

# Lab Solution Slides on Cloud Data Objects, Validations, and Interface

## Week 7

School of Software

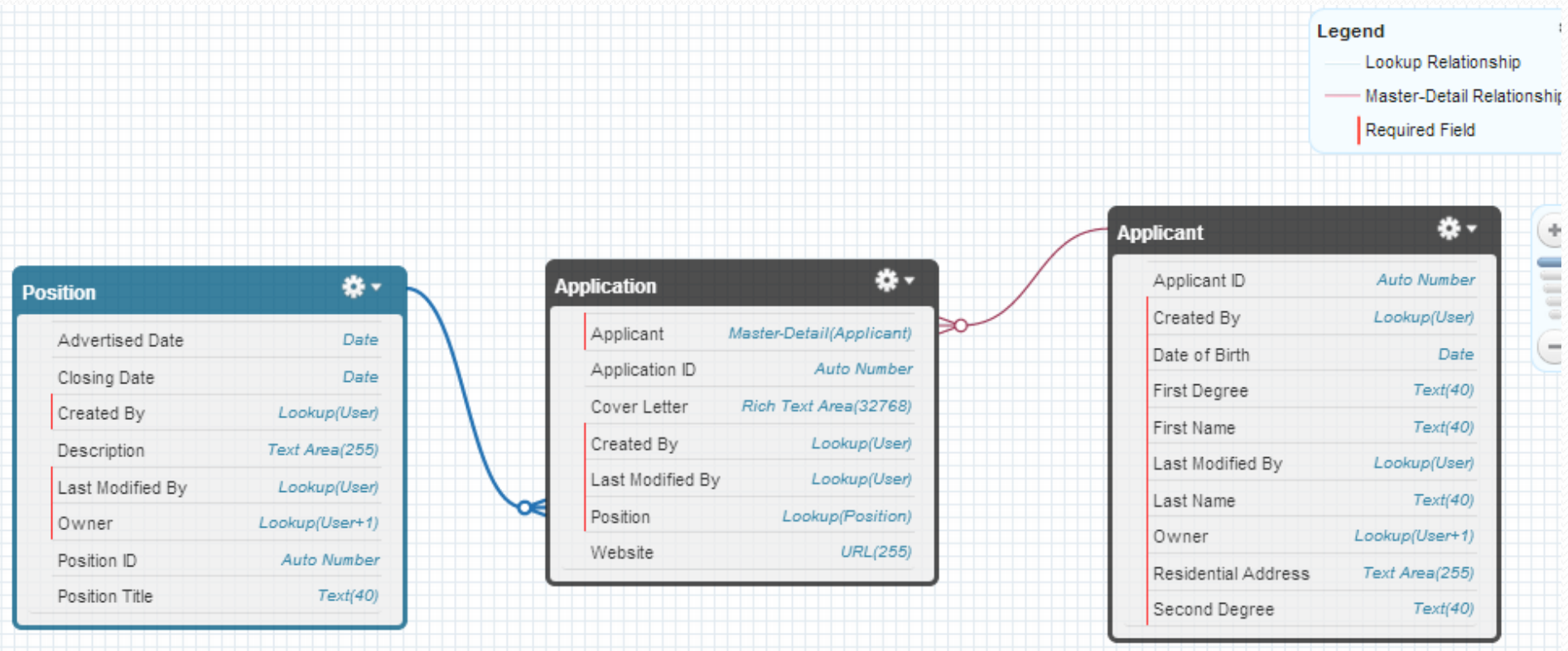
Faculty of Engineering and Information Technology

University of Technology Sydney



**SCHOOL OF SOFTWARE**

# Data model for the case study

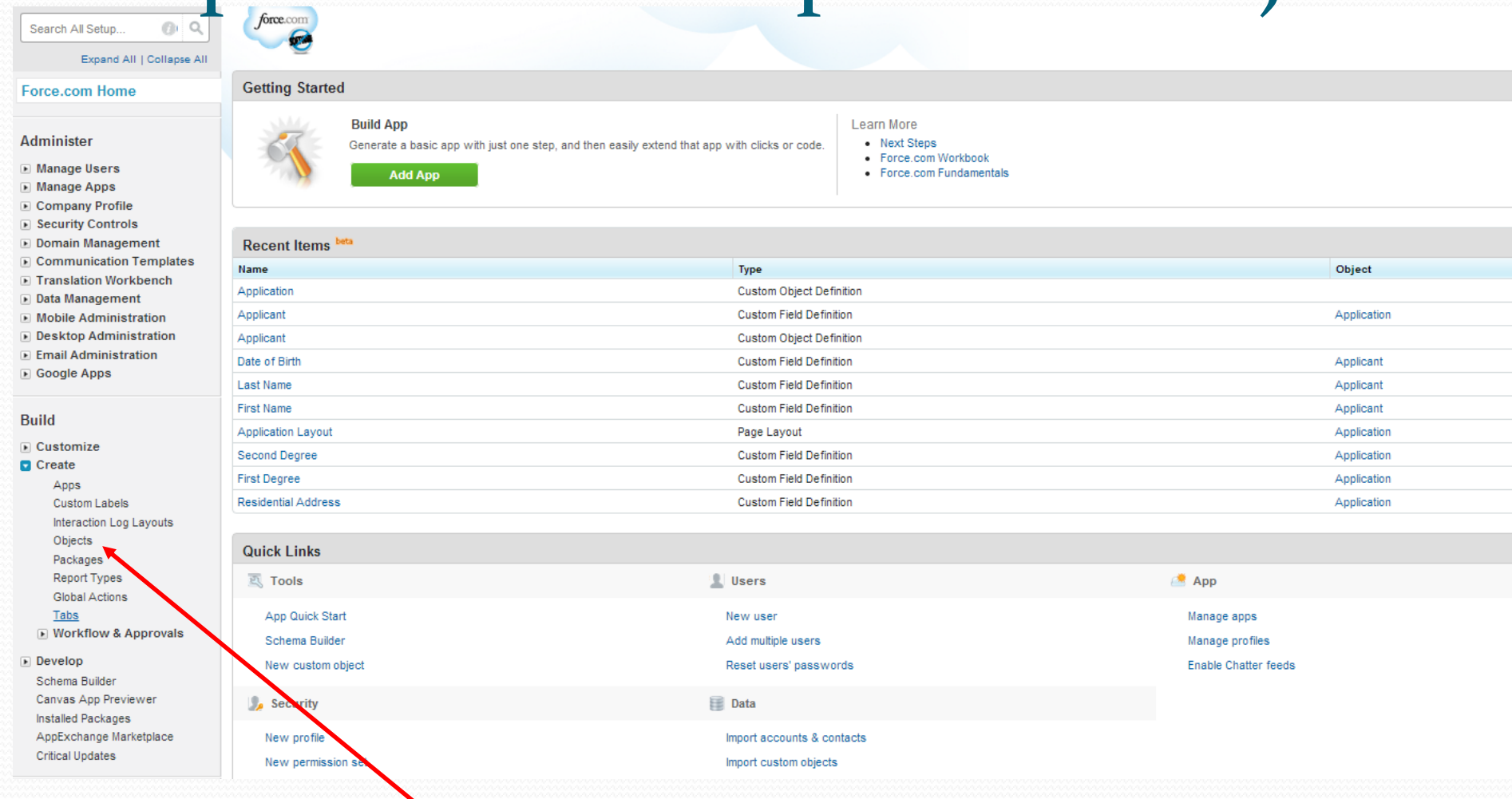


**Figure:** Data model for the mini- HRM application for Company A

# Steps involved in the solution

- **Step 1:** Create a position object. This object should have the attributes *Position ID*, *Position Title*, *Description*, *Advertised Date*, and *Closing Date*
  - (Step 1.1) Define a validation Rule on the *Closing Date* Field
- **Step 2:** Create an applicant object. This object should have the attributes *First Name*, *Last Name*, *Residential Address*, *Data of Birth*, *First Degree*, and *Second Degree*
  - (Step 2.1) Define customized page layout for the applicant object
- **Step 3:** Create an application object to store the relevant information of each submitted application. This object would be a junction object, and would have:
  - Master-detail relationship with the “Applicant” object; (and)
  - Look-up relationship with the “Position” object

# Step 1: Create the position object



The screenshot displays the Force.com user interface. On the left, the 'Build' section is expanded, and 'Objects' is selected, indicated by a red arrow. The main content area shows the 'Getting Started' section with a 'Build App' button and a 'Recent Items' table. Below the table is a 'Quick Links' section with categories like Tools, Users, App, Security, and Data.

**Getting Started**

**Build App**  
Generate a basic app with just one step, and then easily extend that app with clicks or code.

[Add App](#)

**Learn More**

- [Next Steps](#)
- [Force.com Workbook](#)
- [Force.com Fundamentals](#)

**Recent Items beta**

Name	Type	Object
<a href="#">Application</a>	Custom Object Definition	
<a href="#">Applicant</a>	Custom Field Definition	<a href="#">Application</a>
<a href="#">Applicant</a>	Custom Object Definition	
<a href="#">Date of Birth</a>	Custom Field Definition	<a href="#">Applicant</a>
<a href="#">Last Name</a>	Custom Field Definition	<a href="#">Applicant</a>
<a href="#">First Name</a>	Custom Field Definition	<a href="#">Applicant</a>
<a href="#">Application Layout</a>	Page Layout	<a href="#">Application</a>
<a href="#">Second Degree</a>	Custom Field Definition	<a href="#">Application</a>
<a href="#">First Degree</a>	Custom Field Definition	<a href="#">Application</a>
<a href="#">Residential Address</a>	Custom Field Definition	<a href="#">Application</a>

**Quick Links**

Tools	Users	App
<a href="#">App Quick Start</a>	<a href="#">New user</a>	<a href="#">Manage apps</a>
<a href="#">Schema Builder</a>	<a href="#">Add multiple users</a>	<a href="#">Manage profiles</a>
<a href="#">New custom object</a>	<a href="#">Reset users' passwords</a>	<a href="#">Enable Chatter feeds</a>

**Security**

Security	Data
<a href="#">New profile</a>	<a href="#">Import accounts &amp; contacts</a>
<a href="#">New permission set</a>	<a href="#">Import custom objects</a>

Select on “Objects” in the Build Section to create a new object

**Figure:** Activities in creating a new object (Position)

# Step 1: Create the position object

## Custom Objects

Custom objects are database tables that allow you to store data specific to your organization in salesforce.com. You can use custom objects to extend salesforce.com functionality or to build new application function. Once you have created a custom object, you can create a custom tab, custom related lists, reports, and dashboards for users to interact with the custom object data. You can also access custom object data through

<a href="#">New Custom Object</a> <a href="#">Schema Builder</a>				
Action	Label	Master Object	Deployed	Description
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Candidate</a>		✓	Details of an applicant who has applied for the job. A given candidate might apply for more than one job at a given point in time.
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Contact</a>		✓	
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Customer</a>		✓	This object is used to store the details of the individual customer
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Customer Record</a>		✓	
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Employee</a>		✓	This object contains the information of employees in Company X
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Employment Website</a>		✓	Information about a particular information website
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Job Application</a>		✓	The details of an actual job application that is being made
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Job Posting</a>	<a href="#">Position</a> , <a href="#">Employment Website</a>	✓	Represents the junction object between a position and an employment website
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Position</a>		✓	Contains the list of all positions available in the company
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Review</a>	<a href="#">Job Application</a>	✓	Object for storing the review performed by an interviewer
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Student</a>		✓	This is the object corresponding to the student

Select on “New Custom Object” to create a new object

**Figure :** Activities in creating a new object (Position)

# Step 1: Define the position object

Specify meta-data for  
the position object

**Custom Object Information**

The singular and plural labels are used in tabs, page layouts, and reports.

Label  Example: Account

Plural Label  Example: Accounts

Starts with vowel sound ☐

The Object Name is used when referencing the object via the API.

Object Name  Example: Account

Description

Context-Sensitive Help Setting ☒ Open the standard Salesforce.com Help & Training window  
☐ Open a window using a Visualforce page

Content Name

**Enter Record Name Label and Format**

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for the API.

Record Name  Example: Account Name

Data Type

Display Format  Example: A-{0000} [What Is This?](#)

Starting Number

**Optional Features**

- ☒ Allow Reports
- ☒ Allow Activities
- ☒ Track Field History

**Figure:** Activities in creating a new object (Position)

# Step 1: Define a tab for the position object

## New Custom Object Tab

### Step 1. Enter the Details

Choose the custom object for this new custom tab. Fill in other details.

Select an existing custom object or [create a new custom object now](#).

Object

Position

Tab Style

Can

(Optional) Choose a Home Page Custom Link to show as a splash page the first time your users click on this tab.

Splash Page Custom Link

--None--

Enter a short description.

Description

This tab is for accessing the position object and its instances

Define and associate a tab for the position object

**Figure:** Activities in creating a new object (Position)

# Step 1: Define the position object

## Custom Object Position

[Standard Fields \[4\]](#) | [Custom Fields & Relationships \[0\]](#) | [Validation Rules \[0\]](#) | [Page Layouts \[1\]](#) | [Field Sets \(BETA\) \[0\]](#) | [Search Layouts \[6\]](#) | [Standard Apex Sharing Recalculation \[0\]](#) | [Object Limits \[10\]](#)

### Custom Object Definition Detail

[Edit](#)[Delete](#)

Singular Label	Position
Plural Label	Positions
Object Name	Position
API Name	Position__c

Define custom attributes of the position object

Created By [Farookh Hussain](#), 29/04/2013 10:36 AM

### Standard Fields

Action	Field Label	Field Name	Data Type
	<a href="#">Created By</a>	CreatedBy	Lookup(User)
	<a href="#">Last Modified By</a>	LastModifiedBy	Lookup(User)
<a href="#">Edit</a>	<a href="#">Owner</a>	Owner	Lookup(User,Queue)
<a href="#">Edit</a>	<a href="#">Position ID</a>	Name	Auto Number

### Custom Fields & Relationships

[New](#)[Field Dependencies](#)[Set History Tracking](#)

No custom fields defined

**Figure:** Activities in creating a new object (Position)



# Step 1: Define the position object

Custom Object  
**Position**

[Standard Fields \[4\]](#) | [Custom Fields & Relationships \[3\]](#) | [Validation Rules \[0\]](#) | [Page Layouts \[1\]](#) | [Field Sets \(BETA\) \[0\]](#) | [Search Layouts \[6\]](#) | [Standard Buttons and Links \[8\]](#) | [Custom Buttons and Links \[0\]](#) | [Record Types \[0\]](#) | [Apex Sharing Recalculation \[0\]](#) | [Object Limits \[10\]](#)

### Custom Object Definition Detail

[Edit](#) [Delete](#)

Singular Label	Position	Description	This object is used to model a new job
Plural Label	Positions	Enable Reports	<input checked="" type="checkbox"/>
Object Name	Position	Track Activities	<input checked="" type="checkbox"/>
API Name	Position__c	Track Field History	<input checked="" type="checkbox"/>
		Deployment Status	Deployed
		Help Settings	Standard salesforce.com Help Window
Created By	Farookh Hussain, 29/04/2013 10:36 AM	Modified By	Farookh Hussain, 29/04/2013 10:36 AM

### Standard Fields

Action	Field Label	Field Name	Data Type	Controlling Field
	<a href="#">Created By</a>	CreatedBy	Lookup(User)	
	<a href="#">Last Modified By</a>	LastModifiedBy	Lookup(User)	
<a href="#">Edit</a>	<a href="#">Owner</a>	Owner	Lookup(User,Queue)	
<a href="#">Edit</a>	<a href="#">Position ID</a>	Name	Auto Number	

Custom attributes of the position object

### Custom Fields & Relationships

[New](#) [Field Dependencies](#) [Set History Tracking](#)

Action	Field Label	API Name	Data Type	Controlling Field	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Advertised Date</a>	Advertised_Date__c	Date		Farookh Hussain, 29/04/2013 10:42 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Closing Date</a>	Closing_Date__c	Date		Farookh Hussain, 29/04/2013 10:44 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Description</a>	Description__c	Text Area(255)		Farookh Hussain, 29/04/2013 10:44 AM

**Figure:** Activities in creating a new object (Position)

# Step 1.1: Define a validation rule

**Validation Rule Edit** Save Save & New Cancel

Rule Name

Active ☒

Description

**Error Condition Formula**

Example:  [More Examples ...](#)  
Display an error if Discount is more than 30%  
If this formula expression is **true**, display the text defined in the Error Message area

Insert Field Insert Operator ▾

Check Syntax

**Functions**

-- All Function Categories ▾

ABS  
AND  
BEGINS  
BLANKVALUE  
BR  
CASE

Insert Selected Function

ABS(number)  
Returns the absolute value of a number, a number without its sign

[Help on this function](#)

**Error Message**

Example:

This message will appear when Error Condition formula is **true**

Error Message


This error message can either appear at the top of the page or below a specific field on the page

Error Location ☒ Top of Page ☐ Field i

Define a validation rule for the closing date

**Figure:** Creating a new validation rule

# Step 1.1: Check the validation rule

 Position Edit  
New Position

---

**Position Edit** Save Save & New Cancel

**Error: Invalid Data.**  
Review all error messages below to correct your data.  
The closing date is not proper. Please correct it. It has to be more than the advertised date

**Information**

Advertised Date	<input type="text" value="1/04/2013"/> [ 29/04/2013 ]
Description	<input type="text" value="Should require skills in Java and C++"/>
Closing Date	<input type="text" value="29/03/2013"/> [ 29/04/2013 ]

Save Save & New Cancel

Check the implementation of validation rule

**Figure:** Check for the correct execution of the validation rule<sup>11</sup>

# Step 2: Define the applicant object

Custom Object

Applicant

[Standard Fields \[4\]](#) | [Custom Fields & Relationships \[6\]](#) | [Validation Rules \[0\]](#) | [Page Layouts \[1\]](#) | [Field Sets \(BETA\) \[0\]](#) | [Search Layouts \[6\]](#) | [Standard Buttons and Links \[8\]](#) | [Custom Buttons and Links \[0\]](#) | [Record Types \[0\]](#) | [Apex Sharing Reasons \[0\]](#) | [Apex Sharing Re](#)

## Custom Object Definition Detail

[Edit](#) [Delete](#)

Singular Label Applicant  
Plural Label Applicants  
Object Name Applicant  
API Name Applicant\_\_c

Description  
Enable Reports ☒  
Track Activities ☒  
Track Field History ☒  
Deployment Status Deployed  
Help Settings Standard salesforce.com Help Window  
Modified By [Farookh Hussain](#), 29/04/2013 11:39 AM

Created By [Farookh Hussain](#), 29/04/2013 11:39 AM

## Standard Fields

Action	Field Label	Field Name	Data Type	Controlling Field
<a href="#">Edit</a>	<a href="#">Applicant ID</a>	Name	Auto Number	
	<a href="#">Created By</a>	CreatedBy	Lookup(User)	
	<a href="#">Last Modified By</a>	LastModifiedBy	Lookup(User)	
<a href="#">Edit</a>	<a href="#">Owner</a>	Owner	Lookup(User,Queue)	

## Custom Fields & Relationships

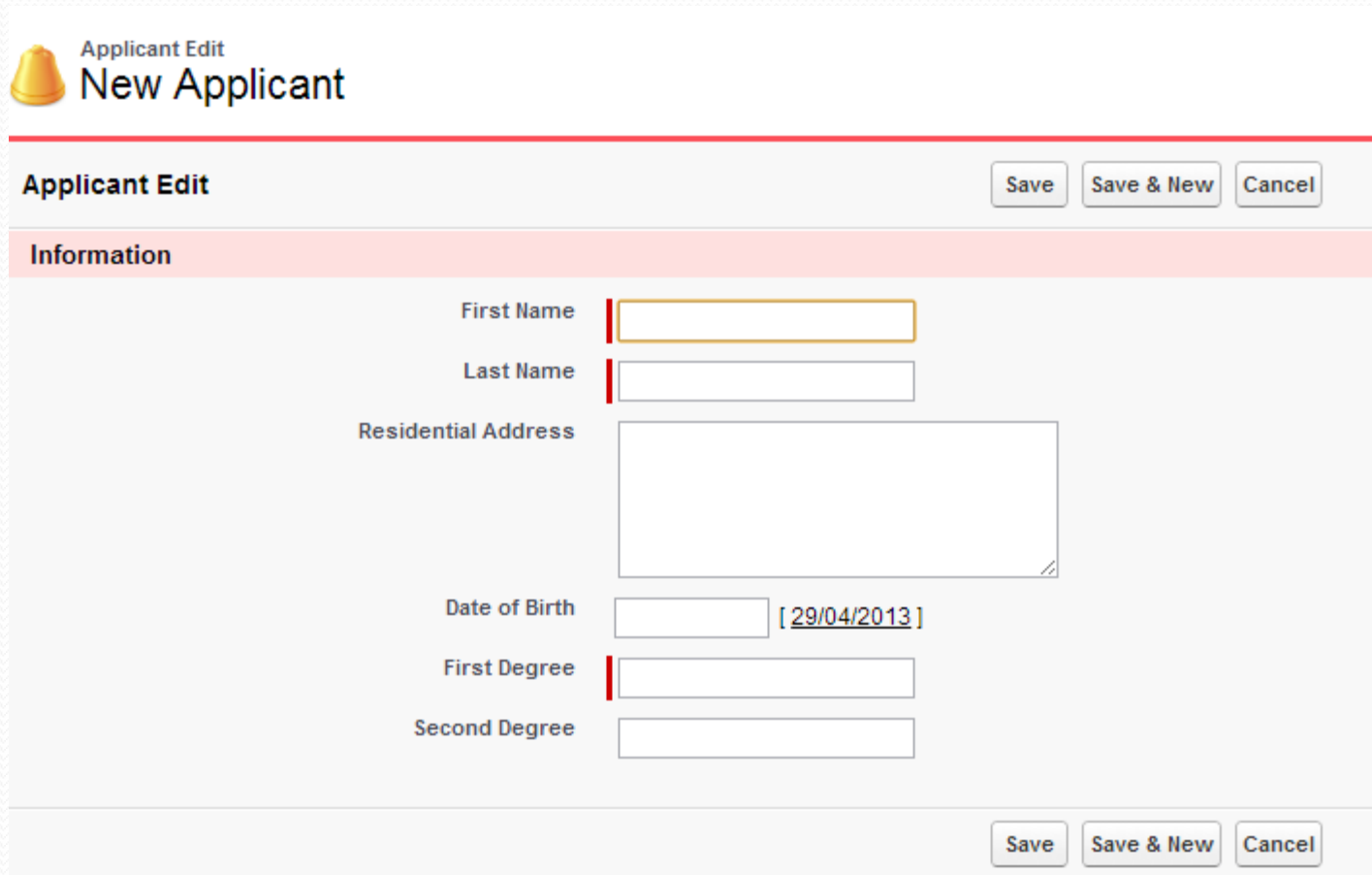
[New](#) [Field Dependencies](#) [Set History Tracking](#)


Action	Field Label	API Name	Data Type	Controlling Field	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Date of Birth</a>	Date_of_Birth__c	Date		<a href="#">Farookh Hussain</a> , 29/04/2013 11:49 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">First Degree</a>	First_Degree__c	Text(50)		<a href="#">Farookh Hussain</a> , 29/04/2013 11:50 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">First Name</a>	First_Name__c	Text(50)		<a href="#">Farookh Hussain</a> , 29/04/2013 11:41 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Last Name</a>	Last_Name__c	Text(50)		<a href="#">Farookh Hussain</a> , 29/04/2013 11:42 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Residential Address</a>	Residential_Address__c	Long Text Area(32768)		<a href="#">Farookh Hussain</a> , 29/04/2013 11:48 AM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Second Degree</a>	Second_Degree__c	Text(50)		<a href="#">Farookh Hussain</a> , 29/04/2013 11:53 AM

Custom attributes of the applicant object

**Figure:** Define the applicant objects and its custom attributes

# Step 2.1: Customizing the page layout



 Applicant Edit  
New Applicant

---

**Applicant Edit** Save Save & New Cancel

**Information**

First Name

Last Name

Residential Address

Date of Birth  [ 29/04/2013 ]

First Degree

Second Degree

Save Save & New Cancel

**Figure:** Page layout of the applicant object prior to customization

# Step 2.1: Customizing the page layout

## Related Lookup Filters

No related lookup filters defined.

## Validation Rules

New

No validation rules defined.

## Triggers

New

No triggers defined

## Page Layouts

New

Page Layout Assignment

Action	Page Layout Name	Created By	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	Applicant Layout	<a href="#">Farookh Hussain</a> , 29/04/2013 11:39 AM	<a href="#">Farookh Hussain</a> , 29/04/2013 11:53 AM

## Field Sets (BETA)

New

No field sets defined.

## Search Layouts

Customize the existing page layout of the applicant object

**Figure:** Customizing the applicant object page layout

# Step 2.1: Customizing the page layout

**Fields**

Buttons  
Related Lists

Quick Find | Field Name

Section	Date of Birth	Last Name
Blank Space	First Degree	Owner
Applicant ID	First Name	Residential Address
Created By	Last Modified By	Second Degree

**Applicant Sample**

**Highlights Panel**

Customize the highlights panel for this page layout...

**Applicant Detail**

Standard Buttons: Edit Delete Clone Sharing Custom Button

**Personal Details**

- Applicant ID: GEN-2004-001234
- \* First Name: Sample First Name
- \* Last Name: Sample Last Name
- Residential Address: Sample Residential Address
- Date of Birth: 29/04/2013

**Qualifications**

- \* First Degree: Sample First Degree
- Second Degree: Sample Second Degree

**Information** (Header visible on edit only)

**System Information** (Header visible on edit only)

**Custom Links** (Header visible on edit only)

**Figure:** Customizing the applicant object page layout

# Step 2.1: Customizing the page layout

**Applicant Edit**  
New Applicant

**Applicant Edit**

**Personal Details**

First Name

Last Name

Residential Address

Date of Birth  [ 29/04/2013 ]

**Qualifications**

First Degree

Second Degree

**Figure:** Page layout after customization



# Step 3: Define the application object

Custom Object  
**Application**

[Standard Fields \(3\)](#) | [Custom Fields & Relationships \(4\)](#) | [Validation Rules \(0\)](#) | [Page Layouts \(1\)](#) | [Field Sets \(BETA\) \(0\)](#) | [Search Layouts \(6\)](#) | [Standard Buttons and Links \(8\)](#) | [Custom Buttons and Links \(0\)](#) | [Record Types \(0\)](#) | [Obj](#)

### Custom Object Definition Detail

[Edit](#) [Delete](#)

Singular Label	Application	Description	
Plural Label	Applications	Enable Reports	<input checked="" type="checkbox"/>
Object Name	Application	Track Activities	<input checked="" type="checkbox"/>
API Name	Application__c	Track Field History	<input checked="" type="checkbox"/>
		Deployment Status	Deployed
		Help Settings	Standard salesforce.com Help Window
Created By	<a href="#">Farookh Hussain</a> , 29/04/2013 12:22 PM	Modified By	<a href="#">Farookh Hussain</a> , 29/04/2013 12:22 PM

### Standard Fields

Action	Field Label	Field Name	Data Type	Controlling Field
<a href="#">Edit</a>	<a href="#">Application ID</a>	Name	Auto Number	
	<a href="#">Created By</a>	CreatedBy	Lookup(User)	
	<a href="#">Last Modified By</a>	LastModifiedBy	Lookup(User)	

### Custom Fields & Relationships

[New](#) [Field Dependencies](#) [Set History Tracking](#)

Action	Field Label	API Name	Data Type	Controlling Field	Modified By
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">ApplicantID</a>	ApplicantID__c	Master-Detail(Applicant)		<a href="#">Farookh Hussain</a> , 29/04/2013 12:27 PM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Cover Letter</a>	Cover_Letter__c	Rich Text Area(32768)		<a href="#">Farookh Hussain</a> , 29/04/2013 12:32 PM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Position</a>	PositionID__c	Master-Detail(Position)		<a href="#">Farookh Hussain</a> , 29/04/2013 12:25 PM
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Website</a>	Website__c	URL(255)		<a href="#">Farookh Hussain</a> , 29/04/2013 12:32 PM

Custom attributes of the application object

**Figure:** Define the application object

# Step 3: Defining new applications

Application Edit  
New Application

Application Edit Save Save & New Cancel

Information

Position P-0003

ApplicantID A-0001

Cover Letter

Dear ABC;  
I would like to apply for this new position  
With Best Regards  
Farookh

Website http://scholar.google.com

Specify the position being applied for

Specify who is applying for the job

Cover letter for the job

Applicant's URL

Save Save & New Cancel

**Figure:** Define new applications