Recruiting Application Developed on Salesforce

(Project Term January-May, 2020)

Project report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

Submitted by:

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UNDER THE GUIDANCE OF

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to

Department of Computer Science & Engineering and Information Technology

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

Project Report Undertaking

I Mr. Varun Saxena Roll No.-161332 Branch Computer Science Engineering is doing my internship with Cognizant Technology Solutions from 7th February 2020 to 5th June 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.

Varun Saxena

(12th June 2020)

CERTIFICATE

I hereby declare that the work presented in this report entitled "Recruiting Application Developed on Salesforce" in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering/Information Technology 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 7th February 2020 to 10th May 2020 under the supervision of **Dr. Pardeep Kumar (Associate Professor, SM-ACM) and**
Mr. Shibu Kalidhasan (Salesforce trainer at Cognizant Technology Solutions ltd.).
The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Varun Saxena (161332)

This is to certify that the above statement made by the candidates is true to the best of my knowledge.

Dr. Pardeep Kumar (Associate Professor, SM-ACM)

Mr. Shibu Kalidhasan (Salesforce trainer at Cognizant Technology Solutions ltd.)

ACKNOWLEDGEMENT

I would like to express my gratitude to my training instructor **Mr. Shibu Kalidhasan who** guided me throughout the project **"Recruiting Application Developed on Salesforce".** He helped me in the thorough understanding of project, implementing the functionalities and making our project more responsive and efficient.

Secondly I would also like to thank my friends and all my mentors who helped me in finalizing the project with in the given time.

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LIST OF ABBREVIATIONS

S.No.	Abbreviation	Definition
1	Paas	Platform as a service
2	CRM	Customer relationship management
3	SFDC	Salesforce developer console
4	MVC	Model view controller
5	UI	User Interface
6	HR	Human Resource

ABSTRACT

This project recruitment application is a system where HR can also automate the recruitment of HR applicants online, view organizational requirements and apply for the appropriate job.

Recruitment Application provides the users worldwide with online help. Such application provides the users worldwide with online help. Such application plays an important role in the simplification of the recruitment process.

Earlier the hiring process was done in a manual manner in which every step was time consuming. Now with the available solutions this type of application can be implemented at several levels of integration and is scalable to different levels.

With this application for a company it would be easier to manage staff activities and the most benefitted would be the HR team of the organization.

CHAPTER 1.

INTRODUCTION

1.1 Introduction to cloud computing

Cloud Computing is characterized not as a community server but it stores as well as deals with cloud-based data. It's easy to understand cloud computing. All programs within the web browser are created and run. Using the network connection, users and builders will be able to access all applications, thereby offsetting the complexity and overhead of the preservation of the environment.

Cloud computing- it can be accessed from everywhere even from remote places with an internet connection unlike conventional business applications that maybe complicated or may quote high prices and need experts to install, run, replace and secure. The entire system should be painted together in conventional frameworks. Constant security is common for such type of smooth interaction and for easy operation of the device. It is not necessary to invest cash in acquiring and assisting hardware and software infrastructure in resulting of low cost or decreased cost for users and developers and this is only made possible because of cloud computing.

Cloud computing primarily affects the functionality of the applications. In the cloud computing framework, we can immediately connect customers and owners, and the applications can be easily delivered into the cloud, raising the response time of the user request. With then reduced complexity the enterprise will boost the whole IT cycle process.

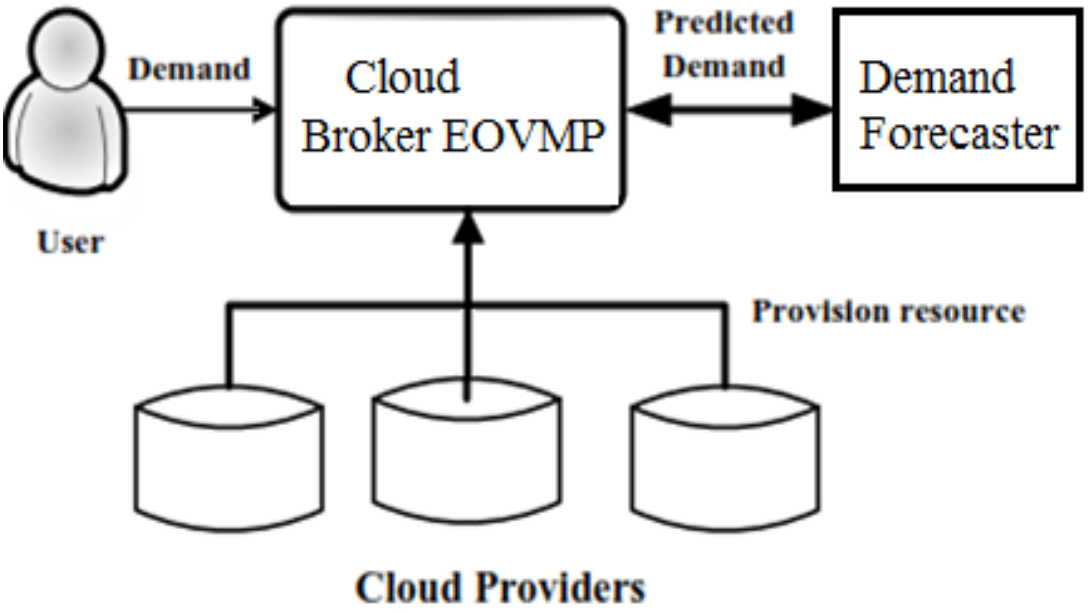

Fig 1. Cloud architecture.

1.1.1 Major benefits of cloud computing:

Cloud computing is a significant change from the conventional form in which businesses work about the capital. The seven common reasons why organizations turn to cloud services are:

- Price -Cloud computing helps users to reduce the capital cost to buy hardware and software and to set up and operating data-centers on site — computer server racks, the round clock time for power and cooling energy, the IT experts for managing the infrastructure.

- Speed -Major cloud computing services are capable enough to provide self-service that too on demand, so that even large number of computing resources can be delivered in less amount of time, typically with just a few mouse clicks, therefore giving businesses huge level of of flexibility and exerting the pressure off capacity planning.

- Global scale — Advantages of cloud computing services elastic scaling capability. In cloud means to provide the exact amount of resources: more or less processing power, storage, bandwidth required for according to a particular geographic location.

- Productivity — On-site data-centers usually need a lot of "racking and stacking" to set up equipment's, software patching and other time-consuming IT management activities. It eliminates the need for many of these activities, thence these IT managers can spend time on more relevant business objectives.

- Performance — The largest cloud storage services operate on a worldwide network of secure data centers that are updated to the latest generation of powerful, reliable computing hardware on a regular basis 24*7. This provides huge benefits over a single corporate data-center.

- Security — In the market many cloud providers tend to offer a large set of policies, technologies that enhance your overall security posture, thus helps to secure your data, applications and framework against potential ultimatum.

1.1.2 Kinds of cloud computing:

It is not compulsory that every cloud is equal and not one type of cloud computing style ids is right for all. Various models, verities and resources have evolved to help provide the exact solution the demands.

Firstly, you need to decide the type of cloud framework or architecture for the cloud service to be implemented on. Cloud services are distributed in three separate ways: Public, Private and Hybrid cloud.

Public cloud — Third party cloud service providers own and operate public clouds which deploy their resources such as servers and internet storage. Salesforce, Microsoft azure are examples of a public cloud. In a public cloud, the cloud provider

run and maintains all the hardware apps, and other related resources. Everyone can have access and handle these services by the help of a web integrator.

Private cloud - It refers to the resources that are used thoroughly by a private owner or by the entire organization. A private cloud can be found physically on the company's on-site data center. Some firms pay for hosting their private cloud to third party providers. We can say that it is one which support the services and framework on a private network.

Hybrid cloud - It combines both private as well as public clouds, that are linked to each other by technology hence allowing data and processes to be shared between them. A hybrid cloud provides your organization with more flexibility, more implementation options and helps to leverage the current framework, protects and securement by allowing information and applications to move between private and public clouds.

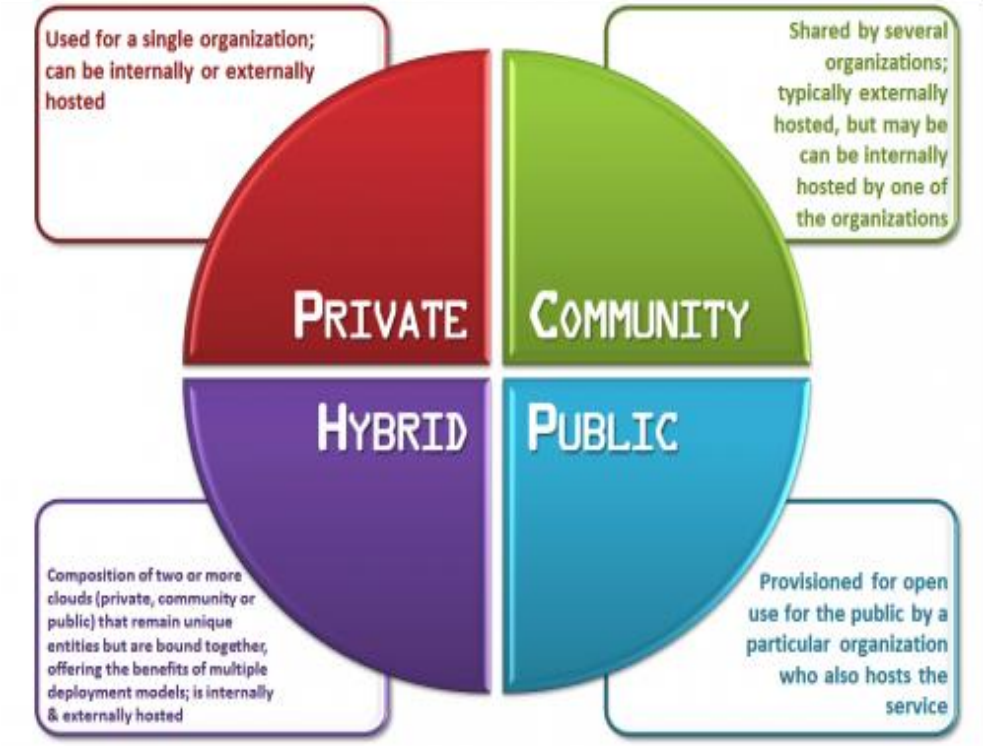

Fig2. Kinds of cloud

1.1.3 Versions of cloud services:

Almost all cloud services are categorized as:

- providing infrastructure,
- providing platform and
- software as services

These are sometimes referred to as the cloud processing stack, since they build on the top of each other.

Infrastructure as a service (IaaS) — The lowest category of cloud computing services. Using, you can rent IT framework: physical and virtual processors (VRs), storage, networks, operating systems—from a cloud given on a pay you go basis.

Examples: Amazon EC2, Rackspace, Google Compute Engine.

Platform as a service (PaaS) — Platform as a service points to cloud computing services which delivers ondemand environment for software application developing, testing, delivering and managing. It is designed to make work easy for programmers t quickly create web or mobile applications, without worrying about setting up or managing the underlying framework of servers, storage, network and databases infrastructure.

Examples: AWS Elastic Beanstalk, Windows Azure, Heroku, Force.com, Google App Engine,

Software as a service (SaaS) —It is a mechanism to providing on demand and usually on a subscription basis software application. They host and maintain the software mechanism and underlying framework through this, and tackle any maintenance, such as software updates and securing protection.

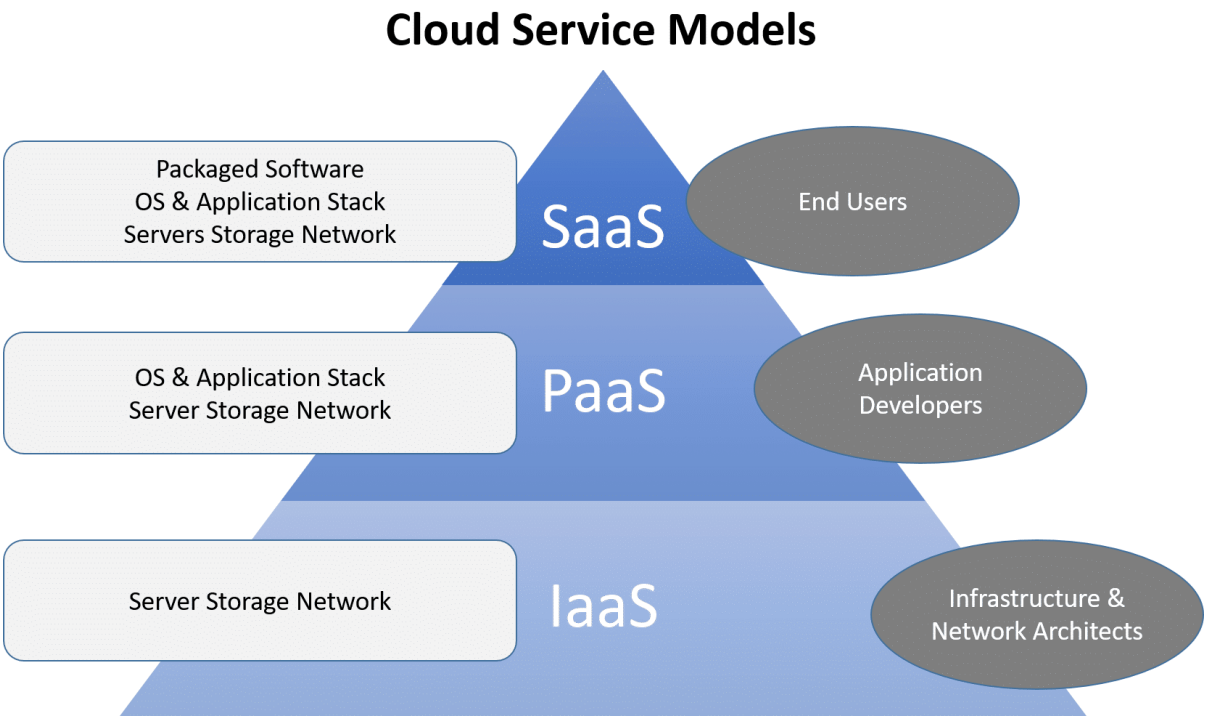

Fig 3. Cloud Services.

1.2 Introduction to CRM

Customer relationship management (CRM) is a technology that manages all the relationships aswellas interactions with customers and potential customers wit hin the business. The aim is simple: Improve relationships among business . A CRM program provides forestay connected, streamline processes, and increase in productivity.

When people speak about it, they are usually referring CRM as a device or an instrument, a tool that helps with contact management, productivity, and more.

This tool lets you focus on the relationships thatcompany has with individual people includes clients,

users, employees or suppliers with them during the lifecycle, including attracting pot ential customers, winning their business, and offering support and complementary se rvices throughout the partnership.

1.2.1 For whom CRM is?

A CRM system gives everybody – from sales, customer service, business developme nt, recruitment, marketing, or any other business line – way to manage the external in teractions and relationships that ensure success allowing you to store and prospect contact information, identify sales opportunities, record service pr oblems and manage marketing campaigns, all at one central location—and make information about every customer interaction available to anyone at your company who might need it.

With visibility and easy data access, collaboration is made easier and productivity is i n
creased. Everyone in your company can see how you communicated with customer what they bought, when they last bought, what they paid for, and so much more.

CRM can help businesses of all sizes to grow, and can be particularly beneficial for a small business, where teams often need to find ways to do more with less.

1.2 What is Salesforce?

It is one of the world's leading cloud computing firms and the number one customer c ourting management (CRM) ondemand. Salesforce does not require any software or hardware installation, or resources such as servers. The internet is all we need to get entry into Salesforce. This enables even the most nontechy people to use and configu re the system as consistent with their demands.

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1.3.1 Salesforce Architecture

Salesforce has a multitenant architecture in other words it means that there is a single cloud provider who provides with a platform as a service and each of the user has their own working space inside that service. When in a building each flat is same but the tenants are different or the people who rented the flat or the service are different.

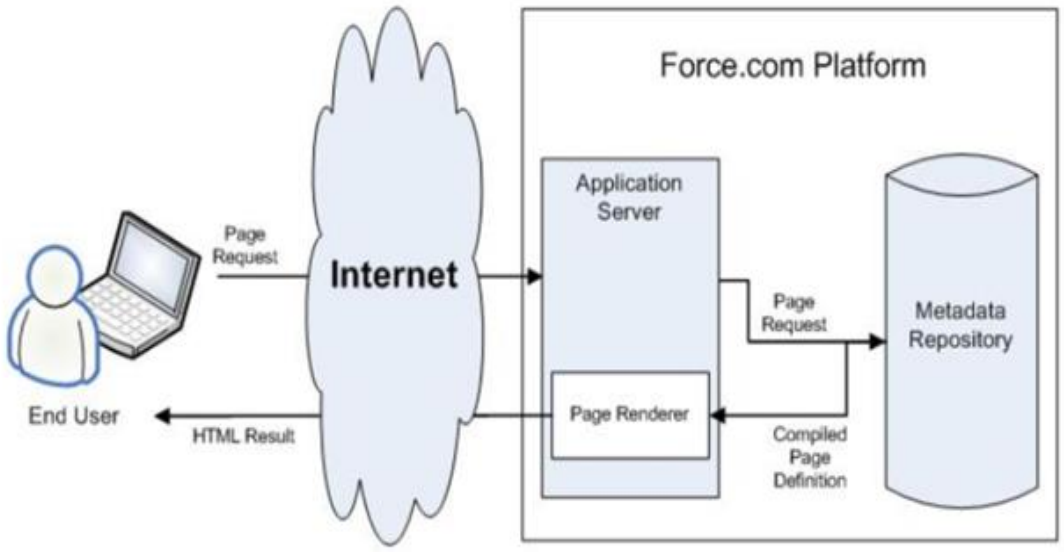

Fig 4. Salesforce Architecture.

The architecture flow diagram in the above picture shows how data flows between the cloud providers and service rendered by the user on the other end this platform on salesforce is stored in a meta data repository.

The html request made are done through the visual force pages created by salesforce.

1.3.2 Salesforce Model View Controller

MVC is a design pattern that differentiates business logic from computer logic that is it separates user's displayed graphical interface from code that handles user actio ns [4].

In Salesforce, we can use visual force from SFDC to write VIEW pages which are ve ry close to the page (JSP) of the java servlets. Each page of the Visualforce (VF) is correlated to a controller. Controller and Class model can be written using Apex language.

The Model is the usable database. In Visualforce, it is set of Salesforce objects and fields.

The View is the coding that develops up our page's User interface. In this case, its of residing in the HTML, JavaScript and visualforce pages used in the UI.

The Controller is the middle layer between the model and the view. It's Apex code with the database according to the view's needs.

- Model-view-controller (MVC) promotes the separation of an Application into 3 components:
  - An application data storage (Model)
  - An application user-interface (View)
  - An application's logic (Controller)

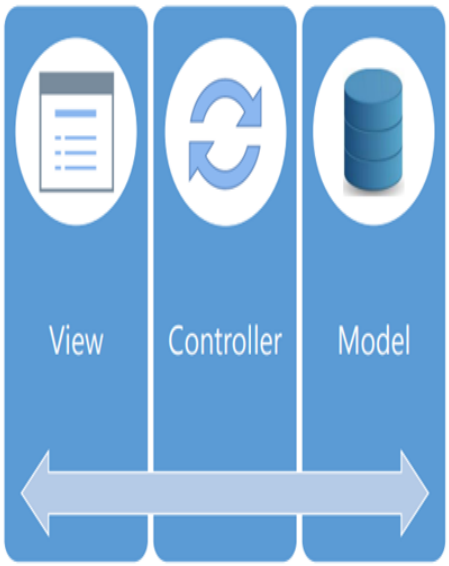

Fig 5. MVC of Salesforce.

1.3.3 Different Salesforce versions (Editions)

Salesforce tends to offer separate versions of its products and services which cpo depend on organization requirements.

1)Professional Edition: It consists of full customer relationship functionality.

2)Enterprise Edition: This edition offers more senior CRM customization and administration tools along with provisions of Professional edition.

3)Unlimited Edition: Along with functionalities offered by Enterprise Edition, Unlimited Edition even offers full mobile access, premier support, unlimited custom apps and more.

4)Developer Edition: This edition allows programmers to extend the Salesforce system, integration with other mechanisms and develop new applications and tools.

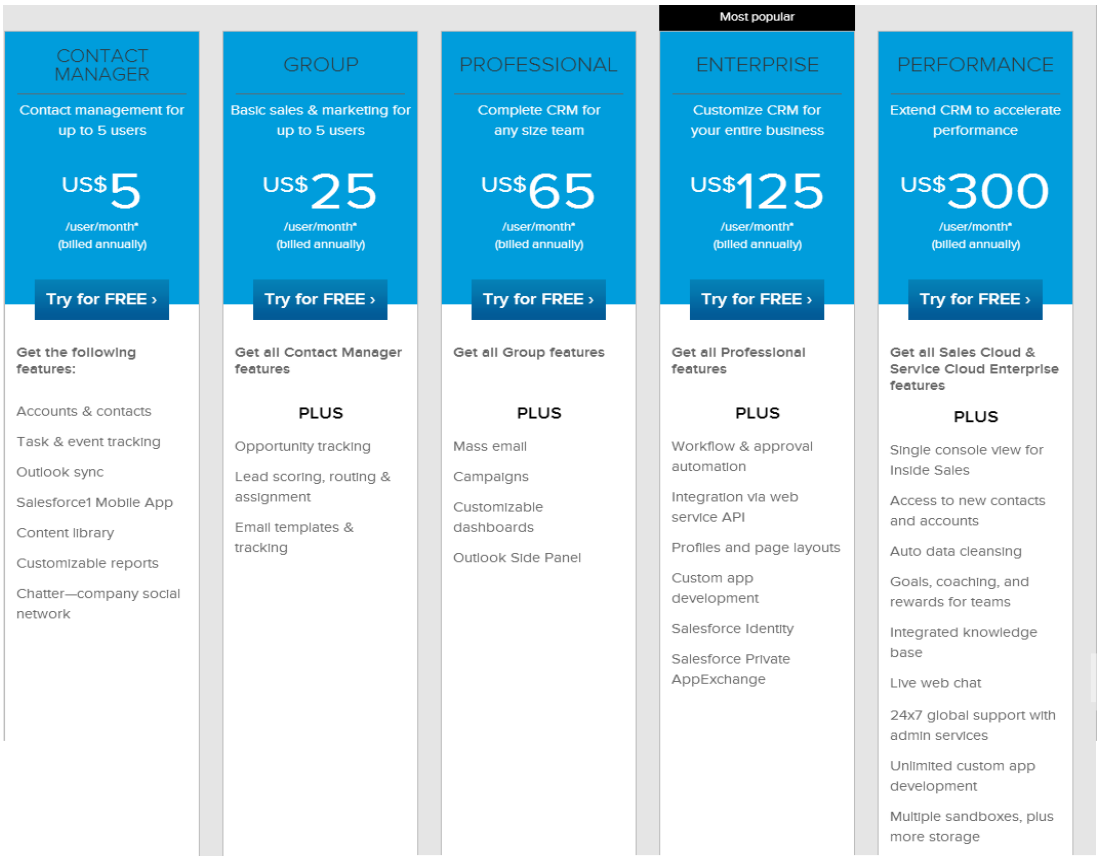

Fig 6. Salesforce Editions.

1.3.4 System Panoramic View

Salesforce combines configuration power with custom development within its platfor m i.e. Platform Force.com. This software interface will use custom code, workflow r ules, approval processes to apply their business logic, connect the data with other app lications, produce reports and do the analytics within no time.

The Salesforce CRM model is used for communications with organisations such as e mails, calls, consumer experiences and also for opportunities such as sales, promotio n and assistance. Through Force.com we will use the Salesforce1 software to run co mpany on the device. Using HTML 5 and UI framework, we can build and optimize mobile apps, and support all devices with a single code base [5].

1.3.5 Technologies in Salesforce

1) Apex

Apex programming language used by salesforce. This language is case in sensitive, object oriented platform identical to java syntax. Apex is used in Force.com to run programs and procedures such as connections, keys, record injection and so on with personalized controllers [5].

2) Visualforce (VF)

It is a framework with tag-based markup language same as to HTML on the Force.com platform. Using Visualforce, custom sites can be built along with the aid of the other front-end technology such as HTML, CSS, jQuery, and JavaScript for mobile phones and Desktops [5].

3) Lighting

It is a component-based architecture prepared for user equipment applications from Salesforce that is developed on a open source framework. This allows easy building of responsive applications.

1.4 Problem Statement

A cloud platform has been provided by Force.com that lets organization to build a CRM solution for their organization and moreover do it in radical successful manner. It's a multi-tenant software baring to its features and now many deployed applications can be constructed making the life of the Organizations easier in many ways.

The scope of this project is limited based on the application developed in force.com: -

- To build and develop an application for the sales company to recruit new members in an easy way
- Ease of access and use for the HR team of the company by creating custom objects and relationships
- Security Analysis
- Developing a proper UI
- Automatic business process for the existing app

1.5 Objectives

This is an application which uses cloud computing capabilities and features to attain a fully fledges CRM solution making it possible through Paas feature. I have used" Sales Force" features to achieve the aim.

The main goal is to build and deliver an application in the sales force environment. This application project created must satisfy needs of customers and should have every cloud computing ability to achieve the expectations of users.
This application will be developed and built in the following environment: Force.com environment.

1.6Methodology

We will be using force.com platform for developing the application and to achieve this we will use the sales force cloud-based Technology in the following steps: -

- Firstly, we start with creating a data model for a recruiting app the data model will contain different types of custom objects.
- These custom objects would be related to each other by the relationships provided by the Salesforce platform.
- These custom objects would have their own custom fields for the required data to be imported.
- We will use automated business processes and approval processes together for the proper functioning of the app by the company.
- There are different types of records and each record has its own page layout including quick action tabs for an interactive UI
- We will restrict data access using custom field security options so that there is a role hierarchy in which each one has its own level of Record access and the data is secured at all times
- Data validation and formulas for the improvement of data quality
- All this is integrated together with the help of the Lightning components provided by Salesforce and the recruiting app would be deployed in a single developer org edition.

1.7 Organization of Report

Chapter 1- Introduction to cloud computing and types of clouds along with services provided. Knowledge of CRM and introduction to salesforce.

Chapter 2 - Existing solutions to CRM and its drawbacks. Proposed solutions for the same.

Chapter 3 - System development and the basis of developing a model for the recruiting application along with salesforce features used.

Chapter 4 - Testing provided by salesforce and implementation of testing in the project using developer org and demo cycles.

Chapter 5 - Conclusion and Future scope.

CHAPTER - 2

LITERATURE SURVEY

Underlying old system:

As internet users we are all familiar to fascinating, creative, innovative and sometimes stupid ways in which it has changed our ways of working and playing. As these trends definitely have changed how we deal with content, a related collection of internet led innovations and technology is affecting how we create and operate with business applications.

Todays internet technologies help to create, configure, and use business applications of any kind. Indeed, the technology of the internet has provided us with the opportunity to address different form of market troubles that had previously stayed out of reach because of difficulty or expense.

Just as the improvements that shifted publication technologies from paper to bits made this possible for us to acquire information right at our fingertips on anything about in the whole world, the advances in application/computer technology make it possible to invision a reliable, enterprise class framework for virtually all company needs in same way.

Adapting these new methods of building and running applications enable the world of cloud computing**,** where you can access applications, apps as utilities over the internet, rather than pieces of software running on your desktop or the server room. The model is already quite common for consumer applications such as email and photo sharing, and for some business applications, such as **customer relationship management (CRM).**

Problems in the underlying system:

The need to retain a high configuration environment by using the current system to run some massive that is used to build these software applications. This could require large amount of cost to build and for maintenance.

We need to purchase the software that is used to build the applications. We will need to upgrade the current version of application.

The biggest drawback to cloud setting of the current program is lack of portability. Even if we have highly engineered systems and upgraded applications, as we move from one location to another, we have to take the machine with us. This will place users at risk.

The biggest downside of the current program is lack of rehabilitation from the disasters. Which ensures that all the data stored on the system cannot be retrieved in case of catastrophe. But that may lead to loss of data.

To set up the system, the initial existing sytsem also needs lay out.

Devised new System:

Since there are several issues with the current network, this initiative incorporates a modern technique called cloud computing. The system for the fulfillment of this project to build and deploy an application platform to be the cloud computing environment, and to launch the application .

The cloud environment that we use here is called as Salesforce. In the cloud environment, a simple application is developed and deployed in the same environment using tools provided there. The application is started inside the cloud as a website.

CHAPTER 3

SYSTEM DEVELOPMENT

3.1 External interface requirements

Customer requirements: -

1. For the provider and the user to stay connected the customer requires a high speed internet connection.
2. For log in purposes the customer requires a username and password to use the application.

Hardware requirements: -

System Information	Configuration Details
Processor	32 bit Processor
RAM	512Mb/2GB/4GB/8GB
Router connection/Data Enabled	1 Mbps speed

Table 1. Hardware Requirements of project.

Software requirements: -

System Information	Configuration Details
Operating System	Browsing supported operating systems
Developing Environment	Force.com Environment
Declarative language	Visual Force

Table 2. Software Requirements of project.

3.2Functional Requirements: -

1	Understanding the capability of the cloud features of salesforce
2	Learning declarative programming
3	Developing a project help of salesforce and the force.com environment
4	Launching the application

5	Every user should get a account
6	User friendly deployment so that users can use it in a proper manner

Table 3. Functional Requirements.

3.3 Non-Functional Requirements: -

Performance Requirements:

Performance of the deployed application and the developing environment solely depends on the speed of the internet connection and not on the local system being used.

Safety Requirements:

Regarding safety there can be data loss due interrupted internet connection and this could lead to breaks and reloading of pages during development.

Security Requirements:

Provided by the cloud platform provider all the encryption for no data loss (Force.com)

Everything is in turn password protected.

3.4 Development Area

3.4.1 Custom apps

Salesforce provides a separate segment in which applications can be developed we can always start building a new application.

We are using a trailhead playground to develop the app which is like a copy of developer edition in which we can build custom apps and practice salesforce.

3.4.2 Installing Packages

Salesforce provides us with packages through which we can setup our org by using custom objects and pre-defined views inside the package

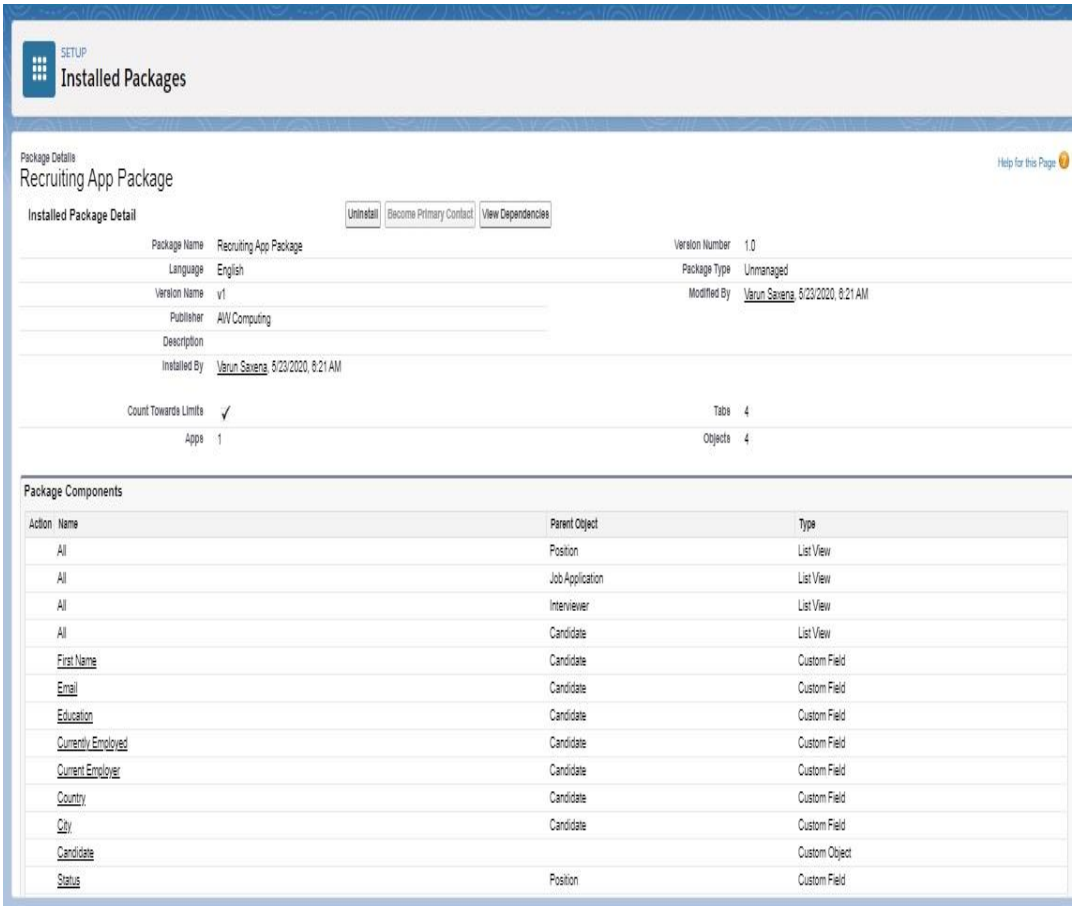

Fig 7. Installed Packages.

3.4.3 Objects in Salesforce

Those items in Salesforce are material storage tables. The key entity in the Salesfo rce data model describes businessrelated accounts / companies and entities, such as clients, partners, and rivals.

Pre-defined objects in salesforce are called as **standard objects**.

Objects that are created for the sole purpose of solution are called **custom objects**

Now that the package is in place we can start creating our own custom objects. The first thing is creating a custom object for reviews.

1. From Setup, click Object Manager.
2. Click Create, select Custom Object, and fill in the details.

Field	Value
Label	Review
Plural Label	Reviews
“Record Name”	“Review Number”
“Data Type”	“Auto-Number”
“Display Format”	“REV-{0000}”
Starting Number	1

Table 4. Custom object fields.

3. Then we should allow the field tracking to get activated.
4. In the Deployment Status section, ensure Deployed is selected.
5. In the Search Status section, select Allow Search.

6. In the Object Creation Options section, select Add Notes and Attachments related list to default page layout.

7. Leave everything else as is, and click Save.

In the same way, For the Recruiting app, we have 3 custom objects: -

1. Reviews object

2. Job Posting Site

3. A junction object for Posting Site

These objects are accessed in salesforce via the provided tabs and menu's in case of the salesforce1 mobile application.

3.4.4 Tabs in salesforce

Tabs in salesforce are just like tabs in any other software these tabs are used to access some features from the same page on the quick action basis. These tabs can directly take you to a new page. There are two types of types in salesforce predefined and custom. Use of custom tabs is necessary when creating a custom object for ease of access purposes and also for the HR recruiter to look into the matter in a defined way.

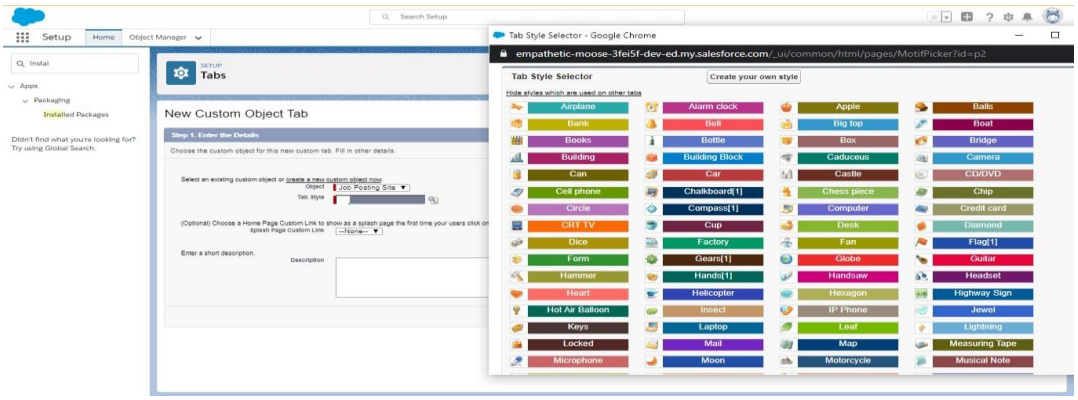

Fig 8. Creating custom tabs for job posting site object.

3.4.5 Fields in salesforce

Salesforce contains fields which are considered as variables in the salesforce environment in other words the user with the help of these fields can develop their custom object or can use the objects that are predefined using these fields. Some of the fields that are used in salesforce are text area, formula, currency, picklist and many more these fields let user to next level of development.

In a similar manner we are creating custom fields on our custom job posting object which are as follows: -

1. Job Posting Site URL
2. Status
3. Technical Site
4. Description

For review object we have custom picklist and custom checkbox's so that our HR team recruiter can select and on the basis of ratings: -

1. Core competencies
2. Leadership Skills
3. Experience
4. Reasons recommended
5. Recommend for hire

These have a relationship with our interviewer and job application objects already there in the package making the life of HR easy.

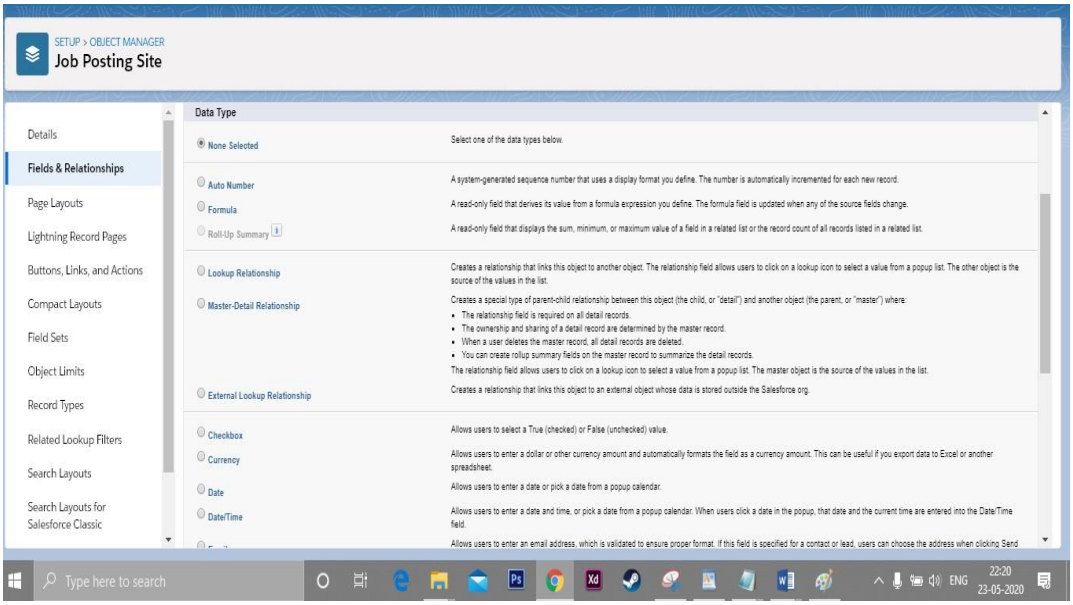

Fig 9. Creating custom picklist fields.

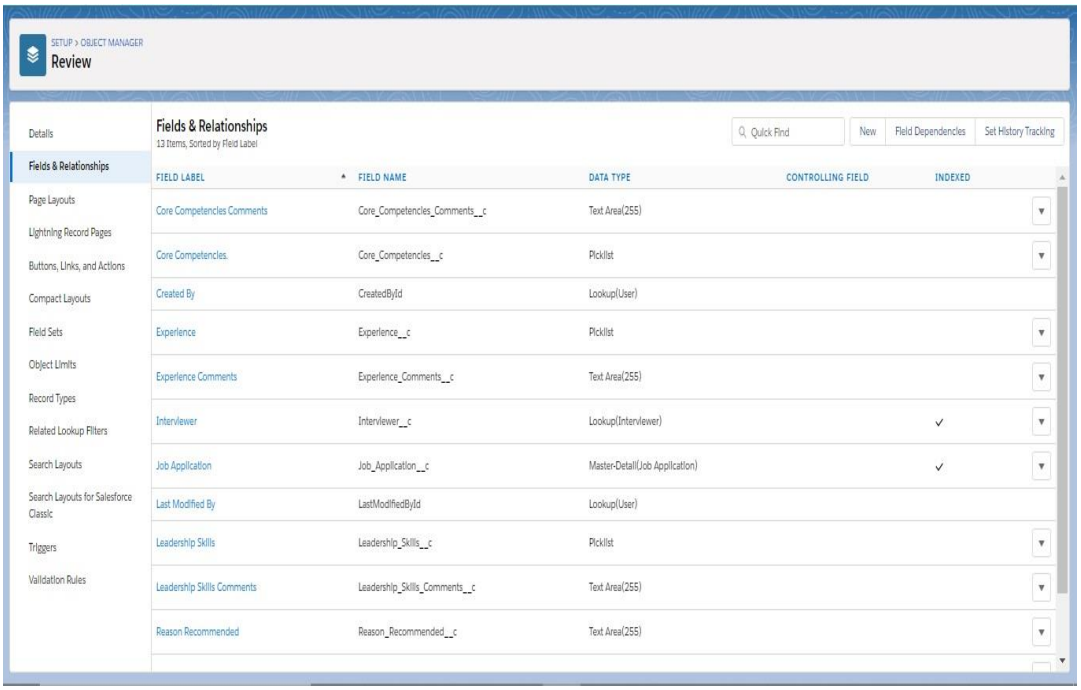

Fig 10. List of all fields and relationships created.

3.4.6 Relationships in salesforce

The Force.com platform supports two types of relation between objects between p arent and child. They are relationships of seeups and relationships of masterdetail. These relationships work in databases like foreign keys and connect two different objects together, creating a relationship.

The lookup relationship creates a normal relationship with other objects in which now by creating the relationship we can now direct from one object to the other and can create many one-to-one and many-to-many relationships.

Lookup relationships are necessary because in certain situations, but not always, a relation between two objects is needed. A lookup relationship is used in situations such as relaying more than
one parent records to the child record and linking to widely shared data, such as ref erence data.

The master-detail relationship is much more powerful relationship in salesforce the object on which the master-detail is created is the child object and object referenced is the parent object.

Now using these relationships, we will create a junction object between job position and posting sites called job posting.

One position for the organization can be posted several times, and one employment does have like more than one job posting on the other hand one job posting is always looked up by a single position on a single employment website.

Essentially, the object Job Posting has manytoone relationships with the objects of both the Place and the Work Posting Page. For such manytoone relationships, you build a multipletomany relationship between the subjects of the Place and the Wor k Posting Page.

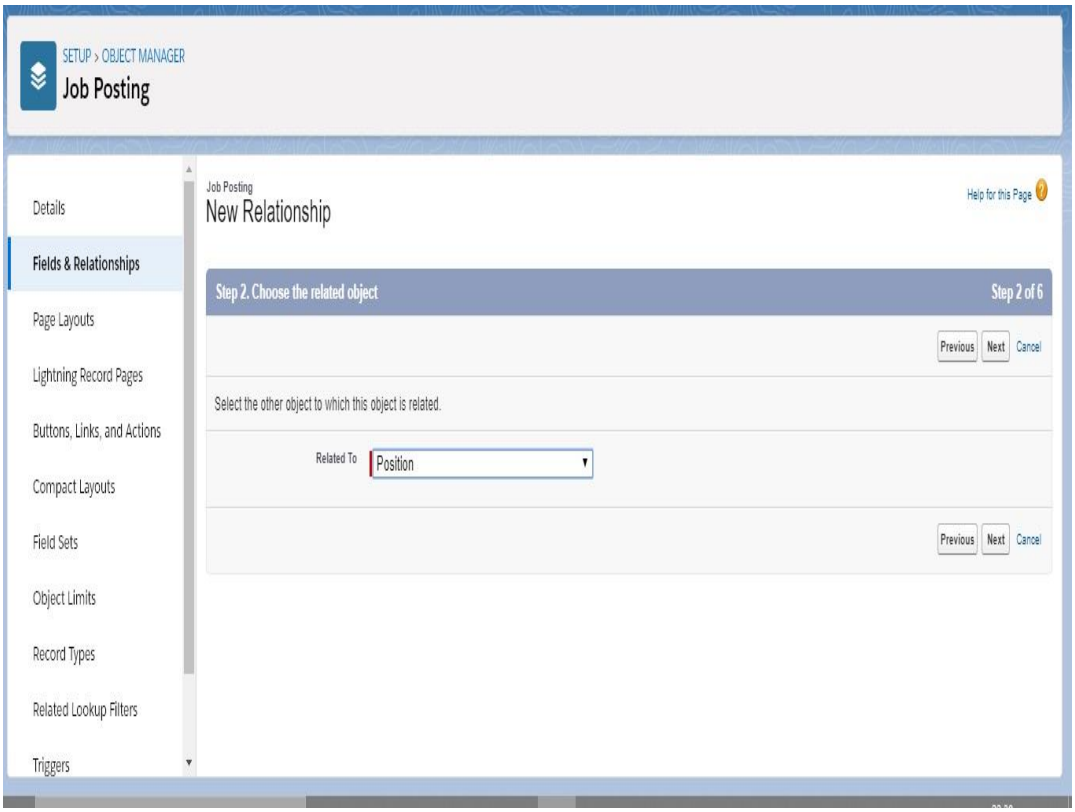

Fig 11. Creating master-detail relationship job posting object.

3.4.7 Page Layouts in salesforce

Page layouts are used to do the formatting of the visibility of the fields and type of data displayed on any objects detail page. These page layouts are there for other features of salesforce and can be customized and edited according to the user's convenience. This can be used for read only access as well as edit too it is a feature of data hiding.

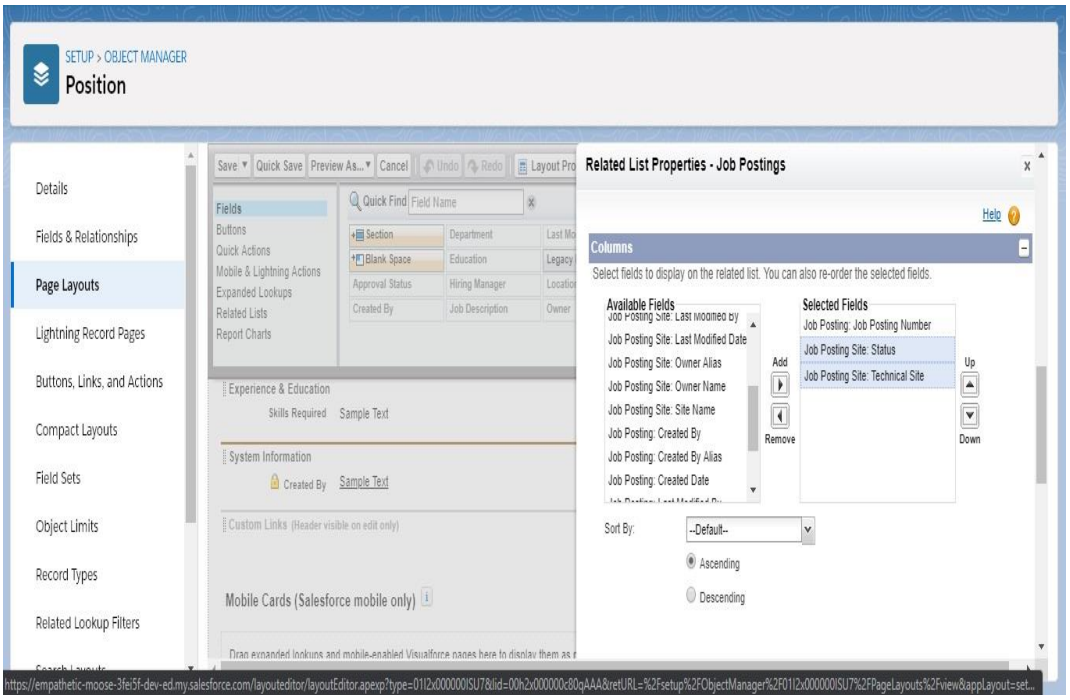

Fig 12. Custom Page Layout.

3.4.8 Schema builder in salesforce

Salesforce Database Creator offers a complex framework to display new template objects, custom fields and the database relationships. It removes the need to click t o check out the specifics of a masterdetail relationship from page to page or to add a whole new custom field to an item in your schema.

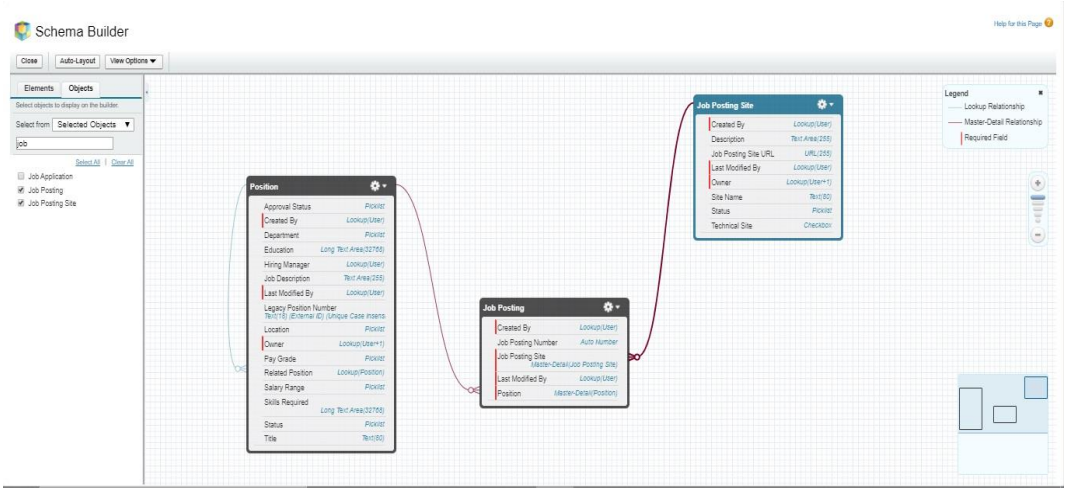

Fig 13. Schema Builder.

In our schema builder we can see all the objects connected together via our custom junction object.

We can also see that the position object has a self-relationship with itself and on the other hand our junction object Job posting has two master detail relationships with both the other objects.

3.4.9 Security and sharing rules in salesforce

Provision of salesforce towards security can be seen on many levels some of them are listed below: -

1. Object Level Access: for object accessibility.

2. Field Level Access: for field accessibility.

3. Record Level Access: for record accessibility.

4.Profiles:

Every user in salesforce has a profile now using these profiles he can access or cannot access different things that are present in salesforce. These profiles are created by the administrator of the domain the user is using. Every profile has different set of security and sharing rules.

5. Permission Sets:

A permission sets are like profiles but they give acces to different stuff than the profile. It is one step higher in security through this the admin can decide to give access on fields and other related objects.

6. Field Level Permissions: If a user can view/edit fields for a given object or not.

7. Organization-Wide Default Settings: These are the default permissions and user sets defined by the organization at default level.

8. Role Hierarchies: Like in any organization these are used to set up a hierarchy in which now people have different permission sets.

9. Sharing rules: Controlling record level access when files are shared between the users or profiles of an organization have exceptions for org-wide-defaults.

10. Manual sharing:

This take controls of all the usage limitations
Someone should exchange the documents with individual people. App rights and t he profile limit what the app can see. The changes made in the Salesforce desktop site are reflected in the app and mobile users in order to obtain the data of their org anization without special configuration.

I have created a custom profile for the **HR recruiter** so that it is able access records easily and data restrictions to other roles and profiles would also be possible

Object	Read	Create	Edit	Delete
Candidate	✓	✓	✓	
Interviewers	✓	✓	✓	✓
Job Applications	✓	✓	✓	✓
Job Postings	✓	✓	✓	✓
Job Posting Sites	✓	✓	✓	✓
Positions	✓	✓	✓	
Reviews	✓	✓	✓	✓

Table 5. These are the object level access given to the HR recruiter profile.

Assigned a permission set to the hiring manager so that the hiring manager can have add on permissions to specific users, on top of their already created profile permissions, without having to upgrade existing profiles, create new profiles, or grant an administrator profile where it's not necessary.

In other words, Temporary permission set for those Hiring Managers that need to interview candidates for positions in their department.

Now field level security is also implemented for the hiring manager for the salary range field because it is important for the hiring manager to look at the salary range

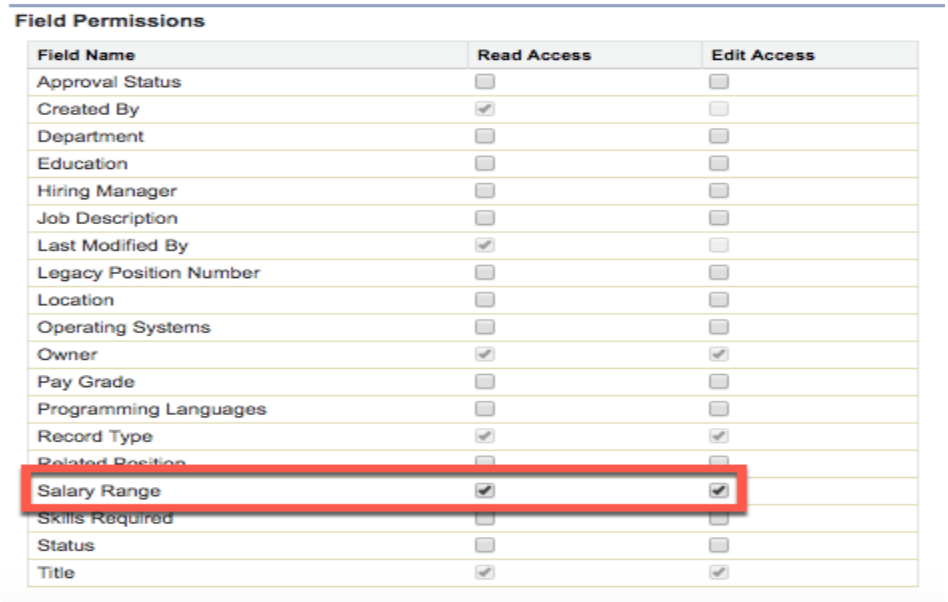

Fig 14. These are the object level access given to the HR recruiter profile.

3.4.10 Cross object formulas in salesforce

Cross-object formulas incorporate fields from related objects for calculations and display on detail pages, list views, and reports. These formulas get data from related parent objects to display on the child object. Using them is a great way to avoid duplicate work, duplicate data, and data inconsistency.

In my project I have used a cross object formula between the candidate object and the position object for the review object which means I am trying to store the name of candidate from candidate_cc object and position of the candidate from Position_cc object together to display on the Review_cc object.

Step 1: - first we have to store the first name and last name together because both of these are separate fields

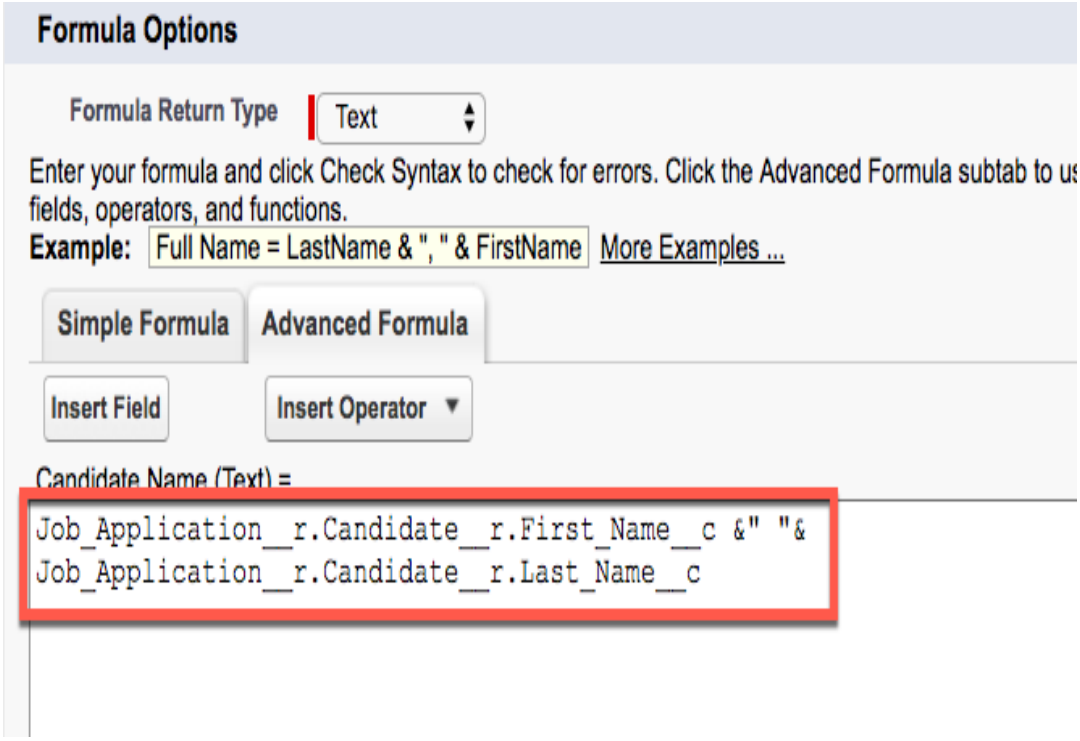

Fig 15. Adding Formula field on cross object.

Step 2: - now we have to get the position name from position object store in job application field of review object.

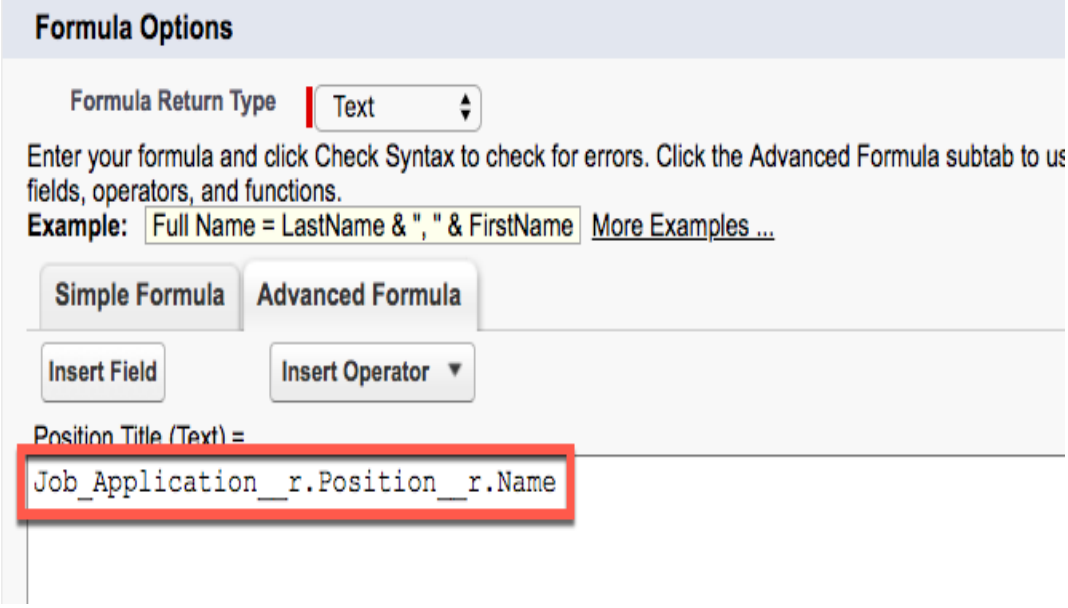

Fig 2. These are the object level access given to the HR recruiter profile.

3.4.12 Validation Rules in salesforce

Validation guidelines ensure that the data that a user inserts into a database complie s with the requirements that you define before the database can be saved. A validati -on eighter contains a rule or
formula which evaluates the data in one or more fields and returns a "Real" or "Fals e" value. It may also contain an error message to be shown to the user when the rule returns a "Real" value due to an invalid value.

In this project I have created a validation rule which only validates the position entered when it has a hiring manager associated with it.

For these types of formulas, we use ISBLANK function steps are as shown below: -

1. **Object Manager** and select **Position**.
2. Click **Validation Rules**, then click **New**.
3. For the Rule Name, enter Every_Position_Must_Have_a_Hiring_Mgr

4. Select **Active**.
5. Enter this Description: Every position record requires have a hiring manager.
6. Enter the Error Condition Formula: ISBLANK (Hiring_Manager__c) && $Profile.Name <> "System Administrator"
7. Ensure your screen looks like this

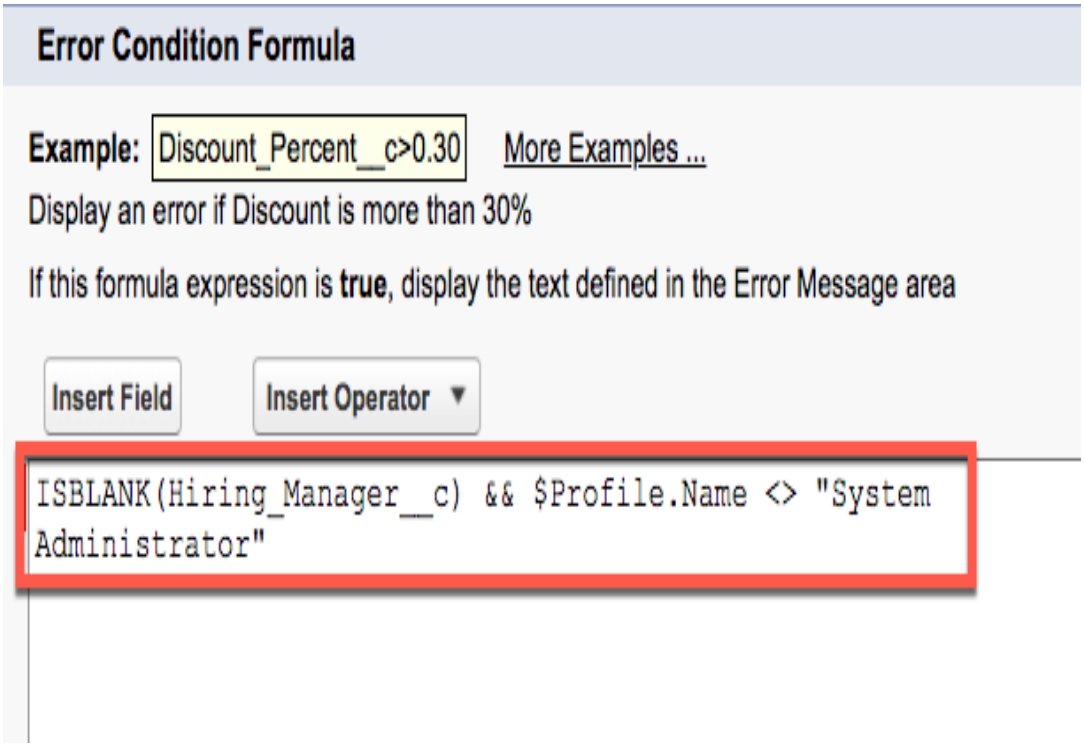

Fig 16. Adding Validation Rule.

3.5 Using Automation tools

Using of automation tools is a very important solution for business processes because today everybody wants a personalized experience.

Automation has many features but all together in simple words it does reduce the mechanical work by making the process automatic.

Automation solutions and tools provided by salesforce are based on: -

- Integration of various systems.
- Configuration of process logic.
- Designing and building an end-user experience.
- Making the experience available from anywhere: desktop or mobile devices, internal apps, or external portals.

Tools:

Automation process are provided by salesforce with the use of lightning flow which is intern an integrated process.

Lightning flow consists of two types of declarative point and click tools called the process builder to build processes and flow builder to build flows.

To sum up the differences:

- ***Lightning Flow*** is the name of the product.
- ***Process Builder*** and ***Flow Builder*** are the names of the tools.
- Use Process Builder to make processes; use Flow Builder to make flows.

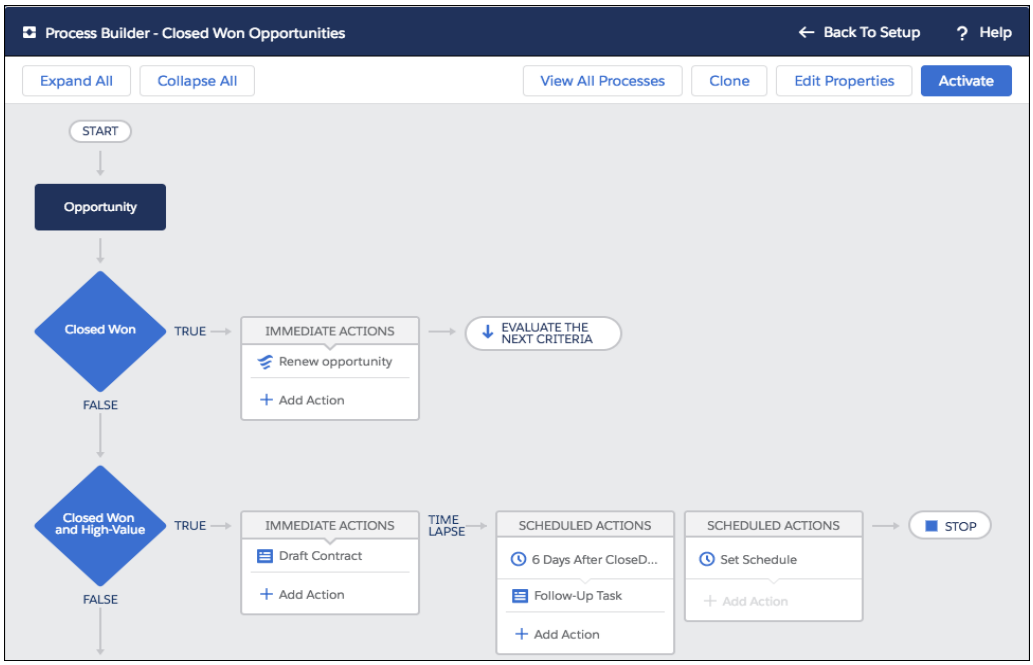

Fig 17. Process Builder.

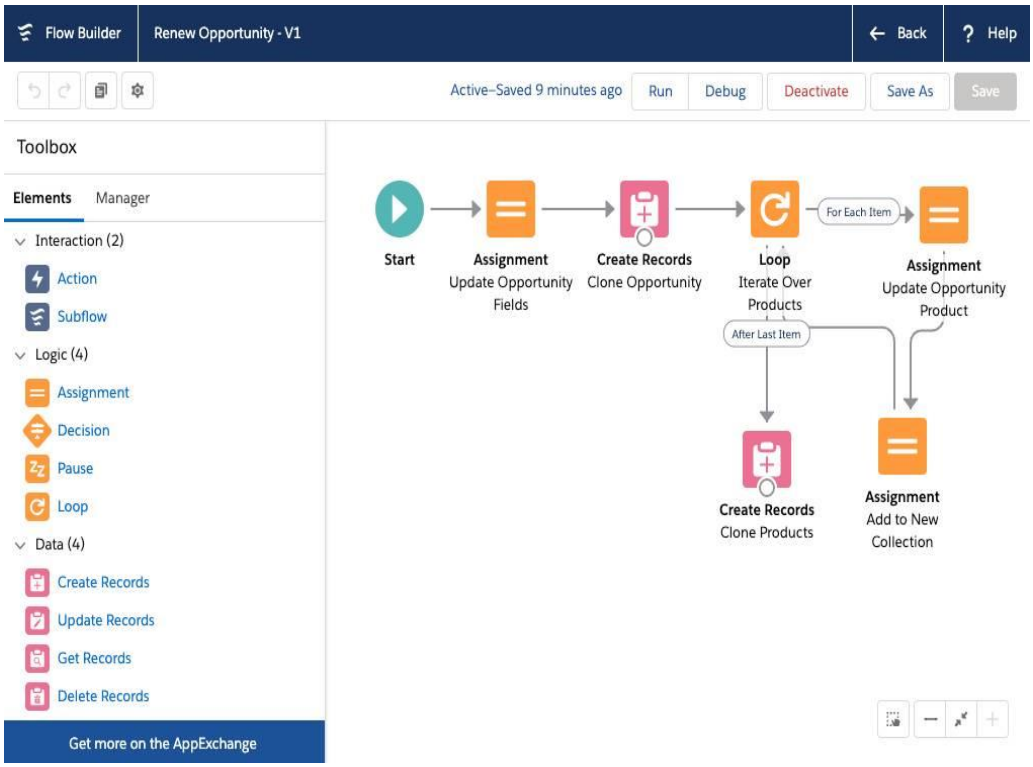

Fig 18. Flow builder.

3.5.1 Approval process in salesforce

Approval processes are used to insert records only after a given approval has been conducted by the approver it's an automated process which is in turn a subset of the process builder.

Example of an approval process.

The following is a way of using approval.

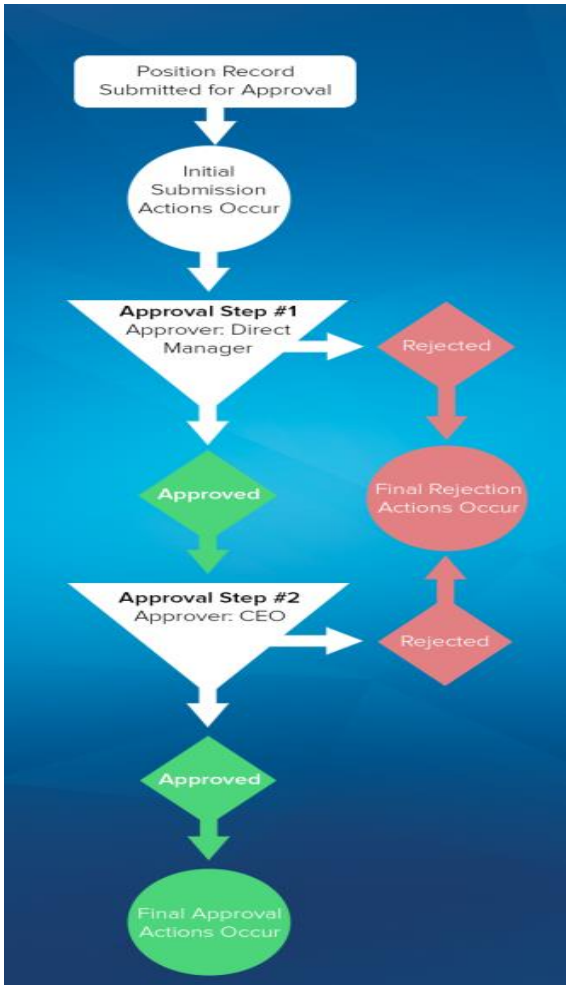

Fig 19. Approval Process.

1. At the initiation the initial submission action occurs and then the record is locked ensuring no change to the record except the admin and the approver.

2. There are possible submission actions that can be used like alert messages and quick action tabs.
3. Steps used for approval process are used to assign approval to different people in the organization. In this example, manager is assigned to the submitter's approval.
4. On rejection of the approval the rejection process begins and the approval is rejected by the manager.
5. Now if the manager approves the request at the first stage then the record moves to the next stage of approval and CEO approval is required.
6. The final approval is given by the CEO if the CEO approves the record is then finally unlocked and now is part of the organization.
7. Final approval is reflected on the records page.

In this project I am using a similar kind of approval process in which I am creating a system to approve positions before posting them.

There are three recruiters for the process or the approvers two working with the manager and one to sign-off at the senior level.

1. Create a new folder and two e-mail templates one for Approved records and one for rejected records.

Field	Value
“Folder”	**Position Request Responses**
“Available for”	**Select**
“Email Template”	`Position Approved`
“Subject”	`Your position request was approved`

“Body of Email”	`Dear {!Position__c.OwnerFirstName},`
	
	`Good news! Your recent position request has been approved.`
	
	`Please log in to your org for details.`

Table 6. Email template for approval.

Field	Value
“Folder”	**Position Request Responses**
“Available for”	**Select**
“Email Template”	`Position Rejected`
“Subject”	`Your position request was rejected`

“Body of Email”	`Dear {!Position__c.OwnerFirstName},`
	
	`Unfortunately, your recent position request has been rejected.`
	
	`Please log in to your org for details.`

Table 6. Email template for rejection.

2. Create custom approvers to approve the process.

3. Create the multistep approval process. In the process development screen, we have to select all the custom approvers that we have created and select at which level they can approve the record.

   We also have to add fields to be displayed on the approval page

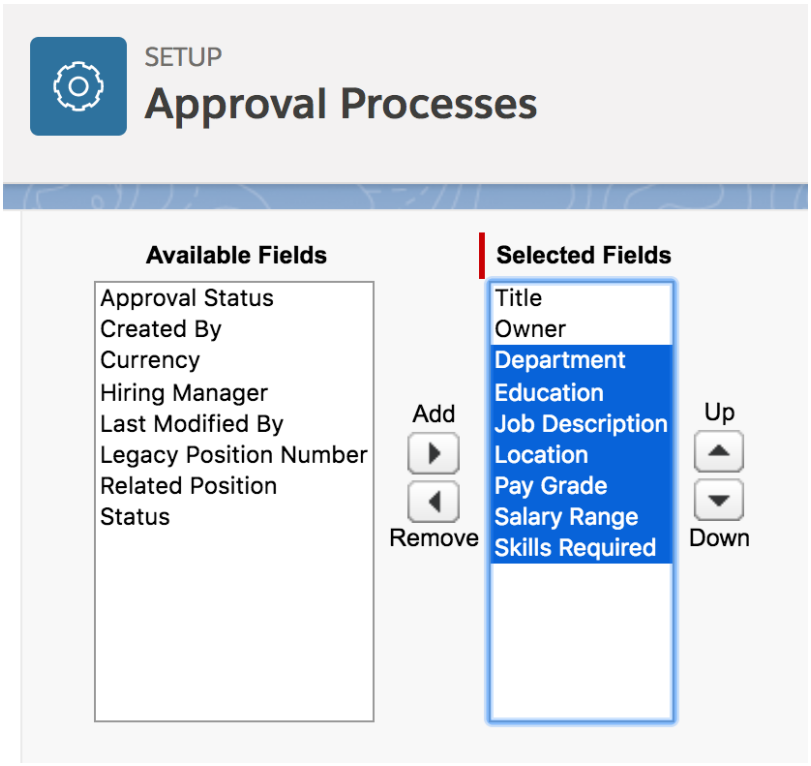

Fig 20. Adding Fields to approval

4. We have to first send the approval to the initiation step and then we set up all the approval steps one by one.

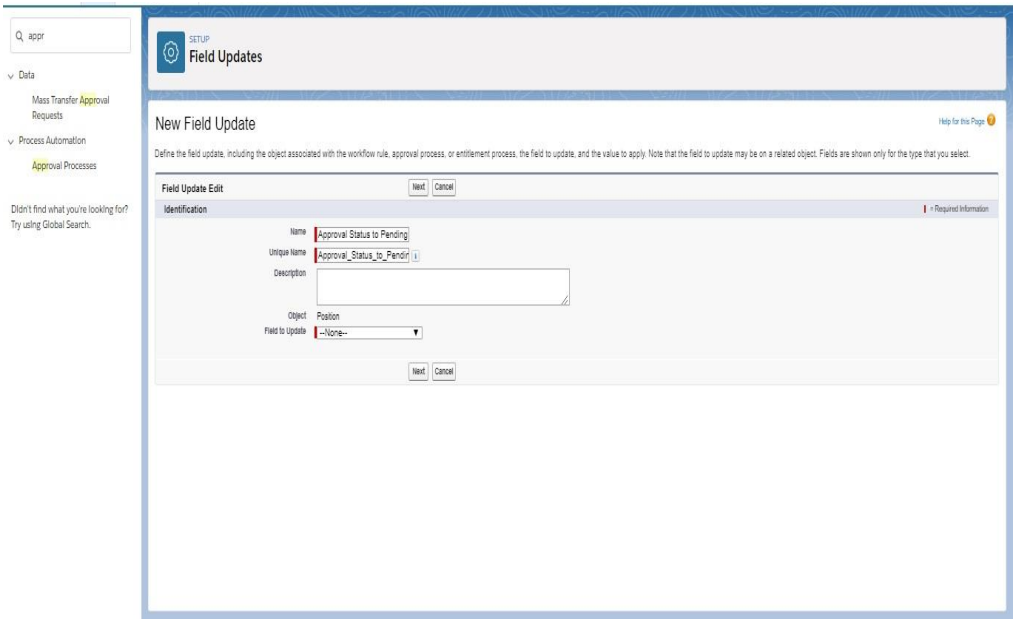

Fig 21. Adding Initiation to approval

5. Final approval page layout

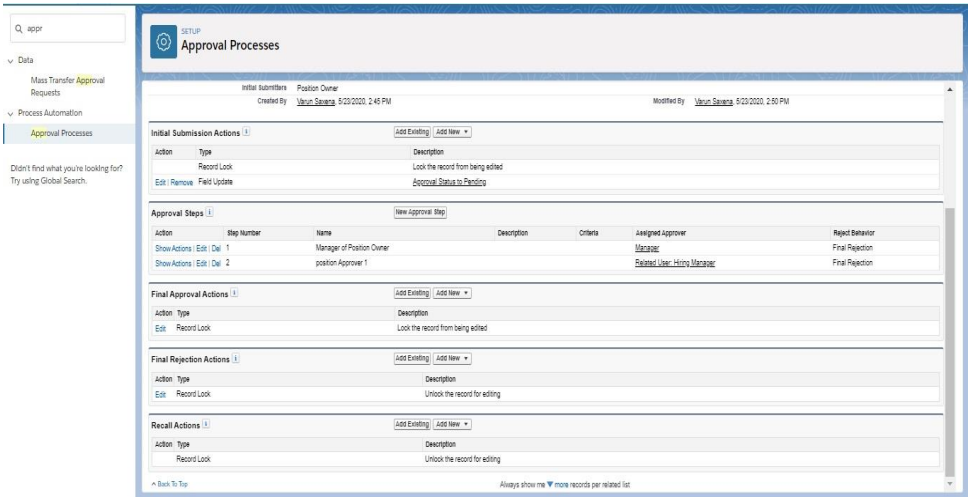

Fig 22. Approval page layout.

6. Each approval step has its own rejection connected to it and email is sent when the process exits at any level if rejection is the result.

To complete the whole automated process, we use the process builder to create a process to submit the positions for approval this process in turn uses the approval process we just created.

This whole process is automated and now the recruiting app has an automation function.

3.5.2 Flow diagram of the approval

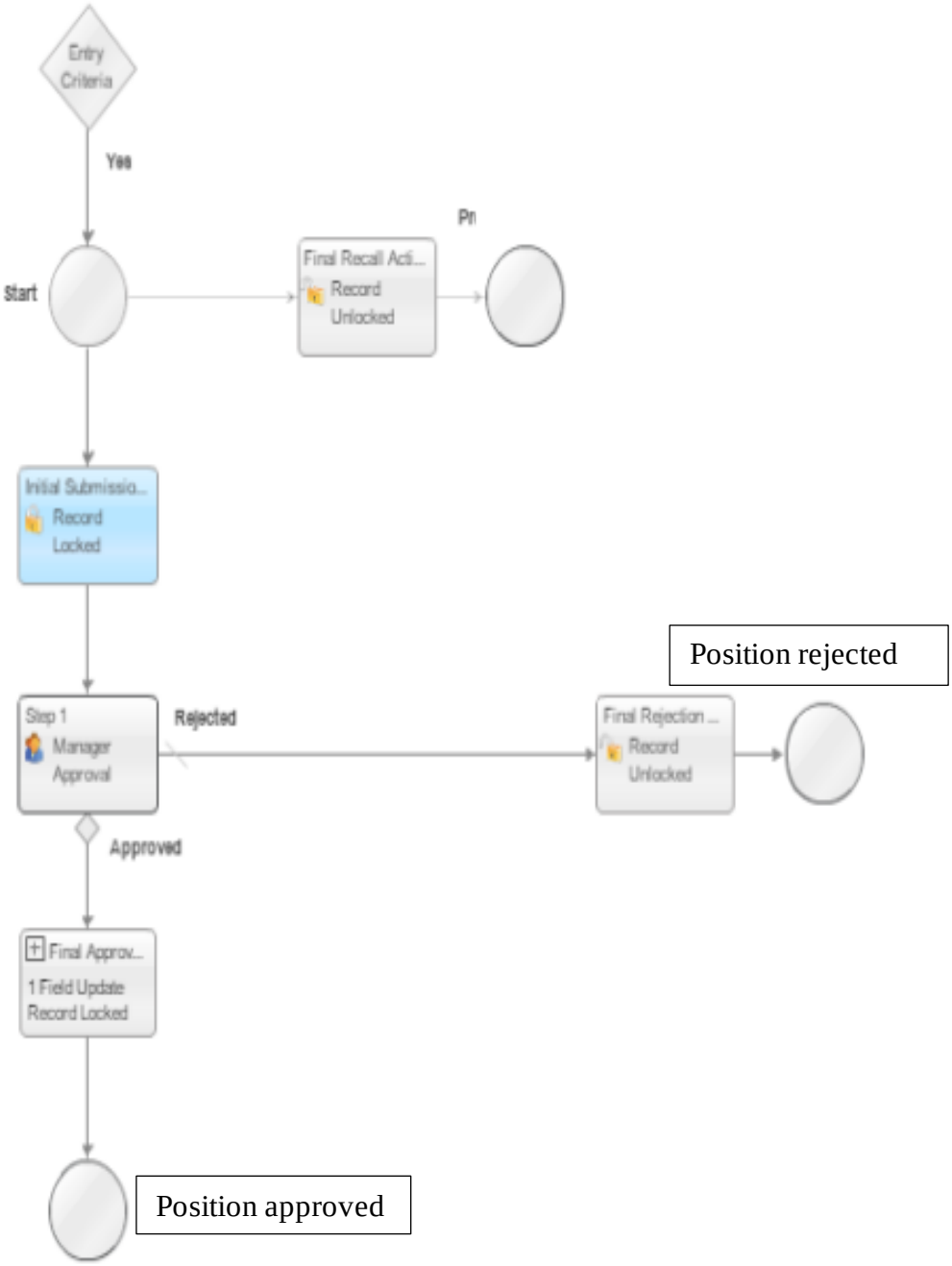

Fig 23. Flow diagram of the approval.

CHAPTER 4

ANALYSIS OF PERFORMANCE

4.1 Types of testing used by salesforce

Unit testing:

Unit tests are testing processes in which tests are run in large condos using help of test classes. Each test class contains different types of cases or input values so that the outcome does provide the required solution.

Unit testing is black box testing and it's a software development process in salesforce test classes are developed in apex on the developer console and these consoles are run through the salesforce platform only.

Unit testing is usually an automated process but sometimes it is done in self-mode i.e it is used in EXTREME PROGRAMMING which Is a programmatic declaration of continuous testing and revision..

Conditions of testing:

Normal Conditions

–Variety of states are tested.

Edge Cases

–Input conditions are bad

–Conditions on boundary

Some Regressions

Force.com-specifics

–Apex reachs, Triggers etc.

Properties of Good Unit Tests

- Thorough

- Looping
- Automated
- Alone

UAT Testing:

User acceptance testing is one of the final steps before the project or the developed application is deployed.

The end users who use the application are the best testers as at the beginning till the end almost everything depends on user experience.

For the above type of user experience, we need to conduct acceptance testing so that the application is deployed in a confident way as the user is with us and the application will serve the purpose.

Bugs are also removed with the help of usability testing there are some bugs which the developer doesn't recognize at the first time.

4.2 How testing is done

In our simple project we have not used apex developing tool or visual force pages so we can't use the provided testing tools on the other hand salesforce provides us with the demo of the recruiting app created.

We can simply launch our app from our salesforce playground or the developer org and can test the implemented features.

For further deployment of the app we have to buy an enterprise edition of salesforce where we get different sandbox's that can be used for proper development and testing off the application along with implementation of apex classes and visualforce pages in a proper manner.

4.3 Working of the automated approval process using the recruiting application

The demo of the salesforce application is presented using salesforce classic environment

1. Launching the application landing onto the home page we can see our custom object tabs displayed on the top.

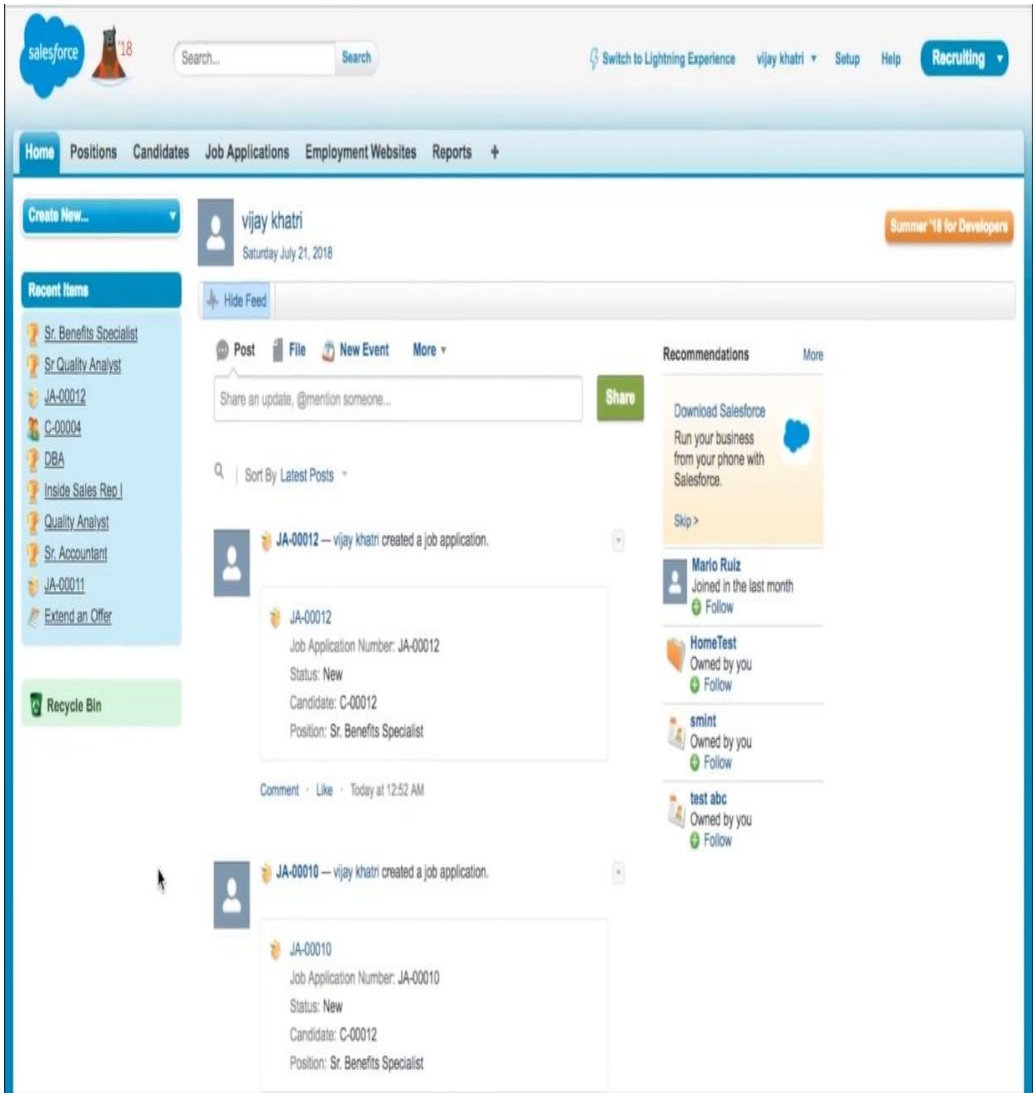

Fig 24. Home Page.

2. We go to the positions tab to create a new position

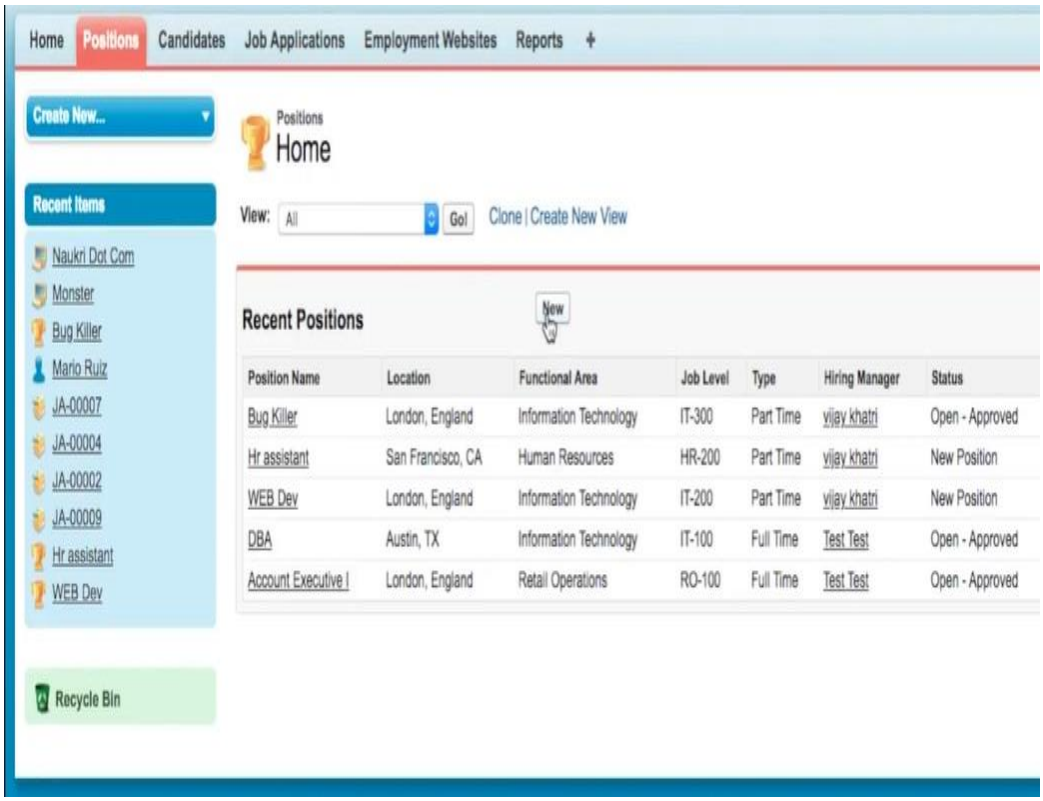

Fig 25. New Position Created.

3. Fill in the description for the new position and save the new position record.

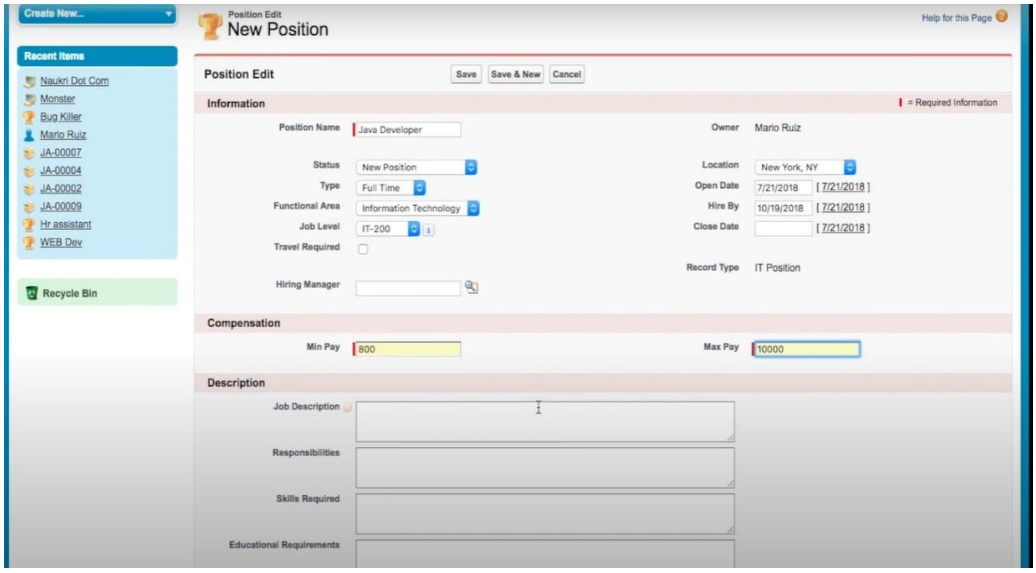

Fig 26. New position details page.

4. Now on the position description page we submit the position for approval which initiates our approval process using the inbuilt process builder.

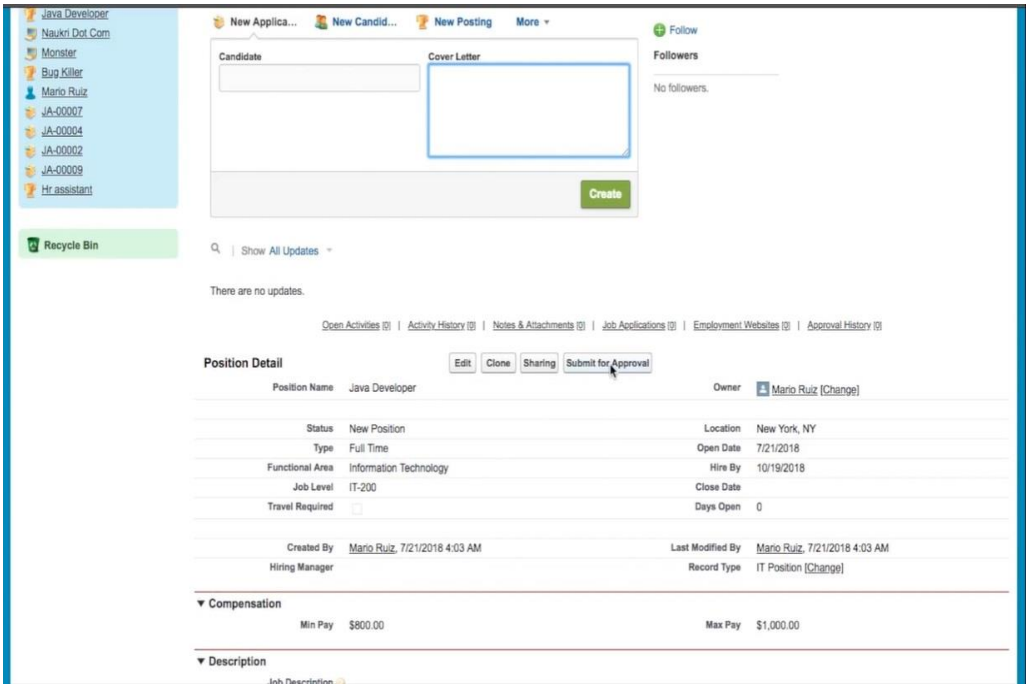

Fig 27. Submit for approval

5. Now on the same description page the position record is locked and we can see the approval status to be pending.

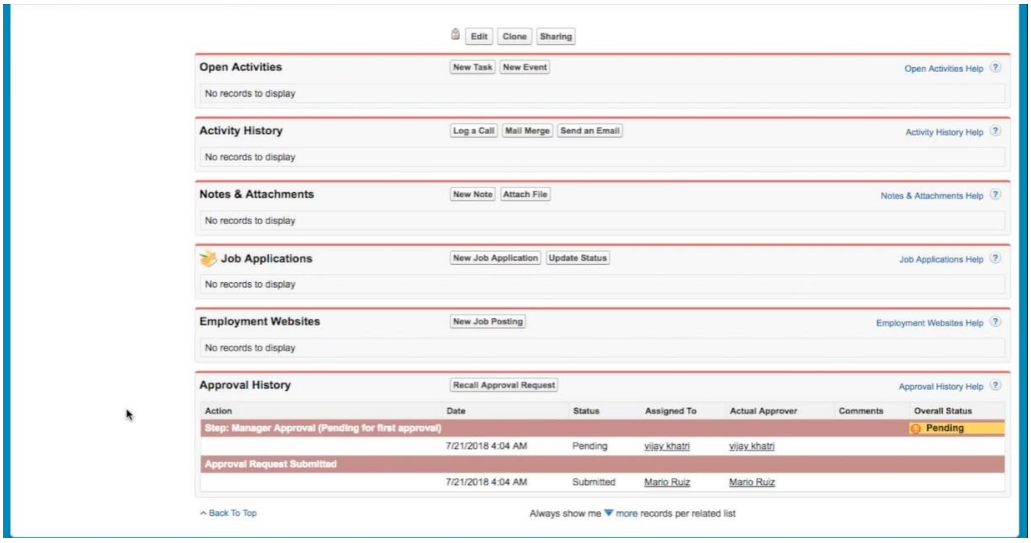

Fig 28. Status of approval.

6. Now we go back to the approvers or the admin page and we can see that the approval related list has an item for approval.

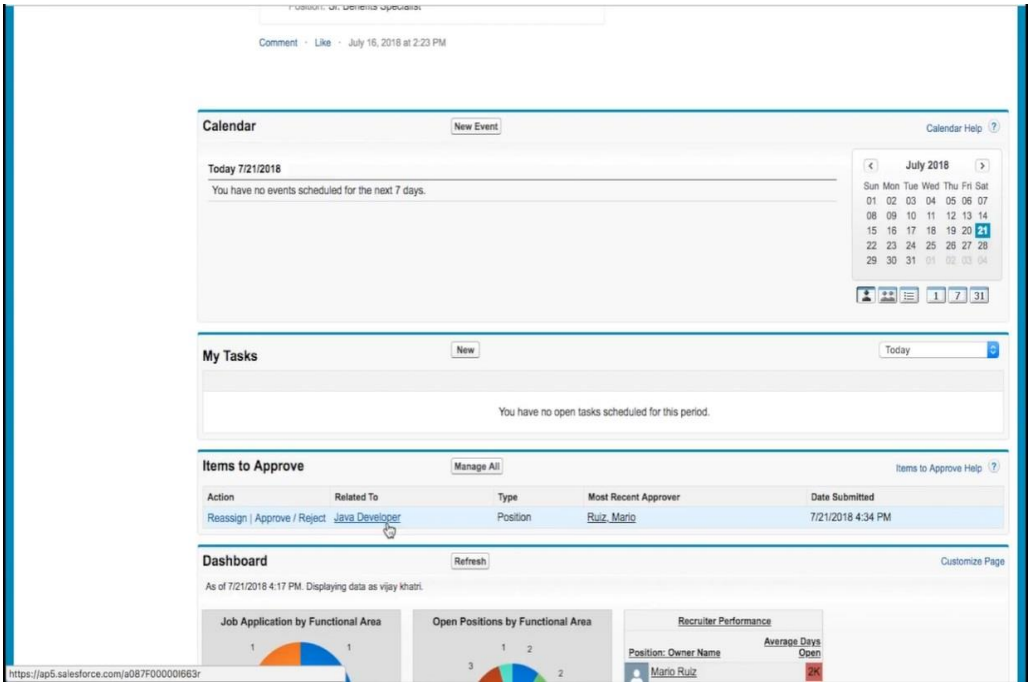

Fig 29. Approval task added for recruiter

7. Now for the new position that we created looking at the details we can approve the position.

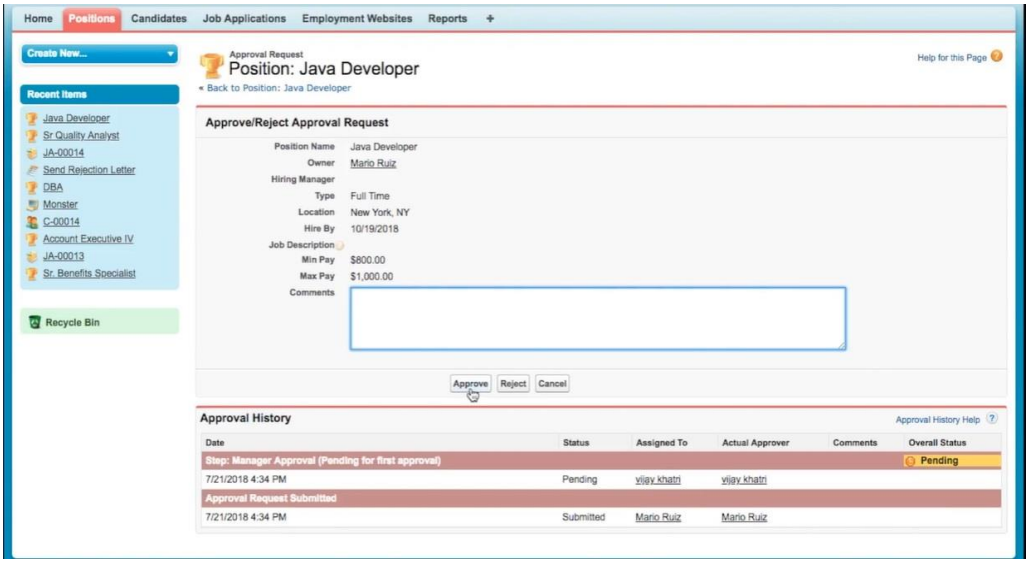

Fig 30. Approval submitted by recruiter

8. Now we can see that the position has been approved.

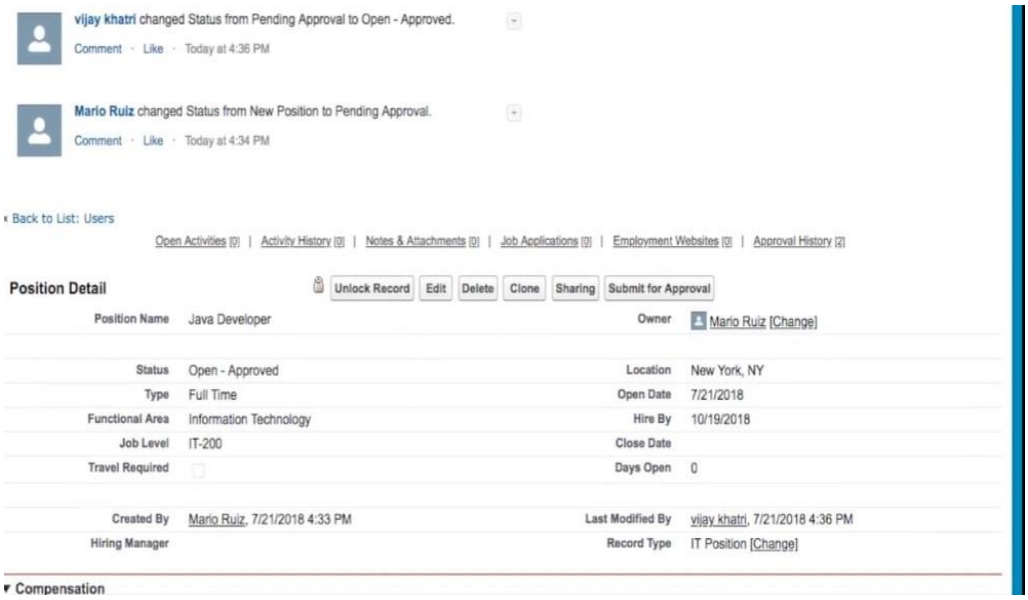

Fig 31. Position Approved.

9. We also receive email about the new approved position.

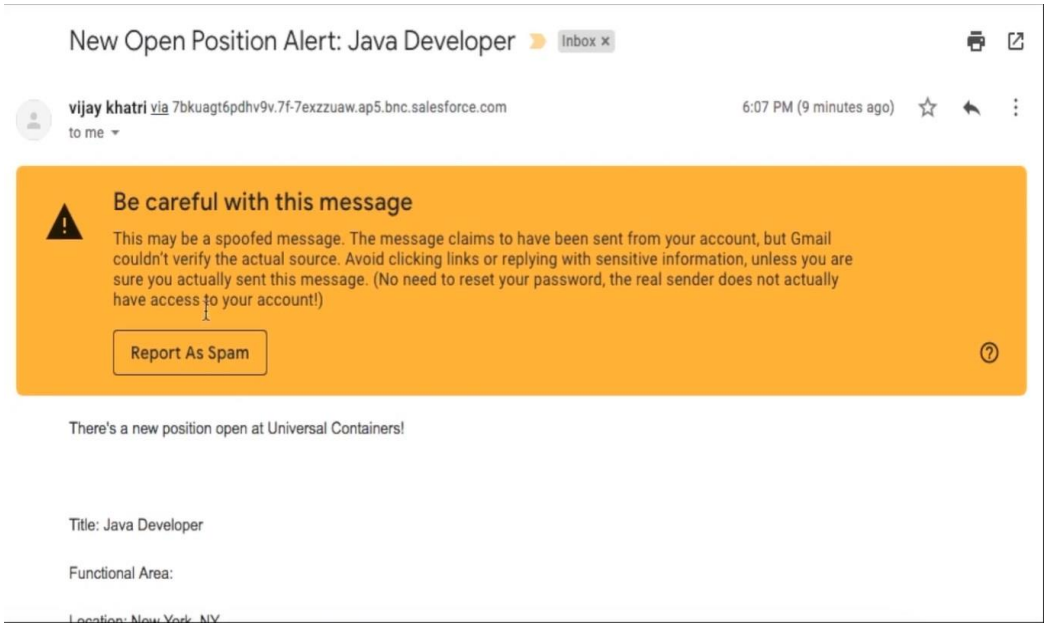

Fig 32. Email received.

CHAPTER 5

5.1 CONCLUSION

Via the use of cloud computing a platform is serviced Which is the Force.com which in turn provided a base through which an organizations business can radically grow and the outcomes of such a scalable division of the same is needed in each and every organization.

Salesforce is one of the biggest CRM solution providers which uses the Force platform to provide such CRM solutions in an interactive way both easy for the developer and the customer and even the administrators.

Not only large MNC's but small-scale organizations can also benefit from salesforce and can grow their business to huge extents.

The recruiting app was a small implementation of salesforce features but an important implementation as every organization has its HR team and using this small implementation can give them a quick start.

5.2 FUTURE SCOPE

Like all the major Project this project also has a huge scope for improvement but accomplishing those would have been difficult and tedious in the given time interval. Therefore, in the future the created application can:

1. Apex developing tools.
2. Using self-developed classes and triggers
3. Using Flows and Screens
4. Using visual force pages to develop proper html websites and custom html pages.
5. Data analytics could also be implemented for smoother and prompt reports

REFERENCES

Provided trailhead modules in the training sessions

[1] http://www.desynit.com/good-systems-blog/salesforce/why-salesforce/

[2] http://www.dummies.com/business/customers/why-use-salesforce/

[3] http://www.investopedia.com/terms/i/inventory-management.asp?lgl=no-infinite

[4] Extremely effective CRM Solution using Salesforce

[5] https://en.wikipedia.org/wiki/Salesforce.com#Technologies

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