



salesforce



Salesforce Colorado Technology Day

Developer 401 Lite Training



Michael Yeganeh
Senior Director, Solution Engineering

June 29, 2017



Safe Harbor

"Safe harbor" statement under the Private Securities Litigation Reform Act of 1995:

This presentation contains forward-looking statements, the achievement or success of which involves risks, uncertainties, and assumptions. If any such risks or uncertainties materialize or if any of the assumptions proves incorrect, the results of salesforce.com, inc. could differ materially from the results expressed or implied by the forward-looking statements we make.

The risks and uncertainties referred to above include – but are not limited to – risks associated with possible fluctuations in our financial and operating results; our rate of growth and anticipated revenue run rate, including our ability to convert deferred revenue and unbilled deferred revenue into revenue and, as appropriate, cash flow, and our ability to grow deferred revenue and unbilled deferred revenue; errors, interruptions or delays in our service or Web hosting; breaches of our security measures; the financial impact of any previous and future acquisitions; the nature of our business model; our ability to continue to release, and gain customer acceptance of, new and improved versions of our service; successful customer deployment and utilization of our existing and future services; changes in our sales cycle; competition; various financial aspects of our subscription model; unexpected increases in attrition or decreases in new business; our ability to realize benefits from strategic partnerships; reliance on third-party computer hardware and software; the emerging markets in which we operate; unique aspects of entering or expanding in international markets; our ability to hire, retain and motivate employees and manage our growth; changes in our customer base; technological developments; regulatory developments; litigation related to intellectual property and other matters, and any related claims, negotiations and settlements; unanticipated changes in our effective tax rate; factors affecting our outstanding convertible notes and credit facility; fluctuations in the number of shares we have outstanding and the price of such shares; foreign currency exchange rates; collection of receivables; interest rates; factors affecting our deferred tax assets and ability to value and utilize them, including the timing of achieving profitability on a pre-tax basis; the potential negative impact of indirect tax exposure; the risks and expenses associated with our real estate and office facilities space; and general developments in the economy, financial markets, and credit markets.

Further information on these and other factors that could affect the financial results of salesforce.com, inc. is included in the reports on Forms 10-K, 10-Q and 8-K and in other filings we make with the Securities and Exchange Commission from time to time, including our most recent Form 10-K. These documents are available on the SEC Filings section of the Investor Information section of our website at www.salesforce.com/investor. Any unreleased services or features referenced in this or other presentations, press releases or public statements are not currently available and may not be delivered on time or at all. Customers who purchase our services should make their purchase decisions based upon features that are currently available.



Agenda



Welcome & Introductions



Customize the User Interface:
Views, Page Layouts, Social



Salesforce Platform Overview &
Core Services



Declarative Application Logic:
Formulas, Validation, Workflow



Declarative Application Development:
Create an Application & Database



Building Reports and
Dashboards



Mobile



developer.salesforce.com/signup

User Name must be in the ***form of an email address***

e.g. first.last@developer.org

Best to ****NOT**** use your real work email address
for your User Name

Get your very own Developer Edition
A full-featured copy of Force.com, for FREE.

Name
First: [] Last: []

Email
Your email address: []

Role
Developer: []

Company
Company Name: []

Country
United States: []

Postal Code: []

Username
Ex. name@yourcompany.com

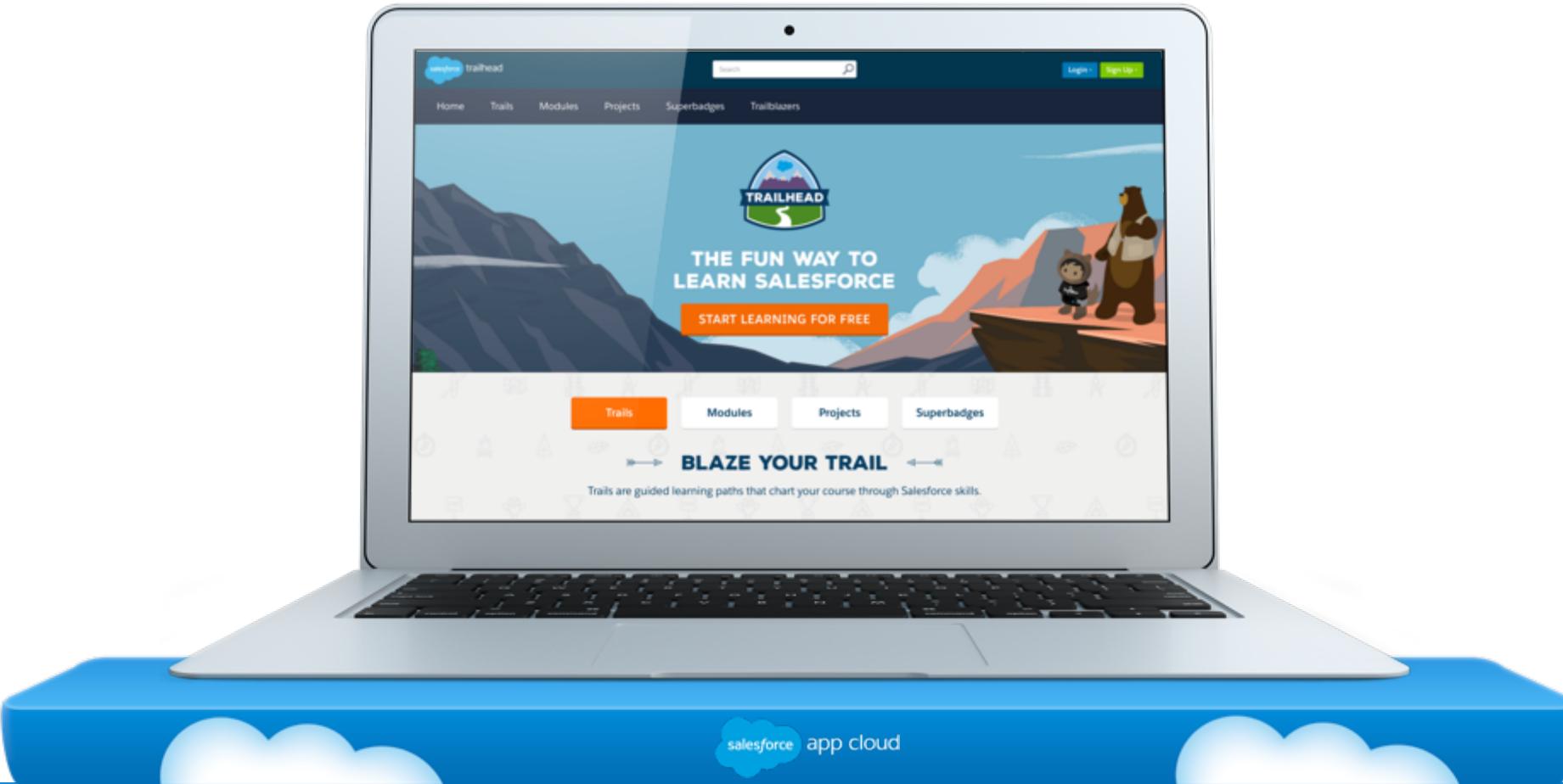
By registering, you confirm you have read and agree to the Terms of Use and the Master Subscription Agreement and agree that my data is subject to the Privacy Statement, including use for marketing purposes.

Sign me up >

Org Sign-up

salesforce app cloud

trailhead.salesforce.com



trust.salesforce.com

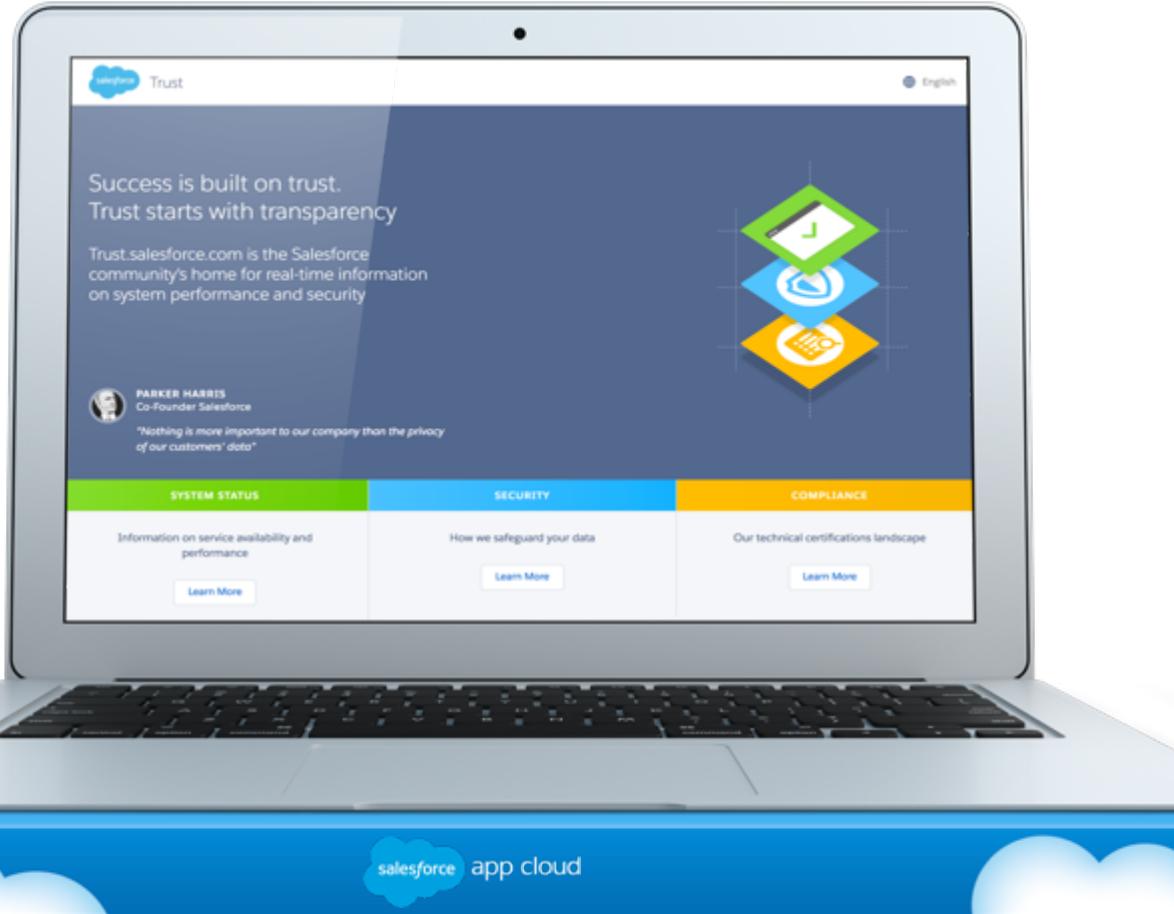
Live & up to date system performance data

Up-to-the minute information on planned maintenance

Phishing, malicious software and social engineering threats

Security best practices for your organization

Information on how we safeguard your data



Development Lifecycle Guide

Enterprise Development Best Practices

https://resources.docs.salesforce.com/sfdc/pdf/salesforce_development_lifecycle.pdf

This guide prepares you to undertake the development and release of applications on the Force.com platform.

It starts with the most basic scenario, using a developer sandbox and change sets.

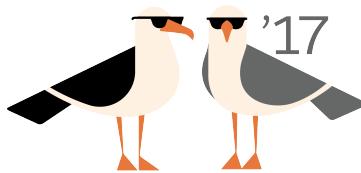
Later chapters address other development environments, tools, and processes for more complex enterprise scenarios.



Development Lifecycle Guide

Enterprise Development on the Force.com Platform

Version 40.0, Summer '17



@salesforcedocs
Last updated: June 13, 2017



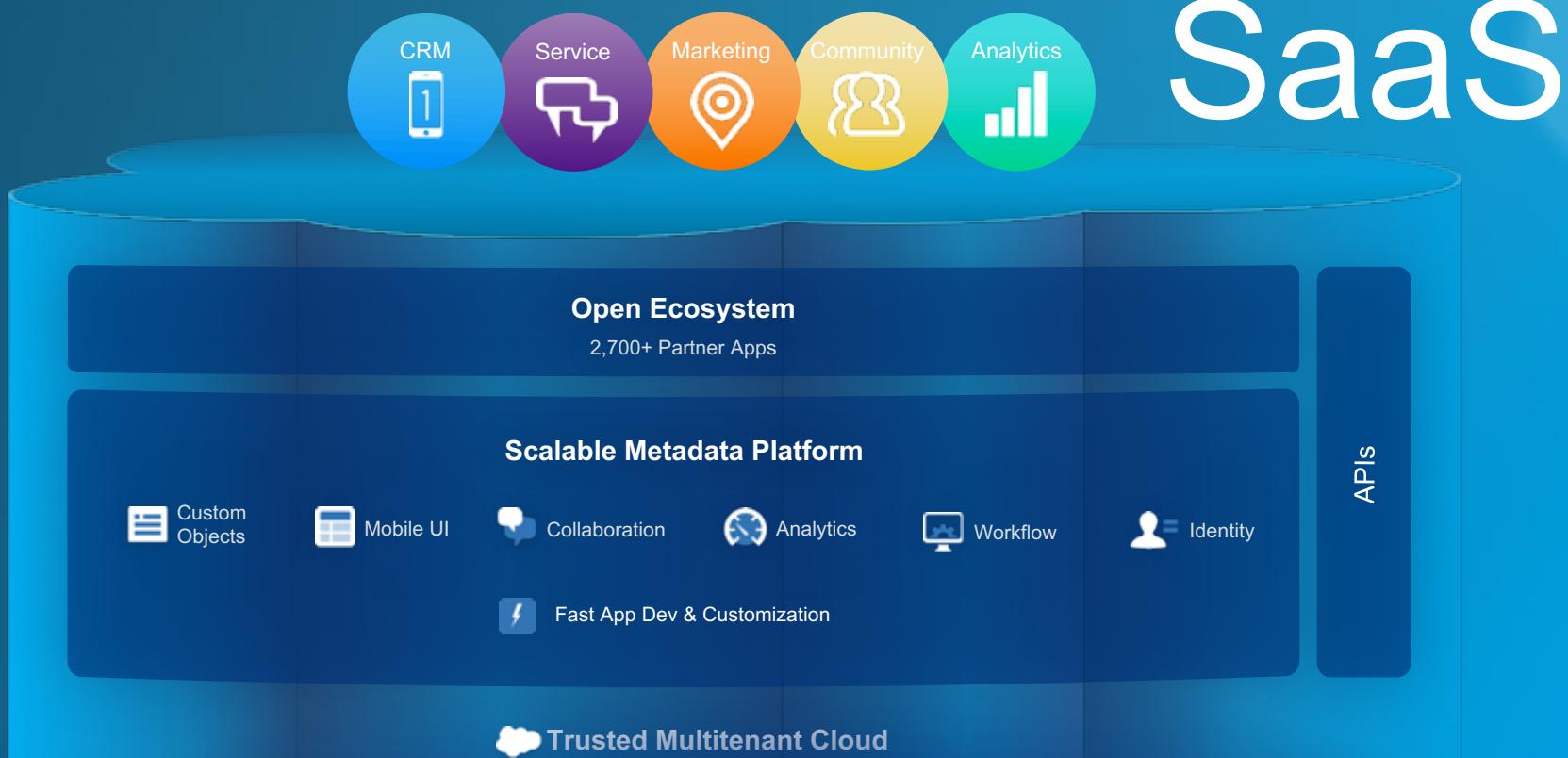


A large, white, lowercase "salesforce" wordmark inside a white cloud shape. To its right, the words "app cloud" are written in a white, lowercase, sans-serif font.



The **salesforce** Customer Success Platform

PaaS



AppExchange

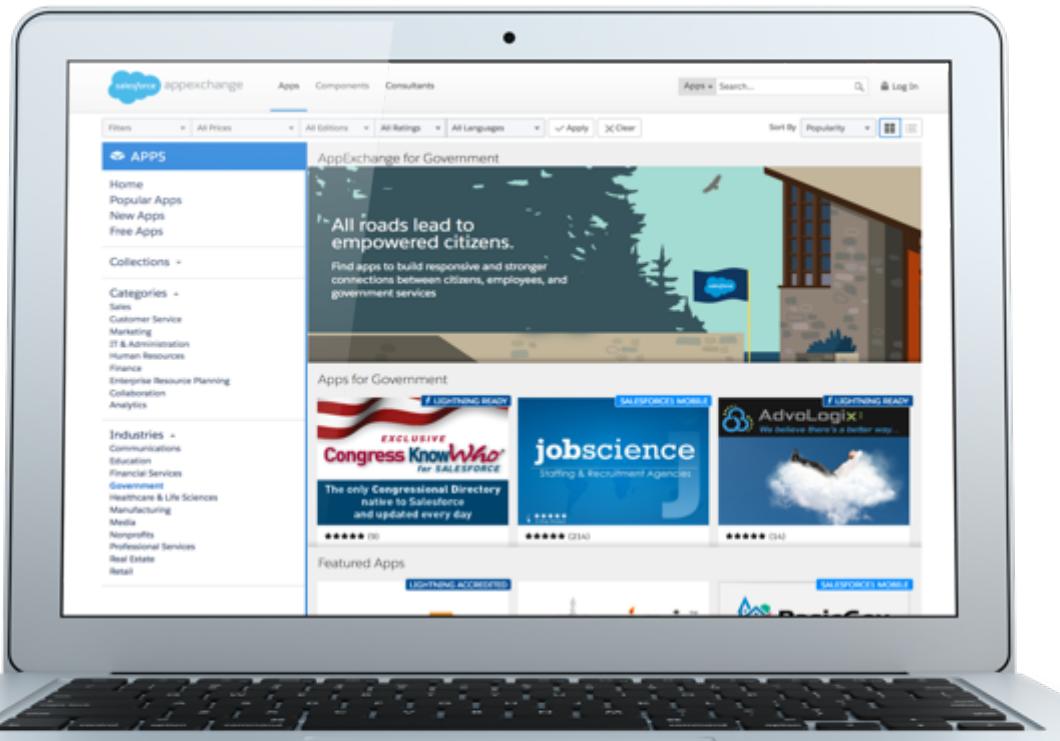
World's Largest Business App Marketplace

Approximately 3000 apps across all industries and business lines

Over 4M app downloads

2.4M+ developers

Government-specific AppExchange



salesforce app cloud



salesforce

public sector
DEVELOPER WORKSHOP

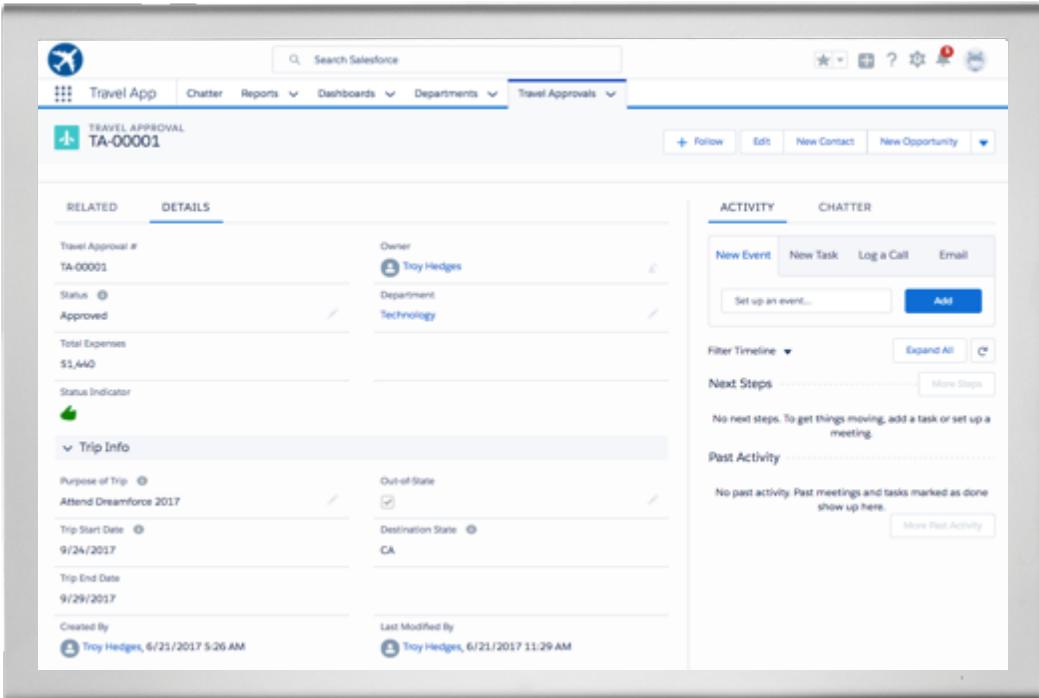
The Travel Approval App

January 26, 2014

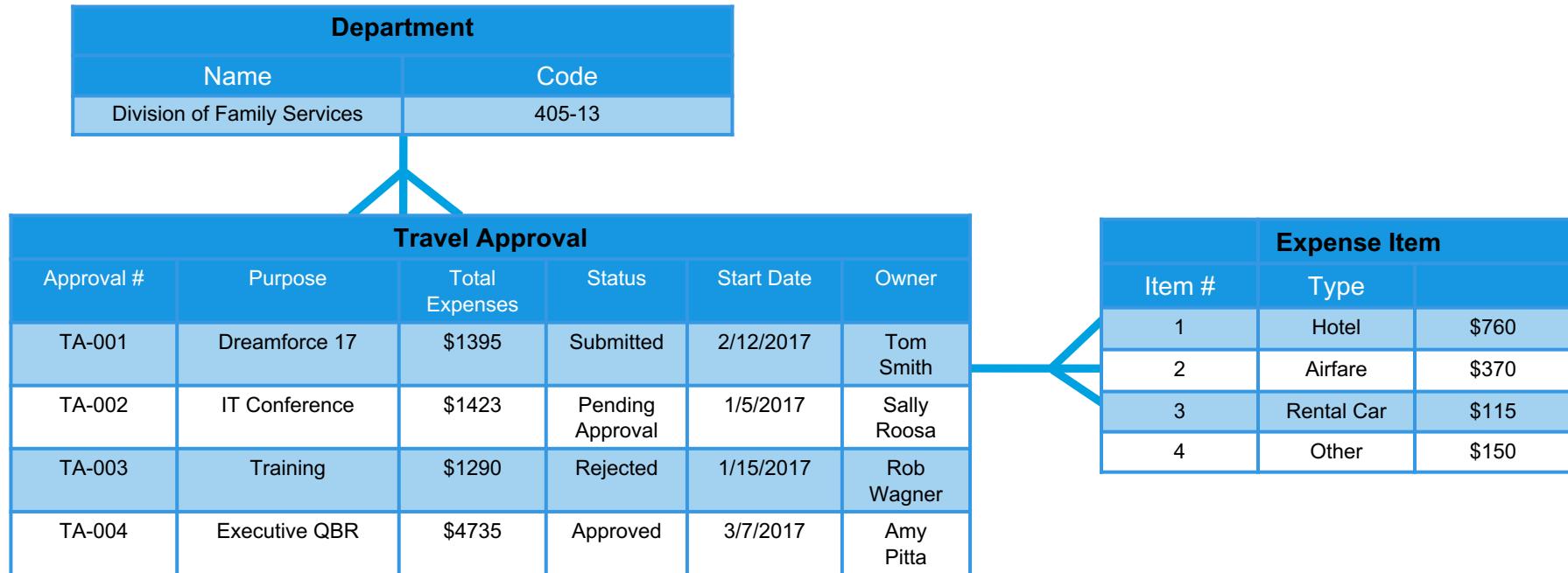


The Travel Approval App

- At the heart of this app are **Travel Approval** requests
 - Employees requesting approval before taking a trip that will have expenses
- Create **Travel Approval** request containing one or more expenses as an **expense items**
- Relate **Department** to **Travel Approval**
- Start by creating a **custom app**, **objects** and **fields**



Travel Approval Data Model Schema





public sector DEVELOPER WORKSHOP

Create an Application and Database



Overview: Create an Application & Database

- Create an application
- How to design your Salesforce Data Model
- Create custom objects and fields
- Relate objects
- Data import tools



Open Cloud Database

Database Services

Structured relational data storage

Unstructured file-oriented content

Database-level caching for improved performance

Triggers and validation rules

Automatic indexing, backup, replication, and disaster recovery

Full text search and SOQL for querying relational data

Auto-scaling to support any size application



What is a Salesforce Object?

A logical business entity you track in your business

- Think of a Salesforce Object as a Data Table

- Records are rows
 - Columns are Fields

- Examples

- Accounts
 - Contacts
 - Cases
 - Contracts
 - Policies
 - Service Plans
 - Benefits
 - Incidents
 - Travel Approval

Delete	Name	Purpose_of_Trip_c	Department_c	Destination_Stat...	Out_of_State_c	Status_c	Total_Expenses_c	Trip_Start_Date_c	Trip_End_Date_c	OwnerId
<input type="checkbox"/>	TA-00001	Attend Dreamforce 2017	a0241000005GcUqAAK	CA	true	Pending Appr...	1370.0	2017-09-24	2017-09-30	00541000001sCs4AAE
<input type="checkbox"/>	TA-00219	Stamm, Poulos and Bechtelar	a0241000005GcUqAAK	FL	true	Rejected	0.0	2016-04-21	2016-04-21	00541000001sCs4AAE
<input checked="" type="checkbox"/>	TA-00220	Ebert Group	a0241000005GcV0AAK	CA	true	Approved	0.0	2016-08-25	2016-09-01	00541000001sCs4AAE
<input type="checkbox"/>	TA-00221	Orn Group	a0241000005GcUmAAK	OK	true	Approved	0.0	2016-07-08	2016-07-08	00541000001sCs4AAE
<input type="checkbox"/>	TA-00095	Ward, Wills and Sanford	a0241000005GcUvAAK	TX	false	Approved	0.0	2016-09-18	2016-09-30	00541000001sCs4AAE
<input type="checkbox"/>	TA-00096	Schaefer, Von and Bins	a0241000005GcUuAAK	FL	true	Approved	0.0	2016-10-04	2016-10-04	00541000001sCs4AAE
<input type="checkbox"/>	TA-00097	Upton, Murphy and Block	a0241000005GcUuAAK	FL	true	Approved	0.0	2016-07-19	2016-07-26	00541000001sCs4AAE
<input type="checkbox"/>	TA-00098	Bode Inc	a0241000005GcUuAAK	OK	true	Rejected	0.0	2016-03-31	2016-04-18	00541000001sCs4AAE
<input type="checkbox"/>	TA-00099	Roberts Inc	a0241000005GcUvAAK	CA	true	Rejected	0.0	2016-07-05	2016-07-09	00541000001sCs4AAE
<input type="checkbox"/>	TA-00100	Mayer, Hayes and Strosin	a0241000005GcUmAAK	FL	true	Approved	0.0	2016-09-21	2016-10-06	00541000001sCs4AAE
<input type="checkbox"/>	TA-00101	Gottlieb, Braun and Swaniawski	a0241000005GcUyAAK	GA	true	Approved	0.0	2016-02-06	2016-02-15	00541000001sCs4AAE
<input type="checkbox"/>	TA-00102	Howell-Douglas	a0241000005GcUuAAK	GA	true	Approved	0.0	2016-09-03	2016-09-03	00541000001sCs4AAE
<input type="checkbox"/>	TA-00174	Marquardt LLC	a0241000005GcV0AAK	TX	false	Approved	0.0	2016-10-13	2016-10-25	00541000001sCs4AAE
<input type="checkbox"/>	TA-00175	Ondricka-Glover	a0241000005GcUzAAK	GA	true	Approved	0.0	2016-07-16	2016-07-21	00541000001sCs4AAE
<input type="checkbox"/>	TA-00176	Purdy-Hyatt	a0241000005GcUhAAK	TX	false	Approved	0.0	2016-11-21	2016-12-03	00541000001sCs4AAE
<input type="checkbox"/>	TA-00177	Eichmann-Blick	a0241000005GcUvAAK	TX	false	Rejected	0.0	2016-12-23	2017-01-13	00541000001sCs4AAE
<input type="checkbox"/>	TA-00178	Senger-Schowalter	a0241000005GcUuAAK	GA	true	Approved	0.0	2016-09-21	2016-09-25	00541000001sCs4AAE
<input type="checkbox"/>	TA-00179	King-Gottlieb	a0241000005GcV1AAK	TX	false	Rejected	0.0	2016-11-25	2016-12-05	00541000001sCs4AAE
<input type="checkbox"/>	TA-00180	Ulrich Group	a0241000005GcV0AAK	GA	true	Rejected	0.0	2016-03-16	2016-03-22	00541000001sCs4AAE
<input type="checkbox"/>	TA-00181	Ebert, Smitham and Bashirian	a0241000005GcUhAAK	FL	true	Approved	0.0	2016-01-29	2016-01-29	00541000001sCs4AAE
<input type="checkbox"/>	TA-00182	Hane-Marvin	a0241000005GcUvAAK	OK	true	Approved	0.0	2016-10-14	2016-10-17	00541000001sCs4AAE
<input type="checkbox"/>	TA-00183	Monahan Group	a0241000005GcUuAAK	GA	true	Approved	0.0	2016-08-04	2016-08-11	00541000001sCs4AAE
<input type="checkbox"/>	TA-00238	Cronin LLC	a0241000005GcUuAAK	TX	false	Approved	0.0	2016-12-21	2016-12-25	00541000001sCs4AAE
<input type="checkbox"/>	TA-00239	Klein-Conroy	a0241000005GcUvAAK	TX	false	Rejected	0.0	2016-07-07	2016-07-14	00541000001sCs4AAE
<input type="checkbox"/>	TA-00240	Weissnet, Kub and Gulgowski	a0241000005GcUqAAK	CA	true	Approved	0.0	2016-06-21	2016-06-30	00541000001sCs4AAE
<input type="checkbox"/>	TA-00241		a0241000005GcUuAAK	CA	true	Announced	0.0	2016-04-09	2016-04-21	00541000001sCs4AAE



Field Data Types

Salesforce offers multiple field data types

 Numeric Number Currency Percent	 Limited Option Checkbox PickList PickList Multi-Select	 Text Text Text Area Text (Long) Text (Rich) Encrypted	 Calendar Date Date & Time	 Formatted Text Email Phone URL	 Calculation Auto-Number Formula Roll-up Summary
---	---	---	--	--	--



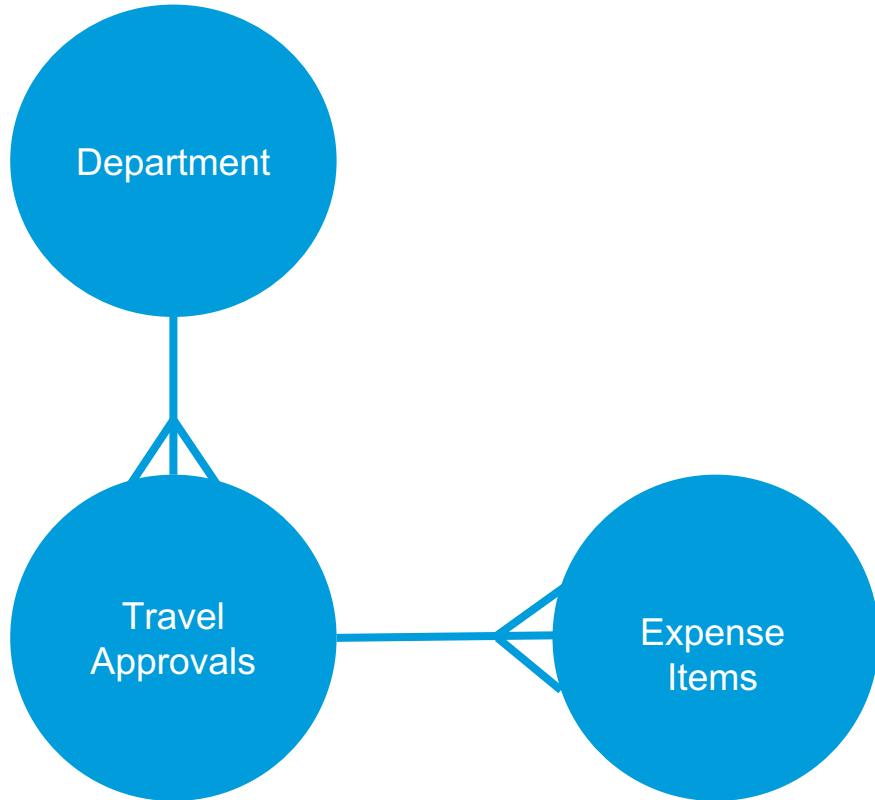
Geolocation



Relating Objects

1:M, M:M, M:1

- Parents-to-Children
- 1-to-Many
- Relationship is defined at the child level by a field type
 - Master-Detail Relationship
 - Lookup Relationship
- Many-to-Many
 - Via Junction Object



Setup Home

The screenshot shows the Salesforce Setup Home interface. The left sidebar contains navigation links under 'Setup' and 'Platform Tools'. Under 'Platform Tools', 'Apps' is expanded, showing 'App Manager' (highlighted with a red box), 'AppExchange Marketplace', 'Connected Apps', and 'Installed Packages'. Under 'Objects and Fields', 'Object Manager' (highlighted with a red box) is listed along with 'Picklist Value Sets'. The main content area features a 'SETUP Home' banner with three cards: 'Go Mobile' (Prepare the Salesforce1 mobile app for your users), 'Visit AppExchange' (Extend Salesforce with the #1 business app marketplace), and 'Click to Customize' (Use the Object Manager to add fields, build layouts, and more). Below this is a section titled 'Most Recently Used' listing 10 items.

NAME	TYPE	OBJECT
Marketing: Product Inquiry Response	Email Template	
Travel Approval Request	Process Definition	Travel Approval
Set Status to Rejected	Field Update	Travel Approval
Set Status to Approved	Field Update	Travel Approval
Status Indicator	Custom Field Definition	Travel Approval
StatusImages	Static Resource	

Create New Object

The screenshot shows the Salesforce Object Manager page. At the top, there is a navigation bar with icons for Setup, Home, and Object Manager, where 'Object Manager' is highlighted with a red box. Below the navigation bar is a search bar labeled 'Search Salesforce'. On the right side of the header are various system icons. The main area is titled 'Object Manager' with a gear icon and shows '30 items, Sorted by Label'. There is a 'Find in page' search bar and a 'Schema Builder' button. A 'Create' button is visible, also highlighted with a red box. A dropdown menu from this button shows the option 'Custom Object', which is also highlighted with a red box. The main table lists objects with columns for Label, API Name, Description, Last Modified, Deployed, and Custom. The objects listed include Account, Activity, Asset, Asset Relationship, Campaign, Campaign Member, Case, Contact, Content Version, Contract, D&B Company, Department, Duplicate Record Item, Duplicate Record Set, Email Message, and Event.

Label	API Name	Description	Last Modified	Deployed	Custom
Account	Account				
Activity	Activity				
Asset	Asset				
Asset Relationship	AssetRelationship				
Campaign	Campaign				
Campaign Member	CampaignMember				
Case	Case				
Contact	Contact				
Content Version	ContentVersion				
Contract	Contract				
D&B Company	DandBCompany				
Department	Department	6/20/2017	✓	✓	▼
Duplicate Record Item	DuplicateRecordItem				
Duplicate Record Set	DuplicateRecordSet				
Email Message	EmailMessage				
Event	Event				

Setup > Object and Fields > Object Manager



Schema Builder

The screenshot shows the Salesforce Schema Builder interface. At the top, there's a navigation bar with a globe icon, the word "Setup", "Home", "Object Manager", and a search bar. Below the navigation bar, the title "Schema Builder" is displayed next to a gear icon. On the left, a sidebar lists various object types with checkboxes, and "Department" is checked. The main area displays three objects:

- Department**:
 - Created By: Lookup(User)
 - Department Code: Text(10) (Unique Case Insensitive)
 - Department Name: Text(80)
 - Last Modified By: Lookup(User)
 - Owner: Lookup(User+1)
- Travel Approval**:
 - Created By: Lookup(User)
 - Department: Lookup(Department)
 - Destination State: Text(2)
 - Last Modified By: Lookup(User)
 - Out-of-State: Checkbox
 - Owner: Lookup(User+1)
 - Purpose of Trip: Text Area(255)
 - Status: Picklist
 - Status Indicator: Formula (Text)
 - Total Expenses: Roll-Up Summary (SUM Expense Item)
 - Travel Approval #: Auto Number
 - Trip End Date: Date
 - Trip Start Date: Date
- Expense Item**:
 - Amount: Currency(18, 0)
 - Created By: Lookup(User)
 - Expense Item Number: Auto Number
 - Expense Type: Picklist
 - Last Modified By: Lookup(User)
 - Travel Approval: Master-Detail(Travel Approval)

On the right side, there are three empty boxes for dragging and dropping objects, and a "Help for this Page" link.

Tools for Data Management

- Data Import Wizard

- Easy to use data migration tool within Salesforce
- Imports accounts, contacts, leads, solutions, and custom objects.
- Imports up to 50,000 records.

- API-based Tools

- Open Source Tools
- Data Loader
- Partner Tools
- Custom-built Tools
 - Load any object
 - Load > 50k records
 - Schedule regular data loads
 - Export data for backup
 - Mass delete

The image shows two screenshots illustrating data management tools. The top screenshot is a screenshot of the 'Data Import Wizard' within the Salesforce interface. It displays a table titled 'Recent Import Jobs' showing four completed imports for the 'Travel Approval' object. The bottom screenshot is a window titled 'Apex Data Loader' showing a toolbar with various data manipulation buttons: Insert, Update, Upsert, Delete, Hard Delete, Export, Export All, and Cancel. A yellow speech bubble labeled 'Data Import Wizard' points to the top screenshot, and another yellow speech bubble labeled 'Apex Data Loader' points to the bottom screenshot.

Status	Object	Records Created	Records Updated	Records Failed	Start Date	Processing Time (ms)
Closed	Travel Approval	300	0	0	01-04-2017 06:58	6776
Closed	Travel Approval	5	0	0	01-04-2017 06:56	383
Closed	Travel Approval	5	0	0	01-04-2017 06:51	75
Closed	Travel Approval	10	0	0	01-04-2017 06:46	183





Mobile



Salesforce1 Mobile

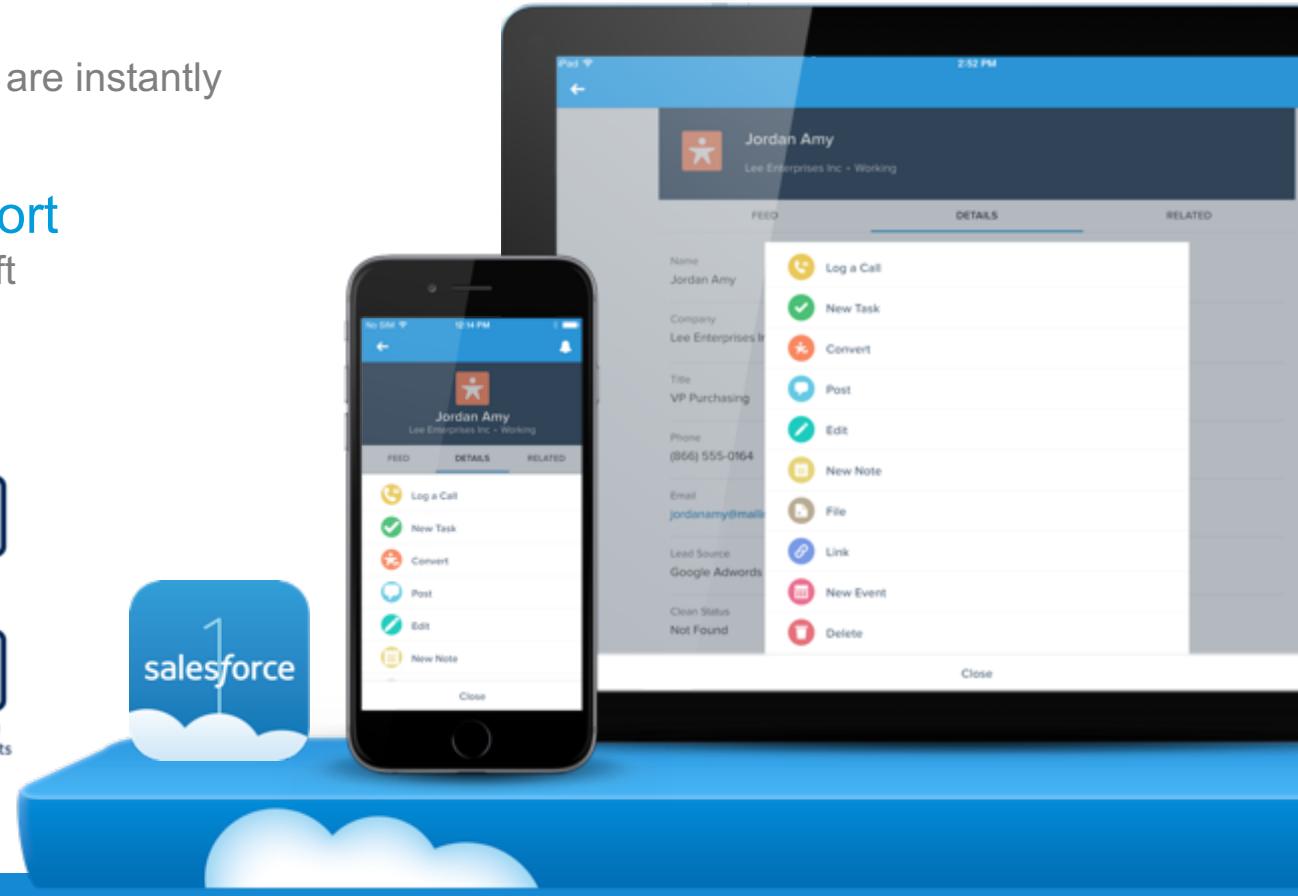
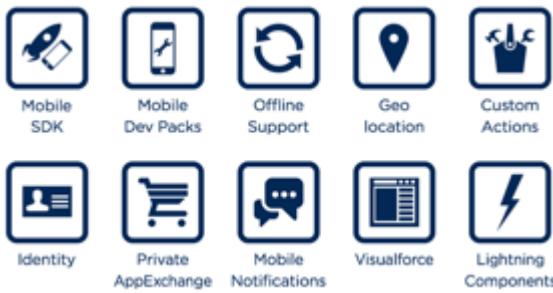
Instantly Mobile

Browser-based configurations are instantly mobile

Multiple Platform Support

Android, iOS (native); Microsoft (via Browser)

Mobile Services





Branding / Custom UI



Two Approaches to Development

Declarative Approach

Lightning Apps/Pages
Page Layouts
Record Types

Programmatic Approach

Lightning Components
VisualForce Pages

User Interface

Formula Fields
Validation Rules
Workflows and Approvals

Apex Controllers
Apex Triggers

Business Logic

Custom Objects
Custom Fields
Relationships

Metadata API
REST API
Bulk API

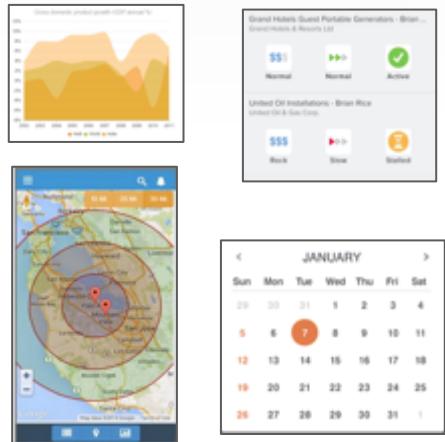
Data Model



Lightning: A New Way to Deliver Engaging Enterprise Apps

Democratizing Component-Based App Building

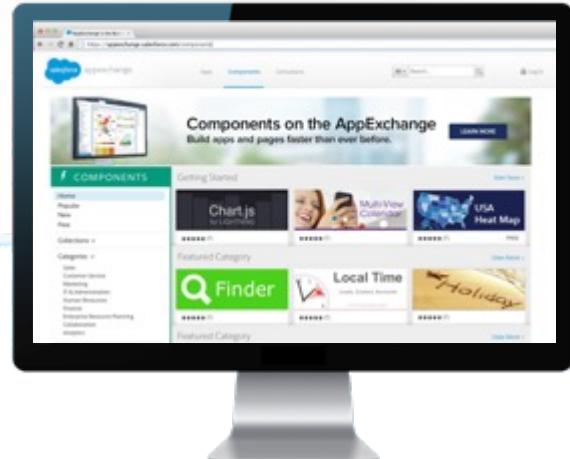
Lightning Components



Lightning App Builder



AppExchange for Components

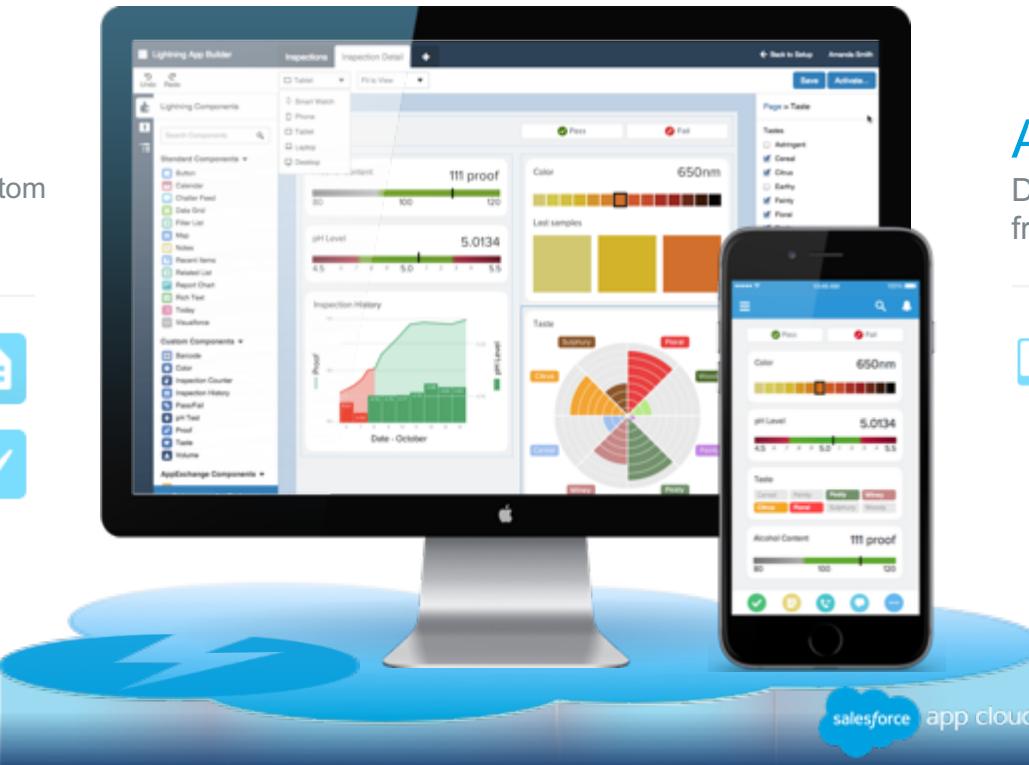


Empower Everyone with the Lightning App Builder

Now Anyone Can Build Apps for Every Device

Drag & Drop

Build with standard and custom Lightning Components



Any Device

Design apps for every screen from one canvas



Visualforce

- Framework to build custom user interfaces
- Hosted natively on Force.com
- Build streamlined UX
- Extend Salesforce.com
- Customize for different devices
- Leverage other web technologies



Visualforce

Visualforce Markup

- Visualforce tags
 - 80+ standard components
 - Custom components
- Include standard web technology
 - CSS
 - Javascript (jquery, extJs etc)
 - HTML
 - Flash
 - Or any other web-enabled code

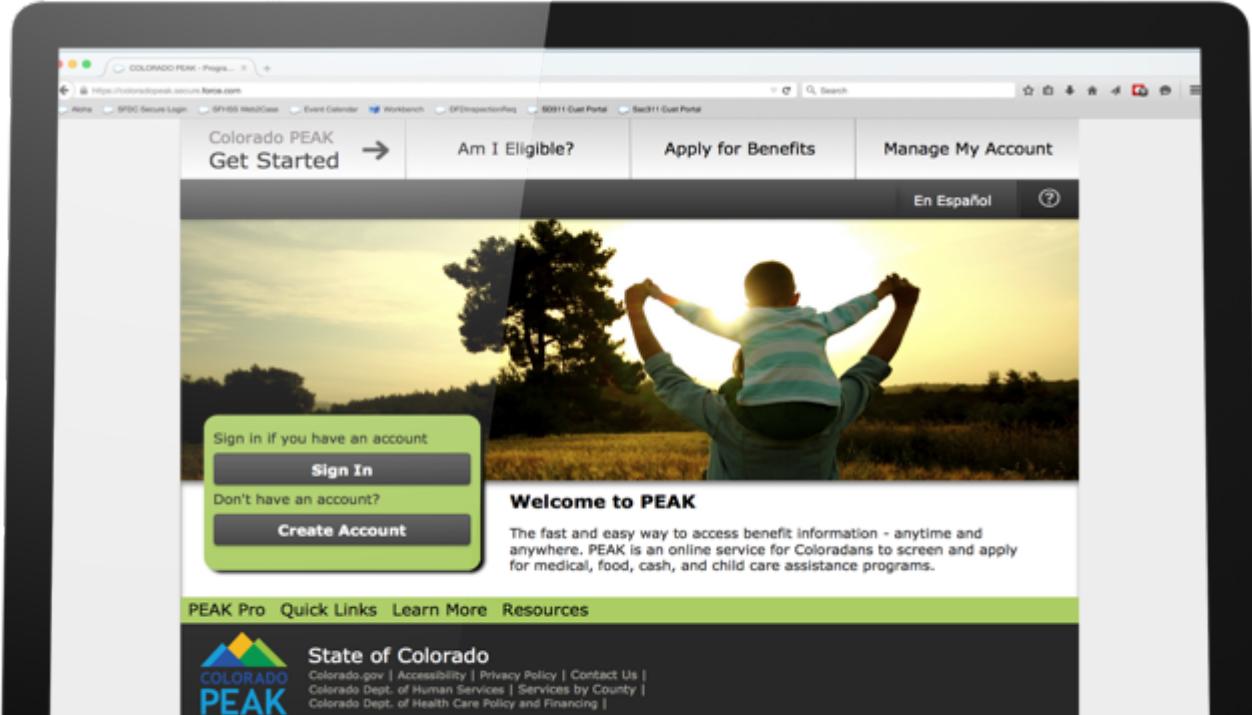


The screenshot shows a code editor window titled "CountSheet.page". The code is a Visualforce page definition. It includes an apex:page tag with attributes like "standardStylesheets=false", "showHeader=false", "sidebar=false", "standardController='Merchandise__c'", and "recordSetVar='products'". It also includes an apex:stylesheet tag pointing to a CSS file. The page body contains a style block defining a black font, white background, and centered margin for the entire page. Below this is an h1 tag for "Inventory Count Sheet". The main content is an apex:form containing an apex:dataTable with a value of products. The table has three columns: "Product" (headerValue="Product"), "Advertisement" (headerValue="Advertisement"), and "Inventory" (headerValue="Inventory"). Each column contains an apex:outputText for the item name and total inventory, and an apex:outputField for the physical count. The "Advertisement" column uses the escape="false" attribute. The "Inventory" column has a width of 150px. The code is numbered from 1 to 36.

```
<apex:page standardStylesheets="false" showHeader="false" sidebar="false" standardController="Merchandise__c" recordSetVar="products">
<apex:stylesheet value="{!URLFOR($Resource.styles, 'styles.css')}">
<style type="text/css">
body {
    line-height: 1;
    color: black;
    background: white;
    margin-left:auto;
    margin-right:auto;
    width:1300px;
}
</style>
<h1>Inventory Count Sheet</h1>
<apex:form >
<apex:dataTable value="{!products}" var="pitem"
    rowClasses="odd,even">
<apex:column headerValue="Product">
    <apex:outputText value="{!pitem.name}"><br/>
    <apex:outputField value="{!pitem.Total_Inventory__c}" />
</apex:column>
<apex:column headerValue="Advertisement">
    <apex:outputText value="{!pitem.Advertisement__c}" escape="false"/>
</apex:column>
<apex:column headerValue="Inventory">
    <apex:outputField value="{!pitem.Total_Inventory__c}" />
</apex:column>
<apex:column headerValue="Physical Count" width="150px">
    <apex:inputField value="{!pitem.Total_Inventory__c}" />
</apex:column>
</apex:dataTable>
</apex:form>

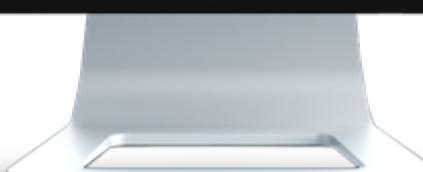
```

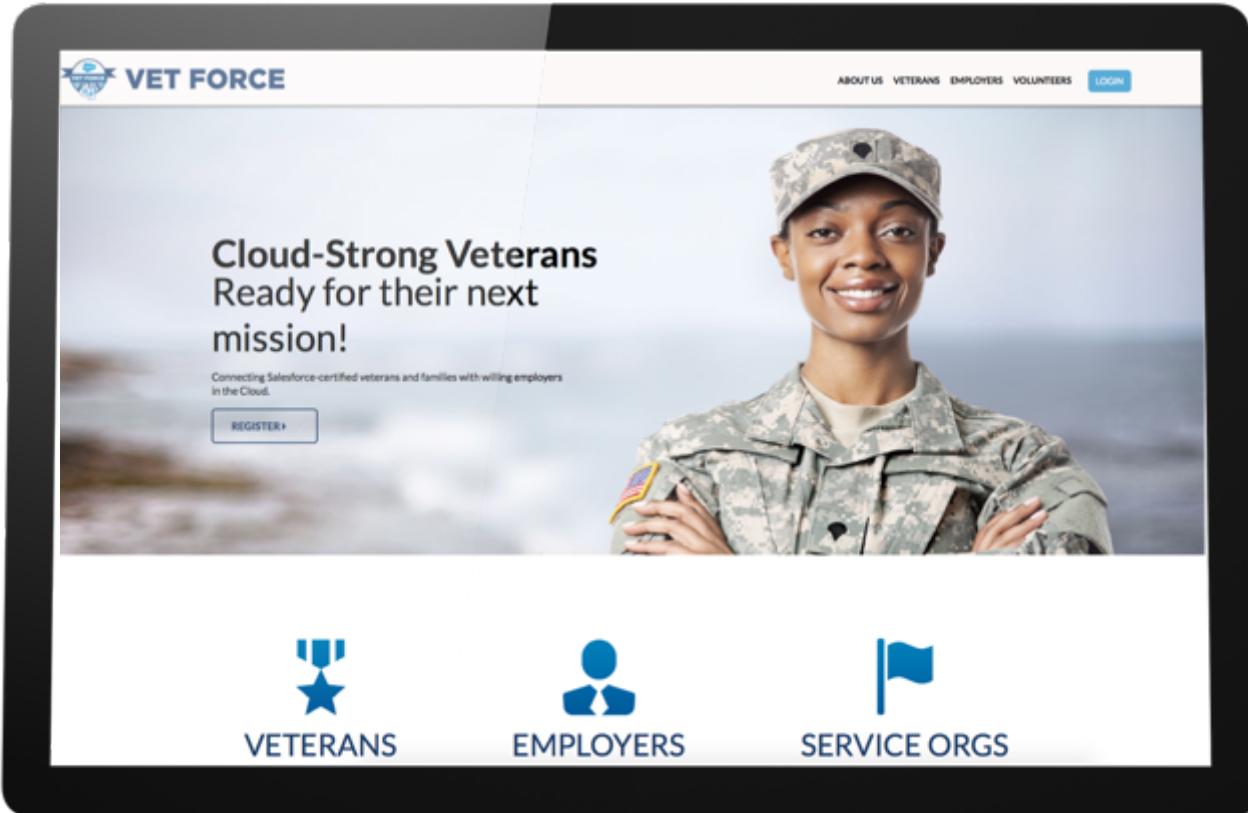
Line: 13 Column: 22 Visualforce Page Tab Size: 4 CSS: body



Example UI

State of Colorado PEAK





Example UI
<https://veterans.force.com/>





salesforce public sector
DEVELOPER WORKSHOP

Customize a User Interface



Overview: Customize a User Interface

- Create Views of Data
- Modify a Page Layout
- Enable Social Collaboration



Create Views

Create list views for frequently performed searches / queries

- Save list views for future use
- Filter on specific field or combinations of fields
- Specify which groups of users have access to the view
- Follow records and view related Chatter posts

The screenshot shows the Salesforce interface with the following details:

- Header:** Includes the Salesforce logo, a search bar labeled "Search Salesforce", and various navigation links like "Travel Approval", "Chatter", "Travel Approvals", "Departments", "Reports", and "Dashboards".
- Section Bar:** Shows a "TRAVEL APPROVALS" section with a "All" button.
- List View:** Displays a table with 50+ items, sorted by "Travel Approval #". The columns are: TRAVEL APPROVAL #, DEPARTMENT, CREATED BY, STATUS, TRIP START DATE, and TRIP END DATE. The data rows are:

1	TA-00001	Technology	Troy Hedges	Pending Approval	9/24/2017	9/30/2017
2	TA-00017	Division of Finance	Troy Hedges	Rejected	8/1/2016	8/3/2016
3	TA-00018	Office of General Counsel	Troy Hedges	Approved	7/10/2016	7/22/2016
4	TA-00019	Contract Management	Troy Hedges	Rejected	3/10/2016	3/10/2016
5	TA-00020	Audit Services	Troy Hedges	Rejected	5/5/2016	5/10/2016
- Actions:** A "LIST VIEW CONTROLS" menu is open on the right, containing options: New, Rename, Sharing Settings, Edit List Filters, Select Fields to Display, and Delete. The "Edit List Filters" option is highlighted with a red box.

Create Views (continued)

Creating a list view

Sharing Settings

Who sees this list view?

Only I can see this list view

All users can see this list view ⓘ

Cancel Save

Specify Visibility

Filters

Show me
All travel approvals

Matching all of these filters

Out-of-State equals True

Status not equal to Approved, Rejected

Add Filter Remove All

Add Filter Logic

Specify filters

Select Fields to Display

Available Fields	Visible Fields
Created By	Travel Approval #
Created By Alias	Department
Last Activity Date	Created Date
Last Modified By	Status
Last Modified By Alias	Destination State
Last Modified Date	Trip Start Date
Out-of-State	Trips End Date

Cancel Save

Select up to 15 Columns

What is a Page Layout?

A page layout controls the fields, sections, related lists and buttons that appear when users view or edit a record of data. You can modify an object's default page layout or create new ones and associate them to different profiles.

The screenshot shows the Salesforce Object Manager interface for creating a new page layout. A callout bubble points to the main configuration area where fields, actions, buttons, and related lists are selected and drag-and-dropped onto the layout. The layout is titled "Travel Approval Sample".

Fields, Actions, Buttons, Related Lists; Drag/Drop to Layout

Travel Approval Sample

Highlights Panel

Quick Actions in the Salesforce Classic Publisher

Salesforce1 and Lightning Experience Actions

Travel Approval Detail

Information (Header visible on edit only)

Travel Approval #	GLEN-2004-001234
Status	Sample Status
Total Expenses	\$123.45
Status Indicator	Sample Status Indicator

Owner Department

Trip Info

Purpose of Trip

Sample Purpose of Trip

Out-of-State

Custom Buttons

Standard Buttons

Edit Delete Clone Change Owner Change Record Type Sharing Submit for Approval



Social Collaboration via Chatter

Feed Tracking

Keep up with your critical projects, topics, and teams. Work together on case knowledge in a single location.

File Access

Secure, Social and Mobile file sharing puts files in the context of business processes.

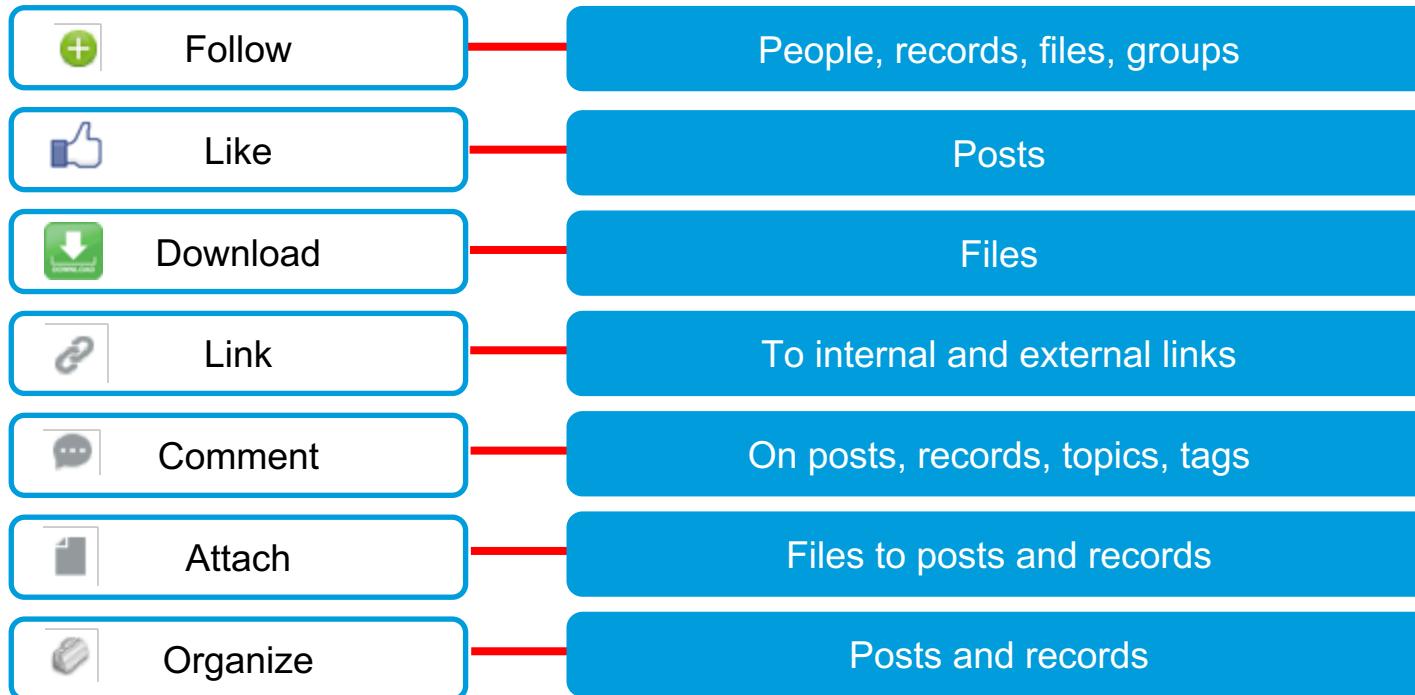
Action Bar

Create instant actions for any business process; create records, post to feed, add files, request approvals



What is Chatter?

Chatter lets you collaborate with fellow employees, partners and customers on files, records and groups. Chatter is automatically enabled in all orgs.





salesforce public sector
DEVELOPER WORKSHOP

Adding Application Logic
with Clicks, not Code



Overview: Add App Logic w Clicks, not Code

- Add a Validation Rule
- Add a Roll-up Summary Field
- Add a Formula Field to show status indicator image



What are Validation Rules?

Validation rules are used to conditionally require field values, format data

- Validation rules verify that the data a user enters in a record meets the standards you specify before the record is saved.
- A validation rule contains a formula or expression that evaluates the data in one or more fields and returns a value of True or False.
- Validation rules also include an error message to display to the user when the rule returns a value of True due to an invalid value.
- Error message can be displayed directly below field or at top of the page.
 - Multiple error messages may be displayed at one time

Line Item is added or Updated

Quantity__c <= 0

Error: “Line Item’s Quantity
Should Be Greater Than 0”

WHEN

Record is
inserted or updated

IF

Statement evaluates
to true

THEN

Block Insert/Update
Return error message



Validation Rule

Validation Rule Edit

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

Functions

-- All Function Category --

- ABS
- AND
- BEGINS
- BLANKVALUE
- BR
- CASE

ABS(number)
Returns the absolute value of a number, a number without its sign
[Help on this function](#)

Syntax for Rule

Specify your “Error” Message

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 [?](#)



What are Roll-up Summaries?

Roll-up Summary fields are read only formula fields that can display the sum, min, or max value or record count of a field in a related list

- For all custom master-detail relationships
- There is an option to include ALL records in the roll-up or just records that meet certain filter criteria that you define

Select Object to Summarize

Master Object	Invoice
Summarized Object	Line Items

Select Roll-Up Type

COUNT

SUM

MIN

MAX

Field to Aggregate: Line Item Total

Select Summarized Object

Select NUMERIC field to summarize

Filter Criteria

All records should be included in the calculation

Only records meeting certain criteria should be included in the calculation

Save Cancel

What are Formula Fields?

“Smart” custom fields that can be used to build business-specific calculations using simple wizards and an Excel-like formula language

- Can reference standard, custom, or other formula fields
- Can reference fields on related (cross) objects
- Can return a dynamic image based on logic

The screenshot shows the Salesforce Formula Builder interface. At the top, there are three input fields: 'Field Name' (Line_Item_Total), 'Description' (empty), and 'Help Text' (empty). Below these is a section titled 'Formula Options' with 'Formula Return Type' set to 'Currency' and 'Decimal Places' set to '2'. A note below says 'Enter your formula and click Check Syntax to check for errors. Click the Advanced Formula subtab to use additional fields, operators, and functions.' An example formula 'Gross Margin = Amount - Cost__c' is shown with a link to 'More Examples ...'. At the bottom, there are tabs for 'Simple Formula' (selected) and 'Advanced Formula', and buttons for 'Insert Field' and 'Insert Operator'. The formula entry area contains the text 'Line Item Total (Currency) = Unit_Price__c * Quantity__c'.



Useful Formula Fields Reference Guide

https://help.salesforce.com/help/pdfs/en/salesforce_useful_formula_fields.pdf

Bloomberg™ News Search

This formula creates a link to an account's ticker symbol on the Bloomberg website.

```
HYPERLINK(  
    "http://www.bloomberg.com/markets/symbolsearch?query="&TickerSymbol,  
    "Bloomberg News")
```

Google™ Search

This formula creates a link to a Google search site using the Account Name.

```
HYPERLINK(  
    "http://www.google.com/#q="&Name,  
    "Google")
```

Suggested Offers

This formula suggests a product based on the support history for a computer reseller. When the Problem custom field matches a field, the formula field returns a suggestion.

```
CASE(Problem__c,  
    "Memory", "Suggest new memory cards", "Hard Drive failure", "Suggest  
    new hard drive with tape backup",  
    "")
```

USEFUL FORMULA FIELDS

Summary
Provides examples of formula fields for various types of logic that you can use and modify for your own purposes.

Examples of Advanced Formula Fields

This document contains custom formula examples for the following topics. For details about using the functions included in these examples, see [Formula Operators and Functions](#) on page 37.

- Sample Account Management Formula
- Sample Case Management Formula
- Sample Contact Management Formula
- Sample Data Category Formula
- Sample Date Formula
- Sample Disounting Formula
- Sample Employee Services Formula
- Sample Expense Tracking Formula
- Sample Financial Reporting Formula
- Sample Image Link Formula
- Sample Lead Management Formula
- Sample Metrics Formula
- Sample Product Throughput Formula
- Sample Pricing Formula
- Sample Routing Calculations Formula

Sample Account Management Formulas

For details about using the functions included in these examples, see [Formula Operators and Functions](#) on page 37.

Account Rating

The formula evaluates Account Name, Billing Country, and Zipcode value of "US", "Memory" or "Tape".

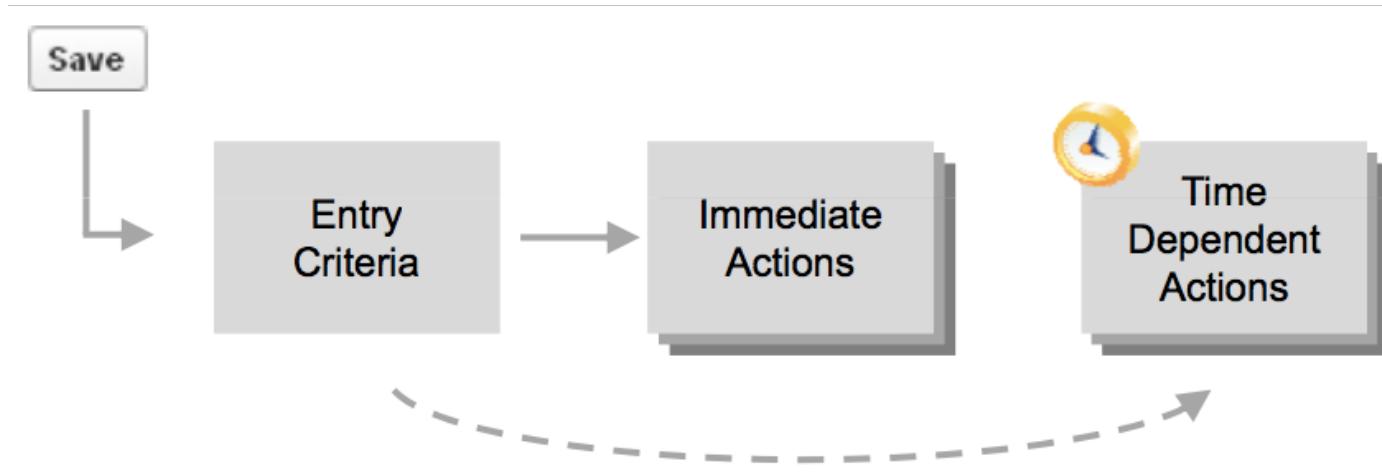
```
IF(AND(OR(BillingCountry = "US", AccountName = "Memory", ZipCode = "100-00000"), OR(AccountName = "Tape", ZipCode = "100-00000", ImageLink = "http://www.somesite.com/tape")))
```

Last updated: May 03, 2013



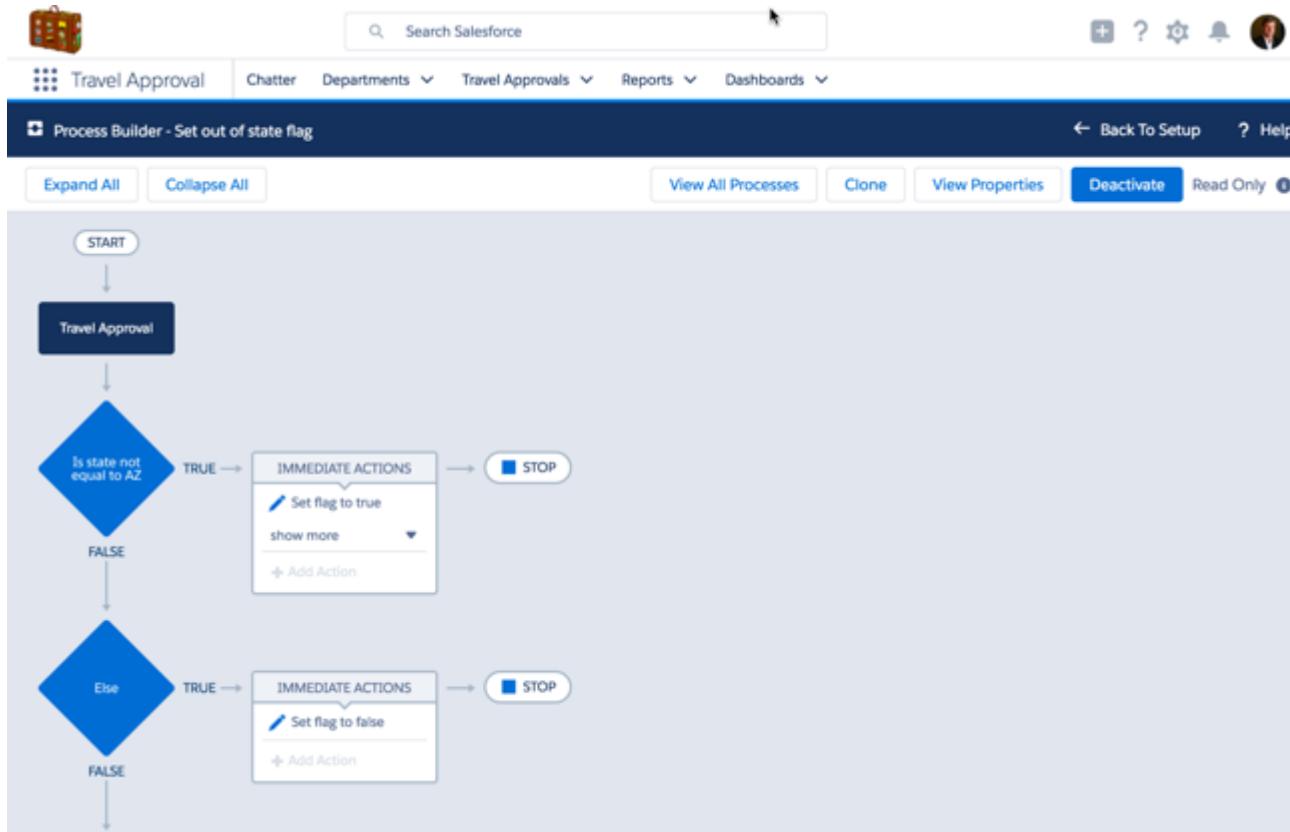
Workflow Rules

- Automate Business Processes
- Triggered on record creation or update
- Execute actions
 - Immediately and/or
 - Later - only if record still meets the entry criteria (Time-based Workflow)
 - Actions: Update Record, Send Email, Create Task, Send Outbound (SOAP) Message



Overview: Add App Logic w Clicks, not Code

Automate a Field Update using Workflow Process Builder



Workflow Process Builder

Visualize

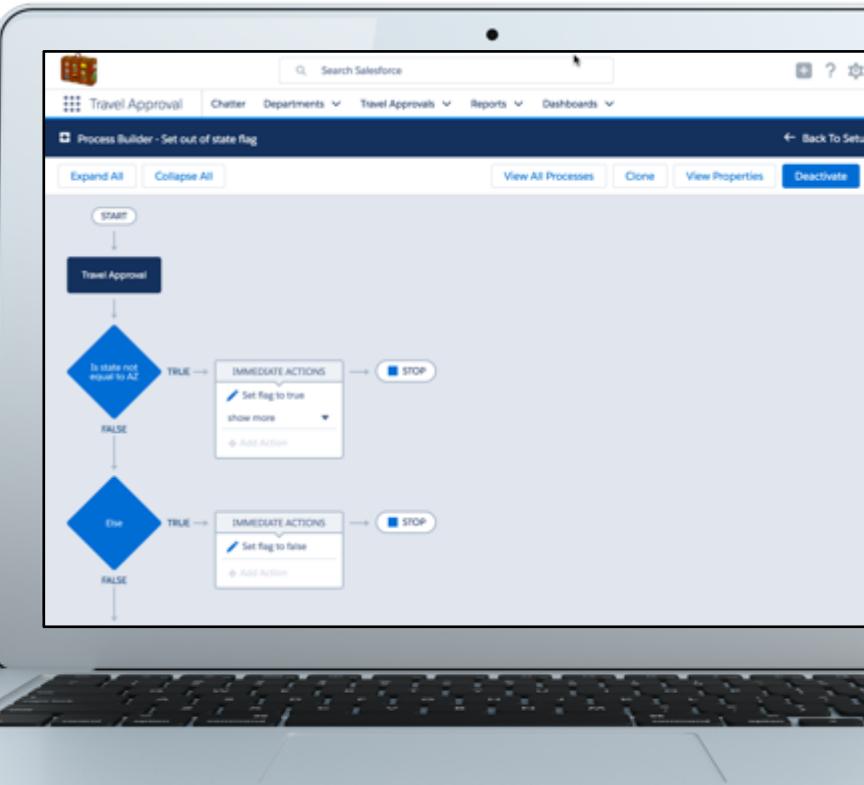
Visualize the entire process in one place to design and collaborate directly with lines of business owners

Easy to Use

Easily automate complex business processes with point-and-click tools

Event-driven Actions

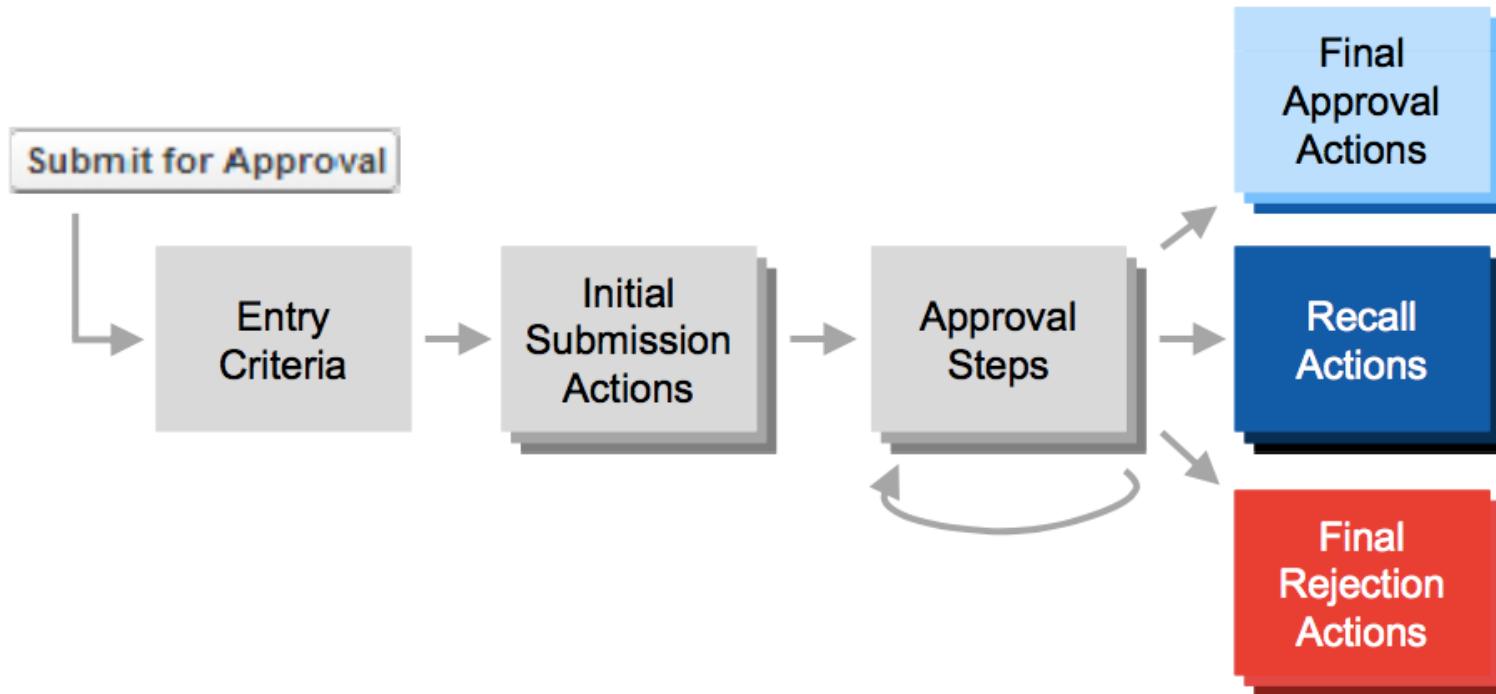
Automatically update or create new records, emails, and tasks or send data to an external system



salesforce app cloud

What is an Approval Process?

Approval processes are single or multi-step business processes that require end user authorization for record promotion



Overview: Add App Logic w Clicks, not Code

Create an Approval Process for travel requests

SETUP

Approval Processes

Create

Approval Processes

Travel Approval: Travel Approval Request

< Back to Approval Process List

Help for this Page

Process Definition Detail

Process Name	Travel Approval Request	Active	<input checked="" type="checkbox"/>
Unique Name	Travel_Approval_Request	Next Automated Approver Determined By	Manager or Record Submitter
Description			
Entry Criteria	Travel Approval: Total Expenses GREATER THAN 0		
Record Editability	Administrator ONLY	Allow Submitters to Recall Approval Requests	<input type="checkbox"/>
Approval Assignment Email Template			
Initial Submitters	Travel Approval Owner		
Created By	Michael Yeganeh, 1/24/2017 1:34 PM	Modified By	Michael Yeganeh, 1/24/2017 1:43 PM

Initial Submission Actions

Add Existing	Add New
--------------	---------

Action Type	Description
Record Lock	Lock the record from being edited

Approval Steps

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions Edit	1	Step 1			Manager	Final Rejection
Show Actions Edit	2	Travel Coordinator Approval		Travel Approval: Out-of-State EQUALS True	User: Michael Yeganeh	Final Rejection

Final Approval Actions

Add Existing	Add New
--------------	---------

salesforce



salesforce public sector
DEVELOPER WORKSHOP

Analyze Data with
Reports and Dashboards



Overview: Analyze Data with Reports and Dashboards

- Create a Report
- Create a Dashboard



Embedded Analytics

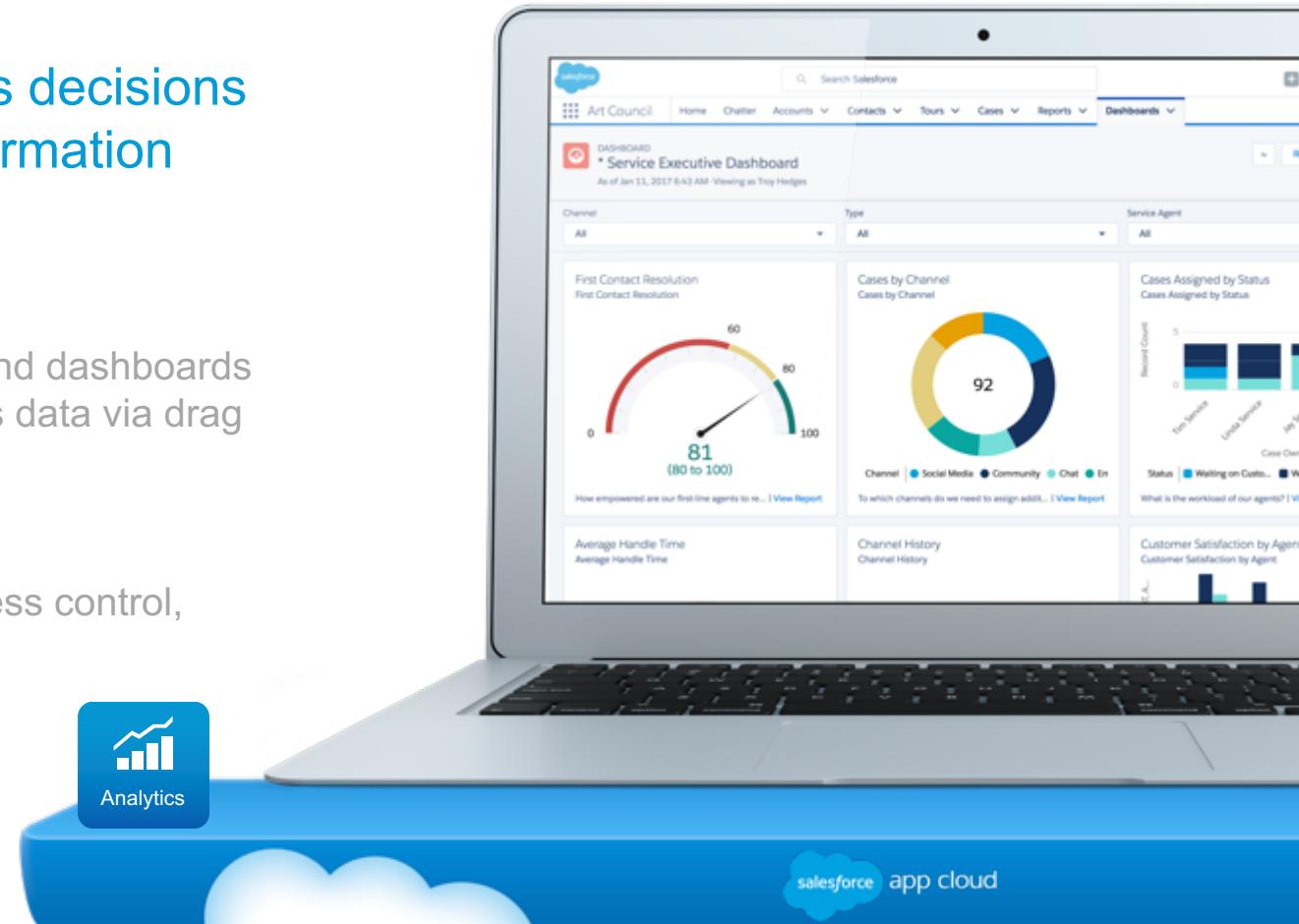
Make smarter business decisions
to drive service transformation

Personalized

Create personalized reports and dashboards
on your transactional business data via drag
& drop

Secure

Reporting data maintains access control,
based on roles and profiles



Salesforce Reports

Salesforce Reports are lists, summaries or matrices that allow you to aggregate and analyze your data in different ways

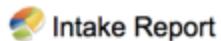


Table Report

Report Generation Status: Complete

Report Options:

Summarize information by:
--None--

Show My Intake

Time Frame

Date Field	Range
Date Occurred	Custom
From	To

Run Report Hide Details Customize Save As Printable View Export Details

Intake: Intake Id	Intake: Created Date	Reporter Type	Status	Sub-Category	Category
INT0002	5/31/2015	School Official	Investigation	Neglect	Child Abuse / Neglect
INT0003	5/31/2015	Clergy	New	Medical Neglect	Child Abuse / Neglect
INT0004	5/31/2015	School Personnel	Screening	Information Only	Information and/or Ref
INT0005	5/31/2015	Medical Personnel	Assessment	Baby Doe/Disabled Infant	Child Abuse / Neglect
INT0001	5/31/2015	-	-	-	-
INT0019	5/31/2015	Anonymous	Assessment	Emotional Maltreatment	Child Abuse / Neglect
INT0020	5/31/2015	Medical Personnel	Investigation	Physical Abuse	Child Abuse / Neglect
INT0021	5/31/2015	Citizen	Screening	Physical Abuse	Child Abuse / Neglect
INT0022	5/31/2015	Medical Personnel	Assessment	Physical Abuse Shaken Baby	Child Abuse / Neglect
INT0023	5/31/2015	Anonymous	Investigation	Medical Neglect	Child Abuse / Neglect
INT0024	5/31/2015	Legal Personnel	Screening	Information Only	Child Abuse / Neglect
INT0007	5/31/2015	Citizen	Disposition	Sexual Abuse	Child Abuse / Neglect
INT0008	5/31/2015	Anonymous	New	Physical Abuse Shaken Baby	Child Abuse / Neglect

Summary Report

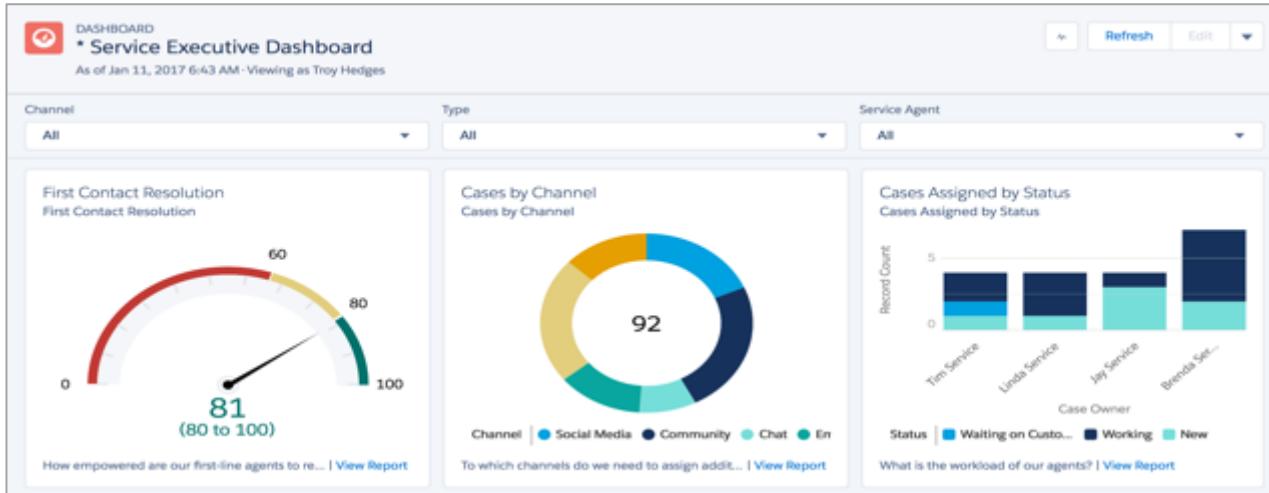
Opportunity Name	Amount	Close Date
<input type="checkbox"/> Stage: Prospecting (2 records)		
	USD 5,341,500.00	
Universal Motors - Laptops	USD 3,504,000.00	12/7/2010
Ferris Media - Laptops	USD 1,837,500.00	12/5/2010
<input type="checkbox"/> Stage: Qualification (2 records)		
	USD 4,561,250.00	
House Central - Laptops	USD 2,461,250.00	11/29/2010
Santek - Laptops	USD 2,100,000.00	11/28/2010
<input type="checkbox"/> Stage: Needs Analysis (2 records)		
	USD 6,400,000.00	
Starfish Publishing - Laptops	USD 3,650,000.00	11/20/2010
Firefly Insurance - Desktops	USD 2,750,000.00	11/18/2010
<input type="checkbox"/> Stage: Value Proposition (1 record)		
	USD 4,800,000.00	
ZiffCorp - Laptops	USD 4,800,000.00	11/1/2010
Grand Totals (7 records)		
	USD 21,102,750.00	



What is a Dashboard?

A dashboard is a visual representation of data from multiple reports, and:

- Comprises up to 20 components
- Displays data from custom source reports
- Can use Visualforce Pages to present data from other sources
- Has a “running user” to determine what data is visible
- Displays data as of the last time the dashboard was refreshed
- Can be scheduled to refresh and be automatically emailed





Closing Thoughts

4 million...and growing



success.Salesforce.com

4 million active community members



Customer Community

Partner Community

User Groups

Ask Questions

Post Ideas



The screenshot shows the main interface of the success.Salesforce.com website. At the top, there's a navigation bar with links for Answers, Help & Training, Dreamforce, Collaboration, Ideas, User Groups, More, and a search bar. Below the header, a banner reads "Welcome to the Community" with the tagline "Share. Learn. Join. Succeed." A grid of user profile pictures follows. A central section features a "FIND ANSWERS" area with a "Post your questions to the Community" button and a "Browse official documentation" section with a "Browse Help & Training" button. To the right, there's a "COMMUNITY LEADERS" section with a grid of user profiles, a "DISCUSS" section with a "209 User Groups" callout, and a "DREAMFORCE" section with stats for apps and installs. A sidebar on the left contains a "User Groups" section with a "Michael Smith" entry and a "DREAMFORCE" section with stats for apps and installs.

Become a Salesforce Superhero

Professional Certifications
from Salesforce University



Salesforce
Administrator



Salesforce
Advanced Adminis-
trator



Force.com
Developer



Force.com
Advanced Devel-
oper



Salesforce
Service Cloud
Consultant



Salesforce
Sales Cloud
Consultant



Salesforce
Technical Archi-
tect

A large, semi-transparent blue cloud shape containing the word "salesforce" in white, lowercase, sans-serif font.

salesforce Thank you

