box and click on new.

✓ Select the review object and select the tab style thermometer for the review object.

✓ Click next and save.

✓ Now customize the tab according to the user by reordering the tabs in the recruiting app.

✓ Enter app manager in quick find box and find recruiting and select edit .

✓ Click on navigation items and now add review and job posting to be displayed on the recruiting app.

✓ We can also reorder the tabs according to our own convenience.

✓ Click save and exit.
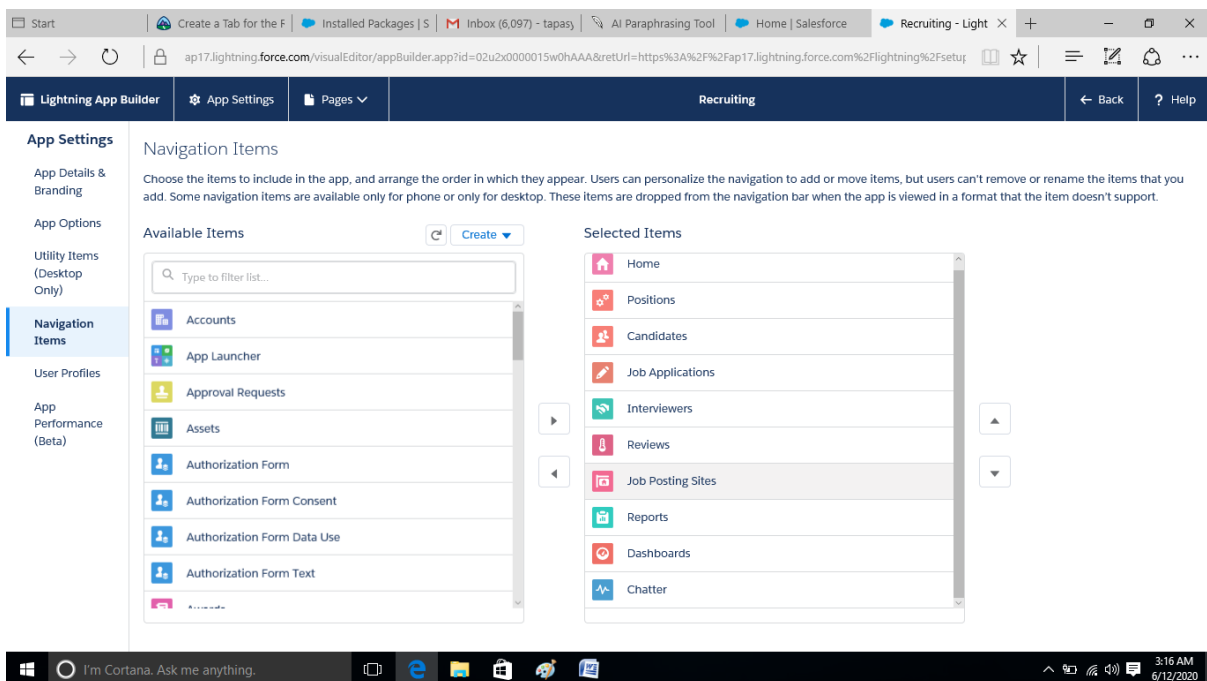
Fig 13: Arranging the tabs in the app

- **Creating object specific quick actions**

  Users can use object-specific behavior to create records which have automatic links to other records, make changes to document records and interact with the document records in distinguishing ways.

- ✓ From setup->object manager select candidate object and click on button, links and actions.
- ✓ Click on new action and create an action of type create a record and label it as New job app and select the target object as job application and click save.
- ✓ Now customize the layout by including status right next to the candidate field.
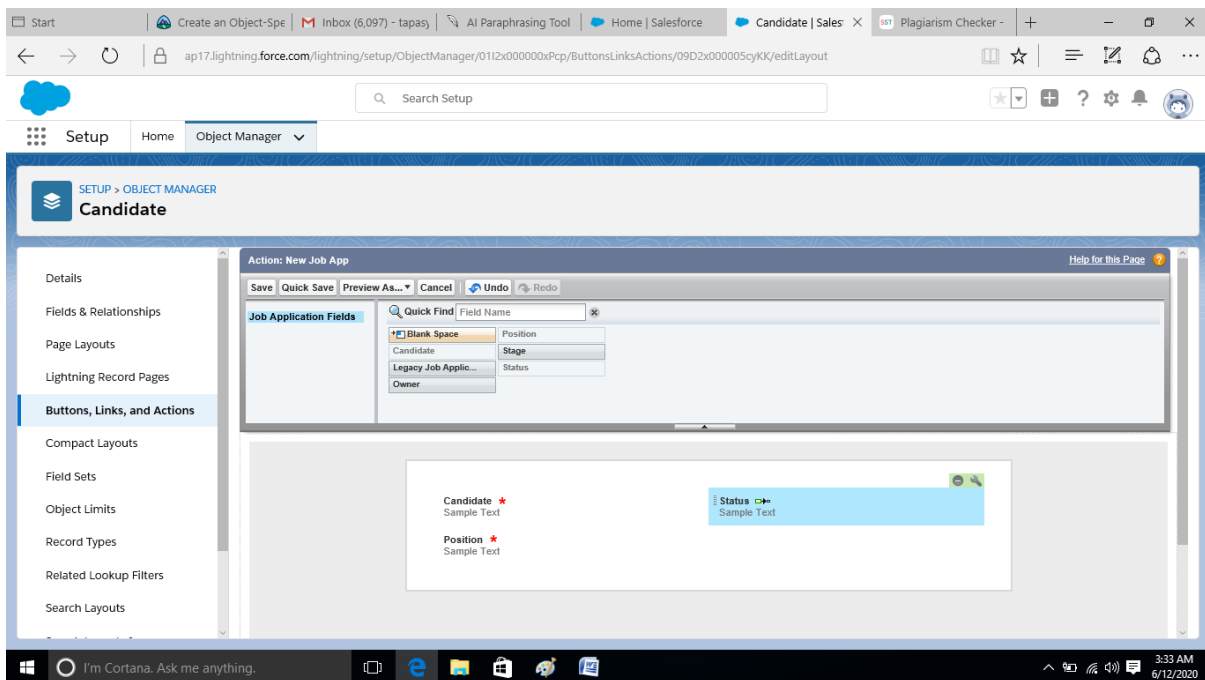- ✓ Click save to save the layout.

Fig 14: Candidate object layout customized

- • **Creating custom record page for candidate object**

  When we create a record page for any object then we can easily add or drop or reorder the lightening components.

  - ✓ From the app launcher select the recruiting app and then click on candidate object to create a new entry.
  - ✓ Enter the first name and the last name and then save the entry.
  - ✓ From setting click on edit page and now move the components according to the convenience like recent items on top of related lists.
  - ✓ We can also assign this as the default page.
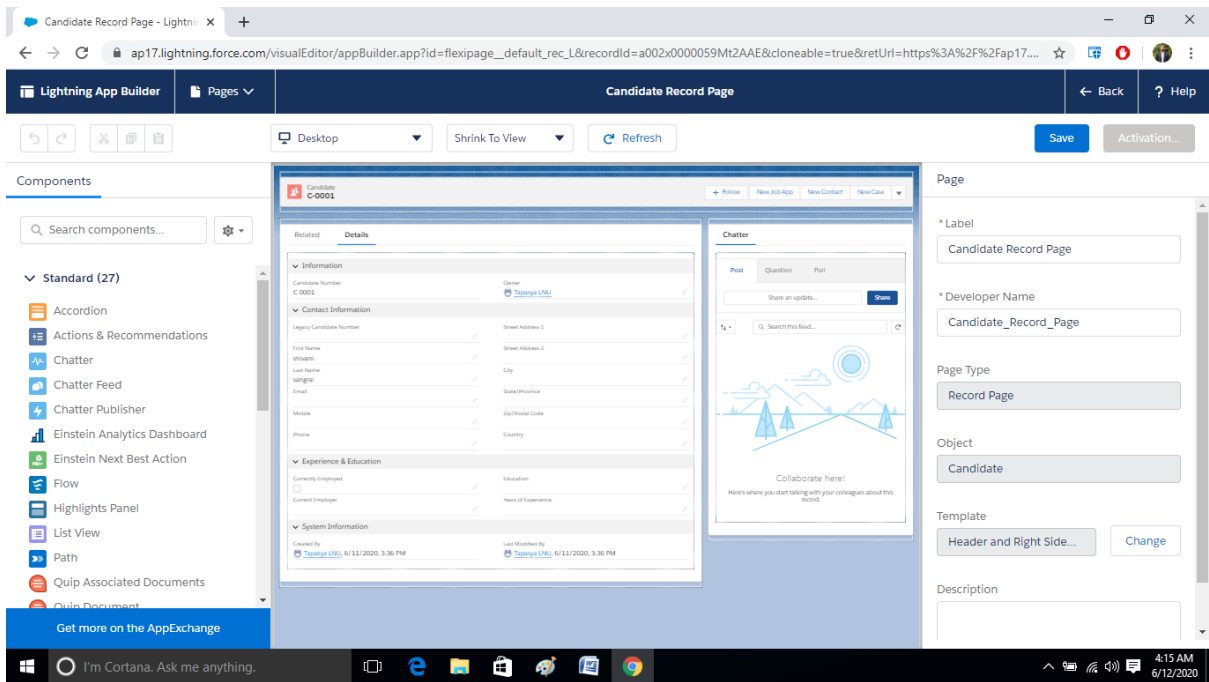
Fig 15: Candidate record page

- **Creating record types on the position object**

  We would like to hire managers at AW Computing so that they can only create new positions for their own departments. We want technical hiring managers, for example, to create positions for their IT and Engineering departments only. You can do this with a tailored type of record. Record types specify which features, including fields, position and properties, are available on page layouts

  ✓ Enter profiles in the quick find box and clone the standard user profile to create two new profile recruiting: technical and recruiting: nontechnical.

  ✓ Now from object manager select position and click on record types to create two new record types for position object.

  ✓ First record type is Technical position which is enables only for recruiting technical profile and includes only IT and engineering options in its department field.

✓ The other record type is Non-technical position which is enabled only for recruiting: non- technical profile and it includes finance sales and support values in the department field.
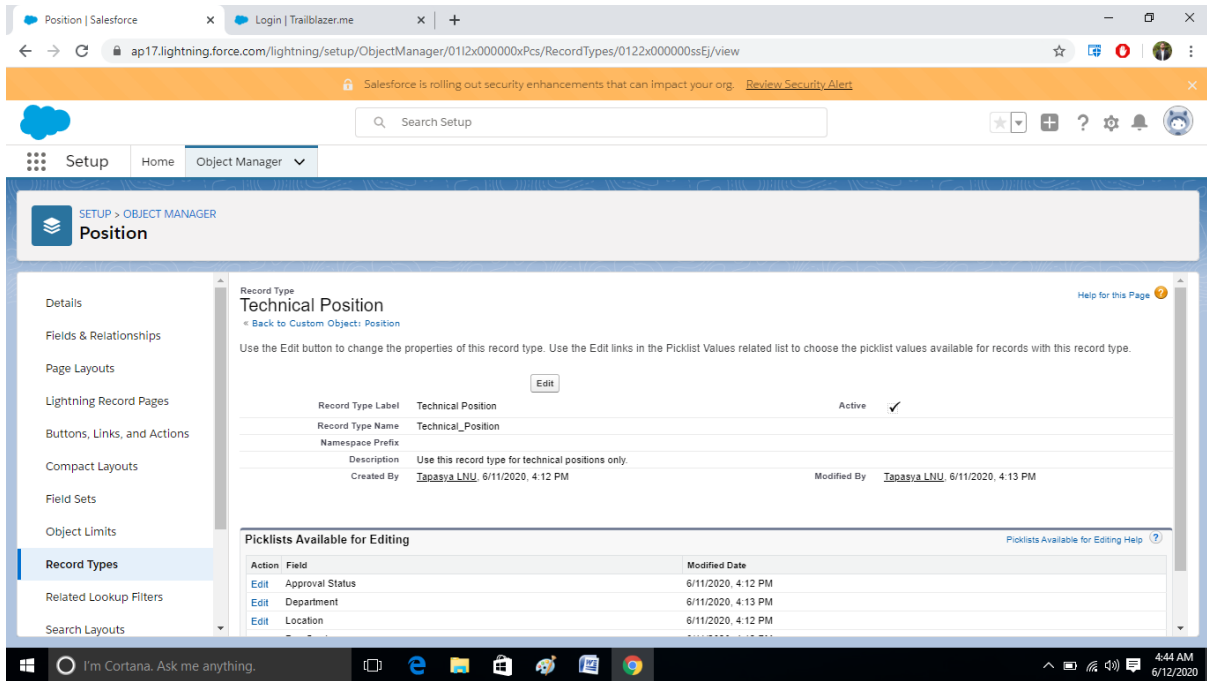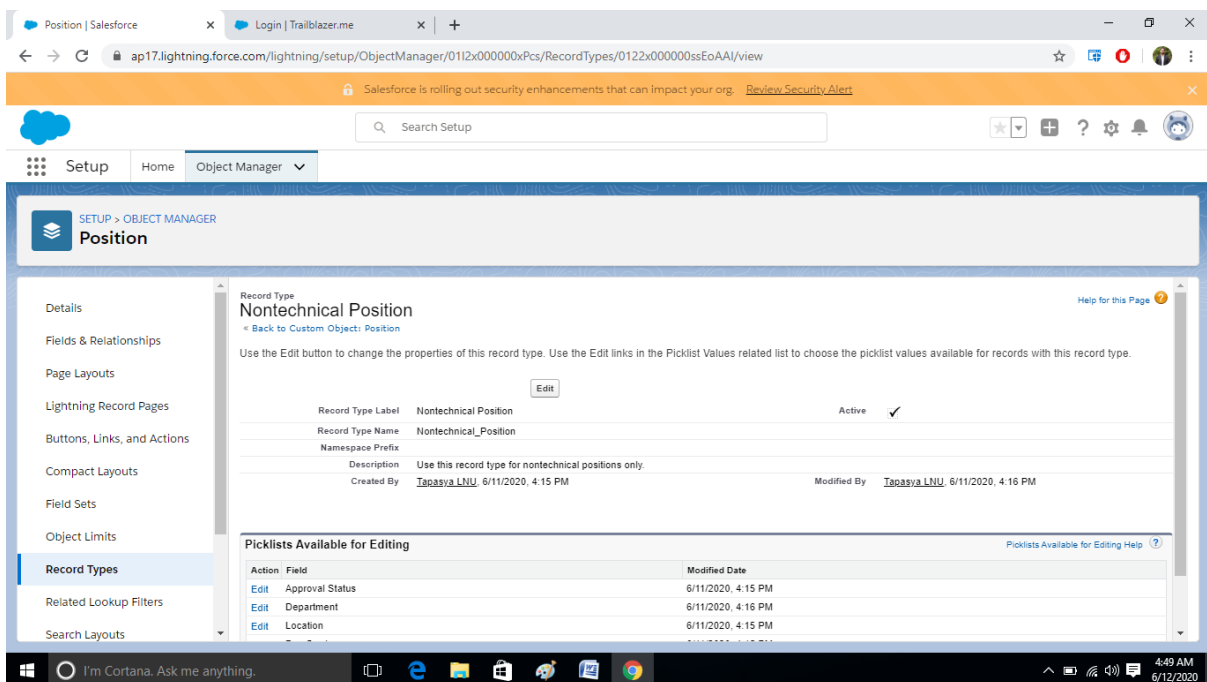

Fig 16: Technical position record type

Fig 17:Non-technical position record type

3.3.3 Improving data quality for the recruiting application

The data entered by the HR team in the recruiting must be consistent. For, this we will use the cross-object formulas to avoid inconsistency.

- Creating cross object formula

  We start by creating cross object formulas so that candidates full name is displayed on the review object.

    ✓ From the object manager select review object and click on fields and relationships.
    ✓ Create a new formula field with label Candidate name of return type text to return the full name of candidate.
    ✓ Now the advanced formula in the section and check for the syntax.
    ✓ Click save if the syntax is correct.
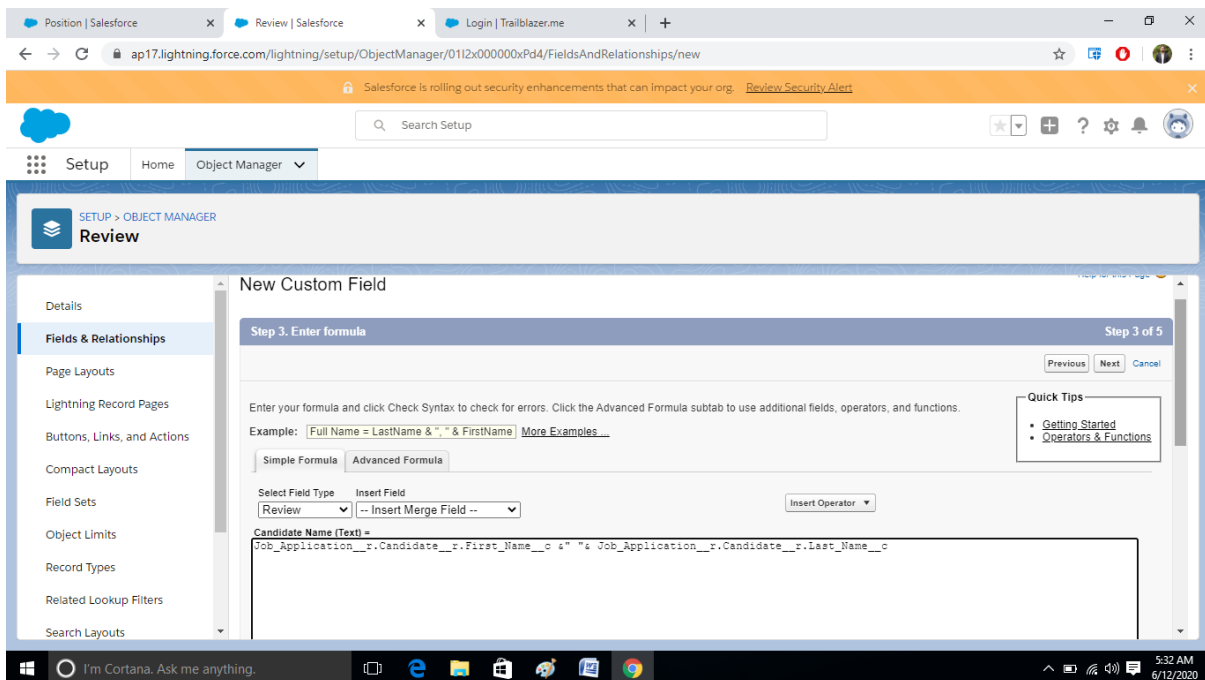
Fig 18: Candidate name formula field

    ✓ Create another formula field to display the position title.
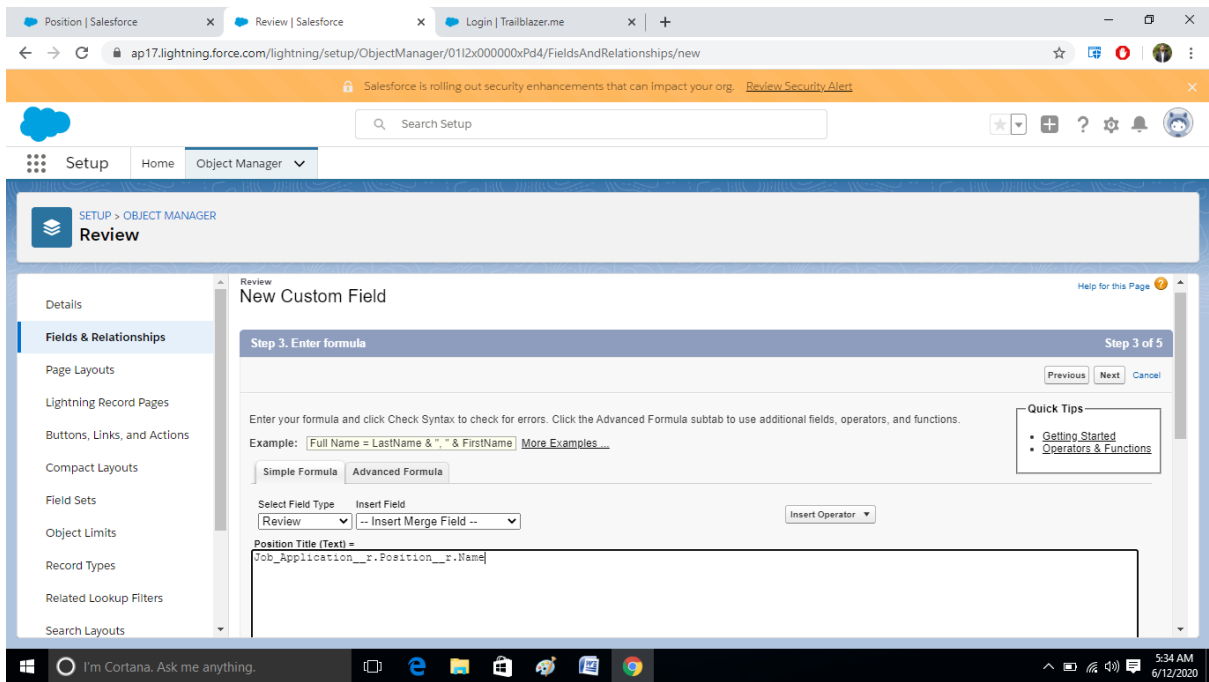   ✓ Now customize the page layout by creating a new section and adding the candidate name and position title to it.

Fig 19: Position title formula field

- **Creating validation rules**

Next, we create validation rules to set some standards according to which only the user must enter the data. They improve the data integrity and also prevent the entry of invalid data. First, we create a validation rule that says that a hiring manager must be included with each position listed in the app.

- ✓ From setup->Object manager, select position and click validation rules.
- ✓ Enter the rule name and other details like description and error message.
- ✓ Enter the formula in the advanced formula section and then check the syntax of the formula,
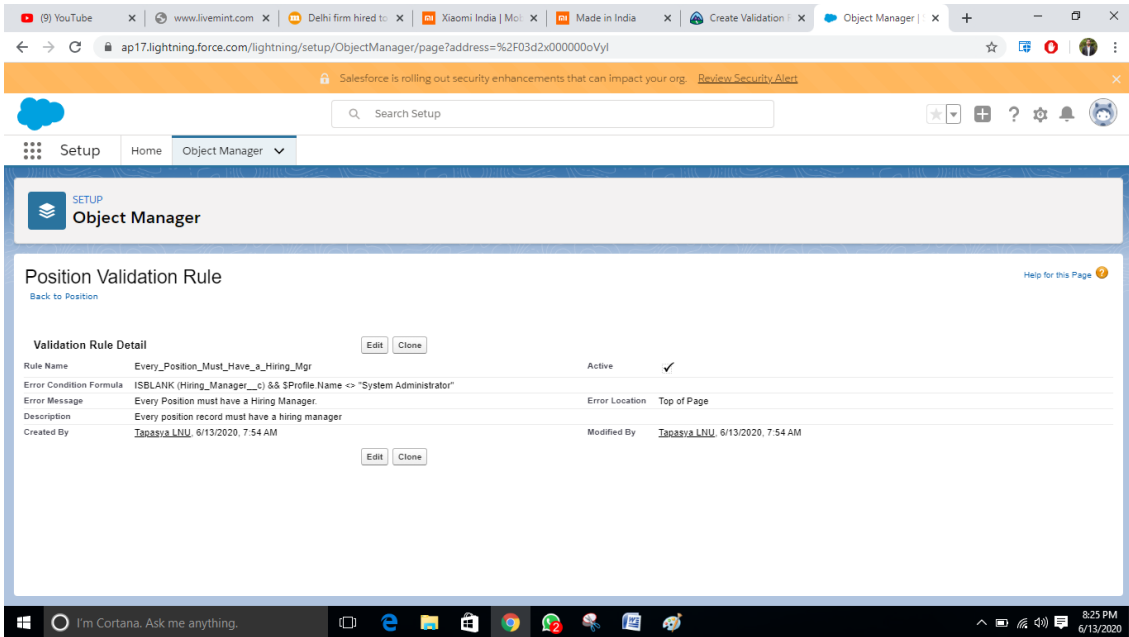- ✓ If it includes no syntax errors click save.

Fig 20: Position validation rule

Now we create another validation rule to ensure that candidates zip code and sates match. But before that we first create a custom object Zip code of type text along with two fields State and City of type text.

- ✓ From setup->Object manager, select candidate and click validation rules.
- ✓ Enter the rule name and other details like description and error message.
- ✓ Enter the formula in the advanced formula section and then check the syntax of the formula and then click save.
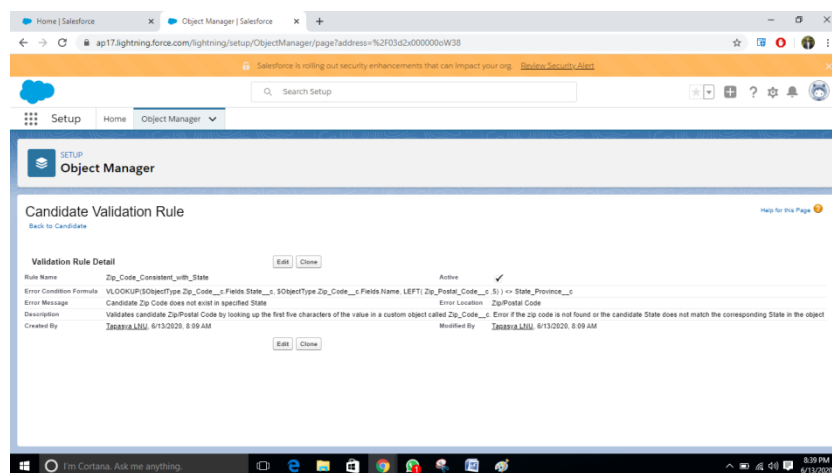

Fig 21: Candidate validation rule

- **Creating rollup summary fields**

  Now that we know a lot of data has been entered about candidates, we know that for the data to be useful it needs to calculated and scored. For this we use rollup summary fields.

  - ✓ From setup->Object manager, select job application object and click fields and relationships.
  - ✓ Select rollup summary field and click next.
  - ✓ Enter the label and select reviews object from the summarized object picklist.
  - ✓ Select count from the list as the roll type and ensure that all the fields are selected for the review and click next, next and save.
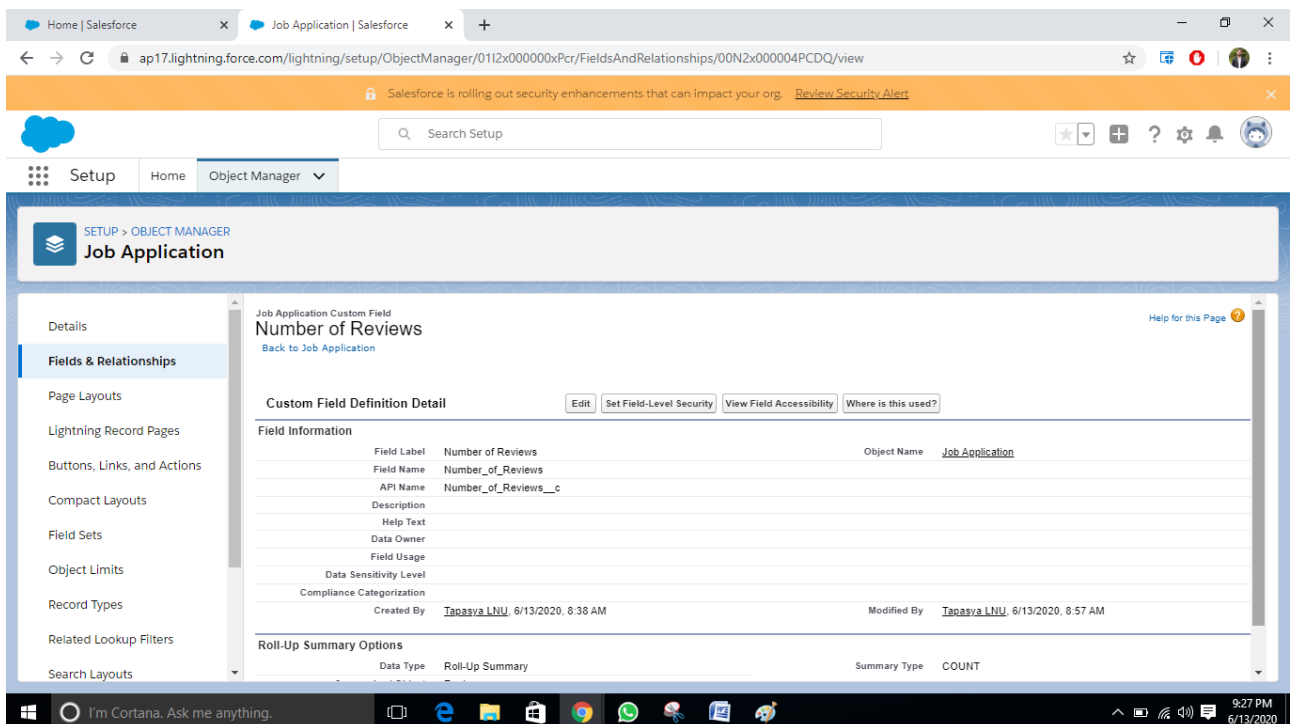

Fig 22: Rollup summary field for the count of reviews

Create another rollup summary field for finding the total review score using the same procedure but select sum instead of count from the rollup types. Also modify the page layout by creating a new section and dragging the two rollup summaries into this section for the reviews.
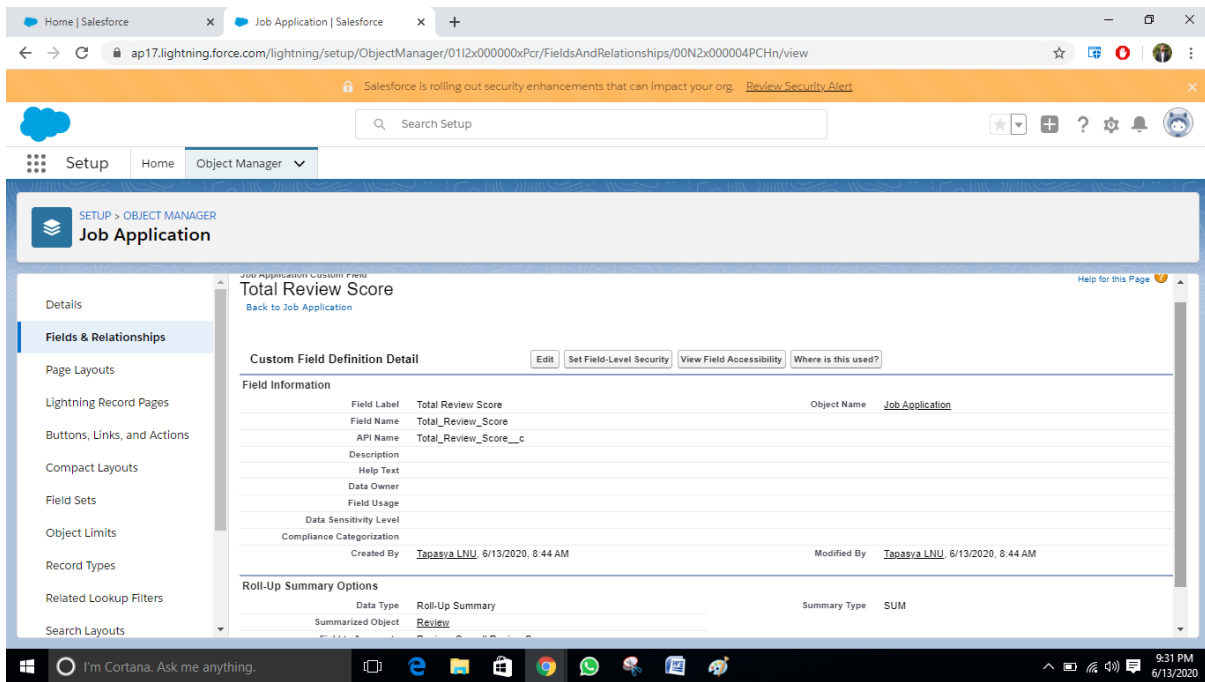
Fig 23: Rollup summary to summarize the reviews.

3.3.4 Keeping data secure in the recruiting app

One of the most important steps is to keep the data secure in the app. This may be done using the permission sets, sharing settings so that the users see only that data that they need to see. The first step is to create a HR recruiting profile and set the standard user profile for all the users.

- **Create custom profile HR Recruiter**

  The first step is to create a HR recruiting profile and set the standard user profile for all the users.

  ✓ From setup enter Profiles in the quick find box.

  ✓ Select Standard User profile and click on clone. This created a same profile as Standard User.

  ✓ Enter the name as the HR Recruiter and save.

  ✓ Now click edit on the profile and on the custom object permissions set the permissions of edit, create, delete, read on all the custom objects so that the profile is accessed by those who are allowed to access.

  ✓ Finally click save and the profile for HR Recruiter is created.
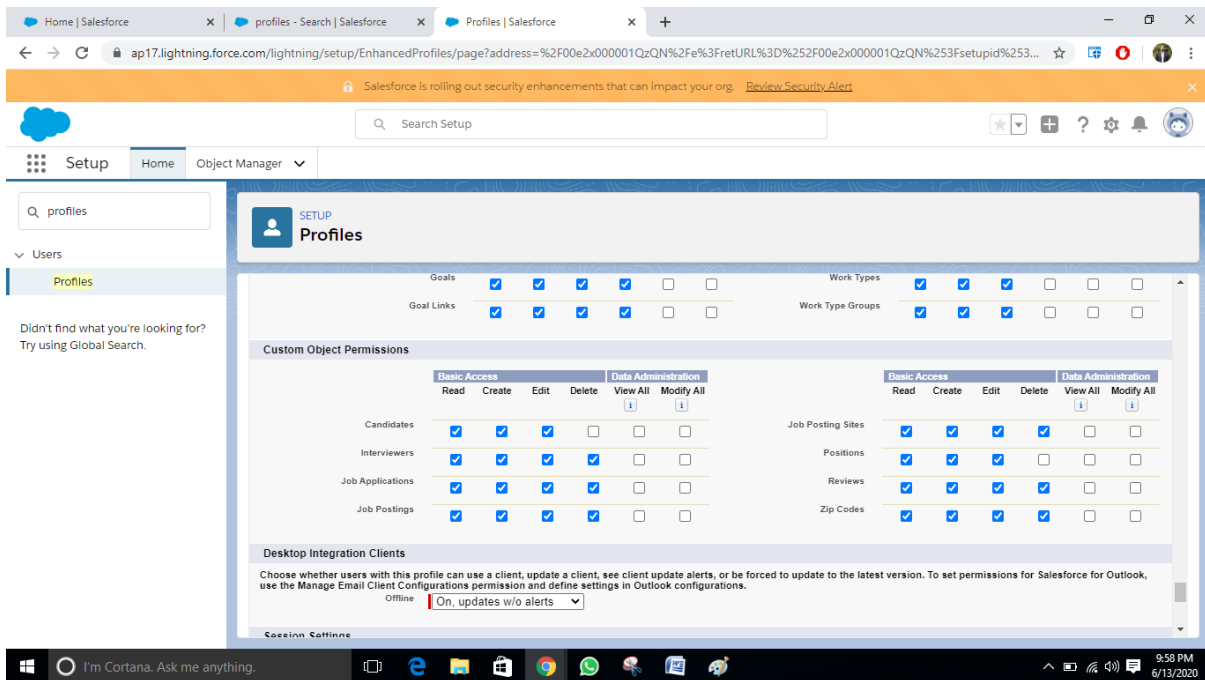
Fig 24: Profile Permissions set for custom objects

- Creating permission sets, Field level security and sharing settings.

  Now we create additional permissions for the users on the basis of which they can access the data

    ✓ From the setup enter the permission sets in the quick find box and click new.

    ✓ Enter the label and description and user license as salesforce.

    ✓ In the app section click on assigned apps and click edit.

    ✓ Add recruiting app from the available app list to the enabled apps.

    ✓ Click, save.

    ✓ From the assigned app list select object settings and click on interviewer object and click on edit.

    ✓ Now enable the object settings as visible, read, create, edit.

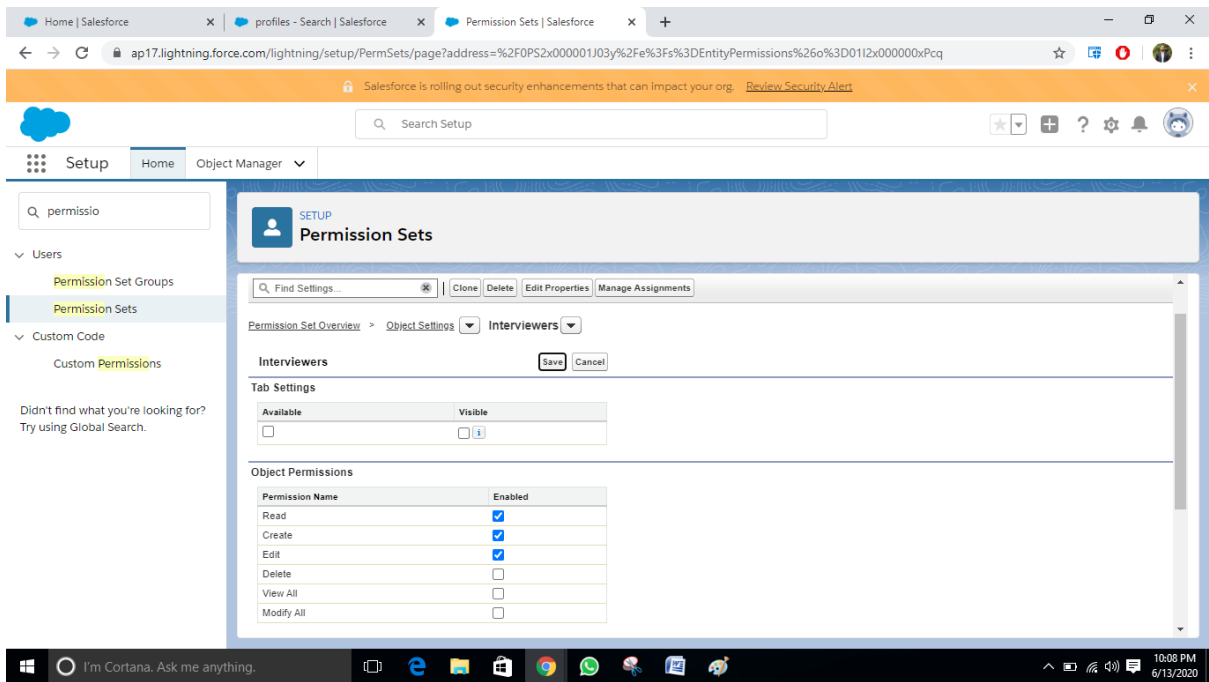   ✓ Click save and enable permissions set for other objects also.

Fig 2**5:**Permissions sets for interviewer object.

Now we set the field level security for salary range field of position object.

- ✓ From object manager select position and click on field and relationships.
- ✓ Select salary range and click on set field level security.
- ✓ Make it visible for HR Recruiter and system administrator and save.

Now every user should have permission to access any record. We give this permission using sharing settings.

- ✓ Enter sharing settings in the quick find box and select it and click on org-wide defaults section.
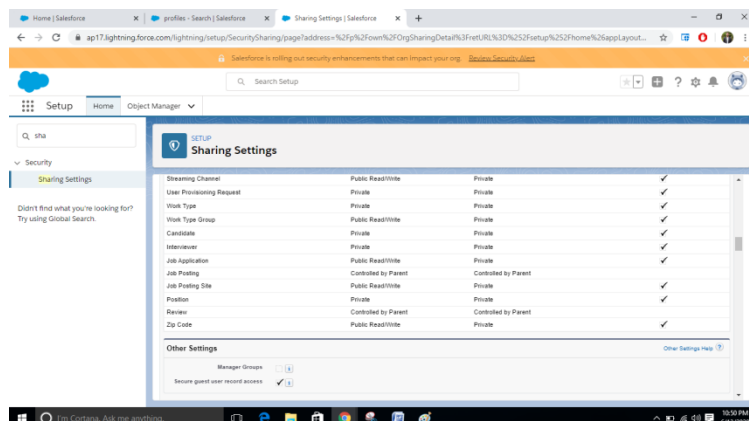- ✓ Click on edit and now enable the settings according to the convenience and save.

Fig 26: Sharing settings enabled.

3.3.5   Automate Business process for recruiting app

We need to automate the business process for our recruiting application.

- **Lay the groundwork for approval process**

  Before creating the approval process, we need to do some pre work like creating some email-templates and a folder to host them.

  - ✓ Enter classic email templates in the quick find box and select it.
  - ✓ Click on create new folder and enter the folder name and give access of read/write to it and make sure that it is accessible by all the users.
  - ✓ Now click on new template and create one for position approved by entering all the details like template name and email body .
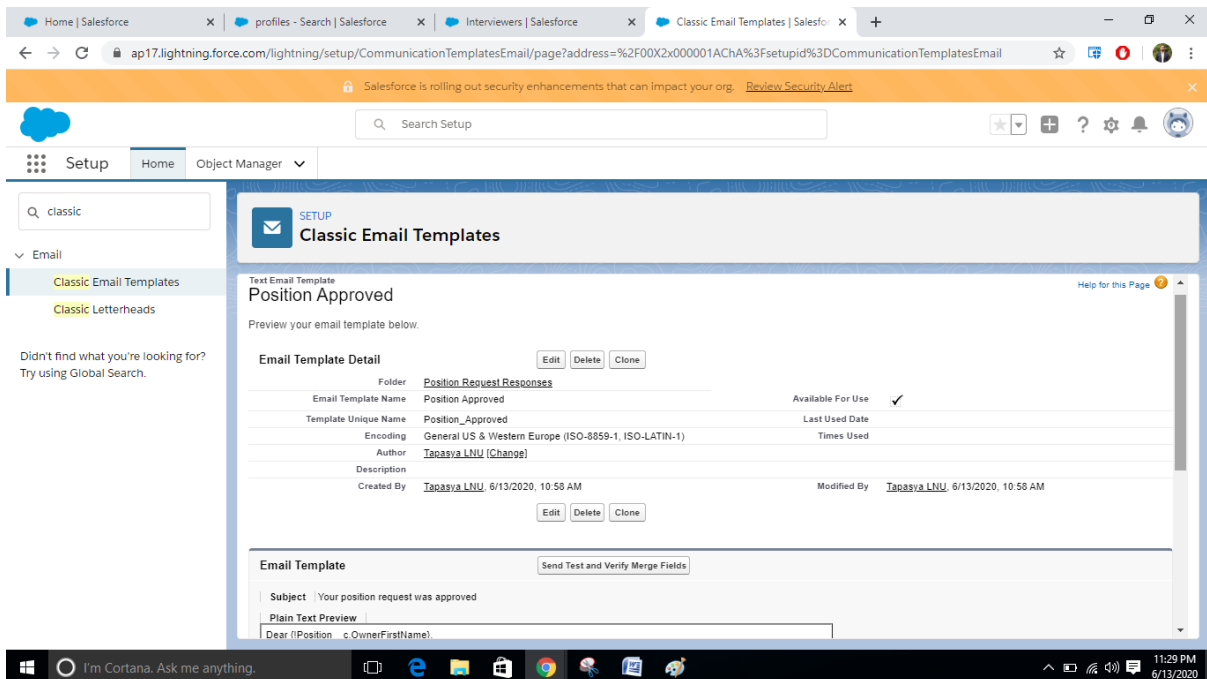

Fig 27: Classic email template for position approved

Now create another template similarly for position declined and also create few fields for the position object and modify the layout by creating a new section and dragging the newly created field on those sections.

- **Creating an approval process**

  Approval process is a process that approves the records. When we create an approval process, we specify all the criteria needed for approving the process. The criteria can be dedicated to a single record or multiple records.

  - ✓ Enter approval process in the quick find box and select it.
  - ✓ Select position object from the manage process as the process is created for position object.
  - ✓ Click on create new approval process and enter the details such as name and description.
  - ✓ Click next, next and save.
  - ✓ Select the fields that you want to add in the approval process page layout and add them.
  - ✓ Ensure that display proper history, approve all the users to access the page and position owner is visible.
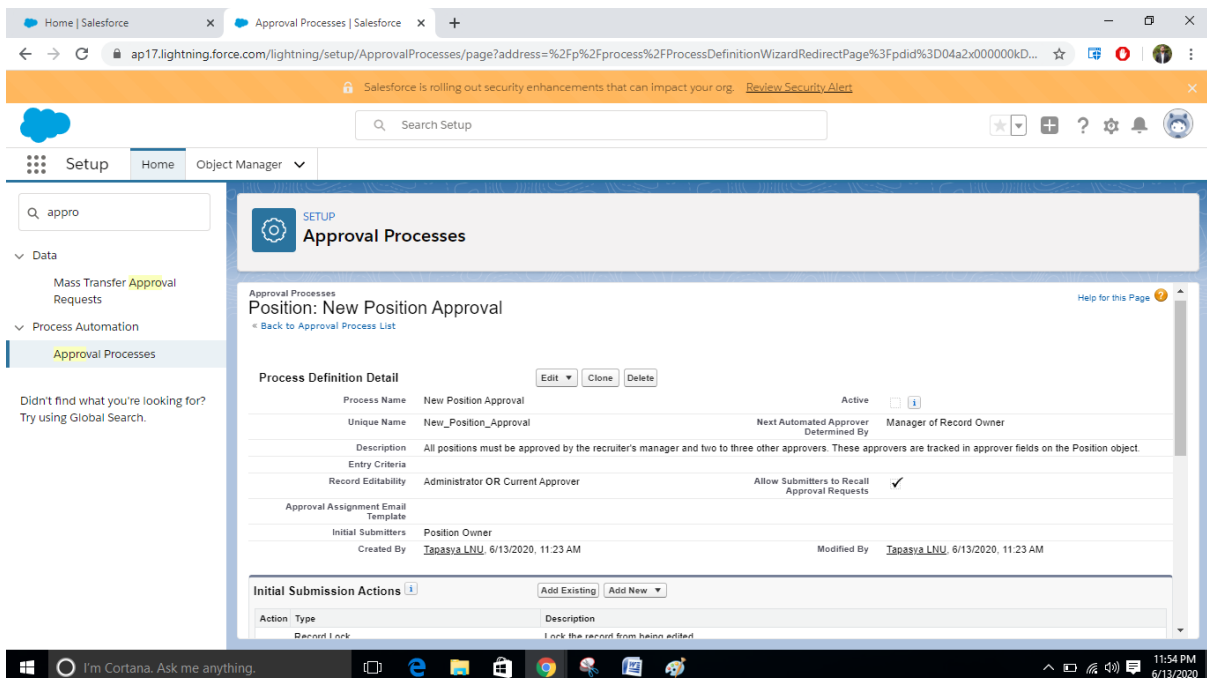 - ✓ Click save.

Fig 28: Approval process created

Now we need to create Approval steps for the approval process.

- ✓ In the approval step section click on new approval step and select field update from it.
- ✓ Enter the name and click next and select all the all records should enter it.
- ✓ Then select automatically apply to all approvers and then select approver 1 from the related list and approver and click save.

This way creates 3 more approval steps for approver 2 and approver 3.

Now we create final approval actions.

- ✓ Under the final approval actions click create and select field update.
- ✓ Enter the details and for field to update select approval status and then select the specified value as approved.
- ✓ Click save and new.
- ✓ Using the above steps create more final actions for status field with specific value new and for email alert select the position approved template and select the recipient as owner.

Then we create final rejected actions

- ✓ Under the final rejected actions click create and select field update.
- ✓ Enter the details and for field to update select approval status and then select the specified value as rejected.
- ✓ Click save and new.
- ✓ Using the above steps create more final actions for status field with specific value closed and for email alert select the position rejected template and select the recipient as owner.

We can create few more actions for our approval steps that all depends upon own company's recruiting convenience.
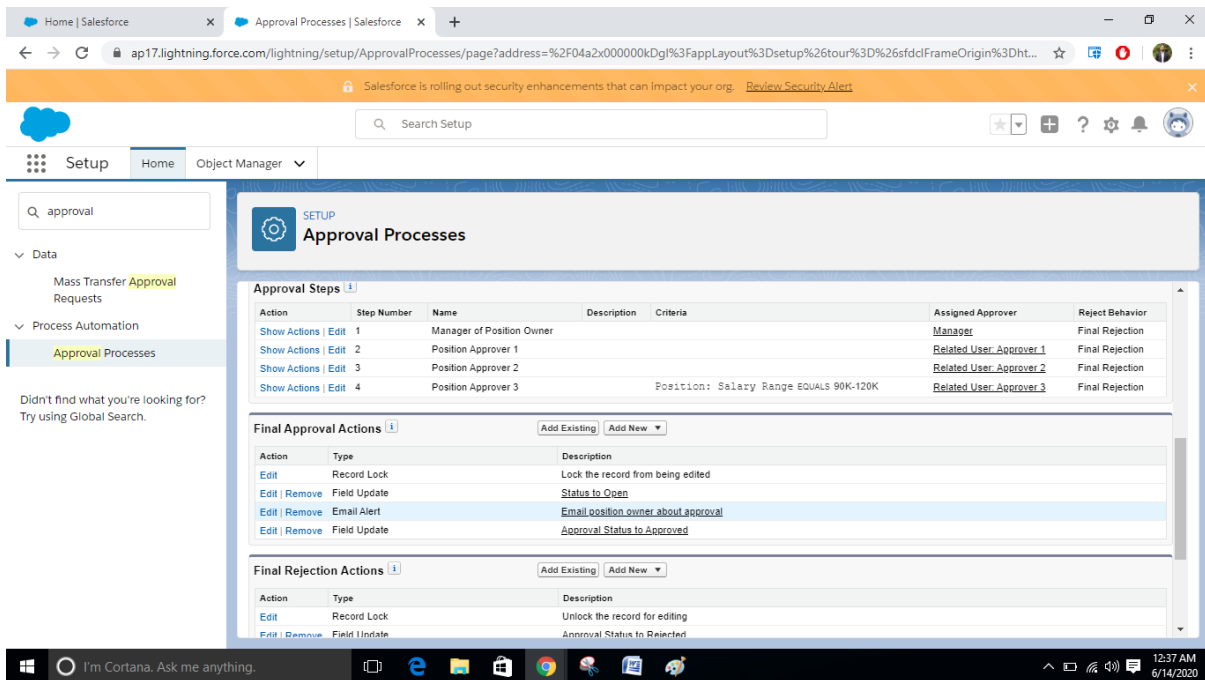
Fig 29: Approval process with certain actions

- **Creating a process for automatic submitting positions for approval**

Since now we have created an approval process, we automate the system by creating a process that automatically submits new positions for approval.

- ✓ Enter process builder in the quick find box and select it
- ✓ Enter the process name and the process will start when a record is changed and click save.
- ✓ Select the object position to be object on which the process will work.
- ✓ Now click on add criteria and enter the criteria name.
- ✓ For executing actions select the options criteria are met.
- ✓ Now choose the criteria according to which the action will take place.
- ✓ Click, save.
- ✓ Click on immediate actions and enter the details
- ✓ Click save activate and then confirm.

We have created an automated process for our recruiting app which will automatically submit the positions for approval.
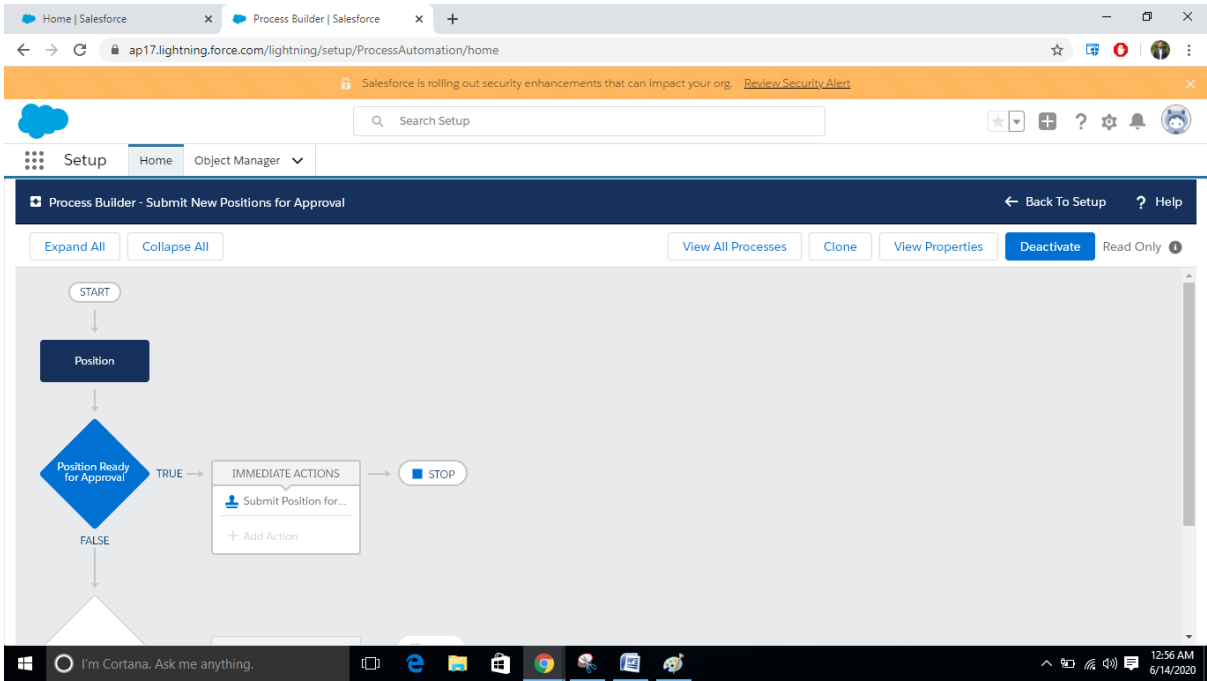
Fig 30: Process is created for automation.

Chapter 4: Conclusion

4.1 Conclusion

We cannot deny the fact that salesforce brings the customers and the company together. It strengthens their relationship. Cloud Computing is the new trend in IT industries. It has the most powerful architecture for computation. Before cloud computing techniques came into existence, traditional business applications were very complicated and involved a huge amount of money. These applications involved a variety of hardware and software that were very challenging. So, it required a whole team of experts to install the hardware and software, configure them accordingly, run and test them and update them as well. It was a cumbersome task to do. Along with that security of the data was also the issue. When we consider multiple applications the effort also gets multiplied. With cloud computing these efforts were minimized and these headaches of managing the hardware and software were eliminated.

Similarly in this project also cloud computing has come very handy. With the help of salesforce a recruiting app was developed with the help of which the recruiting process for any company can be made easier and time consuming as well as the data can be entered in the application about the recruiters and nothing needs to be done manually. Every calculation can be done with the help of this application in just few clicks. Remarks and comments can be entered, they can be compared , the information can be analyzed and the whole process is automated.

Even more things can be added in this project to increase its performance. However this is just a basic version of a recruiting application.

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