Apex Triggers

1.Get started Apex Triggers -AccountAddressTrigger

```
trigger AccountAddressTrigger on Account (before insert, before update) {

   for(Account a: Trigger.New){

      if(a.Match_Billing_Address__c == true && a.BillingPostalCode!= null){

         a.ShippingPostalCode=a.BillingPostalCode;

      }

   }

}
```

2.Bulk Apex Triggers -ClosedOpportunityTrigger

```
rigger ClosedOpportunityTrigger on Opportunity (after insert, after update) {

   List<Task> taskList = new List<Task>();

   for(Opportunity opp : [SELECT Id, StageName FROM Opportunity WHERE StageName='Closed
Won' AND Id IN : Trigger.New]){

      taskList.add(new Task(Subject='Follow Up Test Task', WhatId = opp.Id));

   }

   if(taskList.size()>0){
      insert tasklist;
   }
}
```

Asynchronous Apex

Use Future Methods--AccountProcessor

```
public class AccountProcessor {
   @Future
   public static void countContacts(List<Id> accountIds){
      Map<Id,List<Contact>> accContacts = new Map<Id,List<Contact>>();
      List<Account> accsForUpdate = new List<Account>();
      if(accountIds != null){
         For(Account acc : [SELECT id,(SELECT id,Name FROM Contacts)FROM Account
where id in: accountIds]){
              accContacts.put(acc.Id,acc.contacts);
          }
         for(Id key : accContacts.keySet()){
            Account a = New Account(id = key);
            a.Number_of_Contacts__c = accContacts.get(key).size();
            accsForUpdate.add(a);
         }
      update accsForUpdate;
      }
   }
}
```

AccountProcessor Test

```
@isTest
public class AccountProcessorTest {
   @testSetup
   static void setupAccount(){
   List<Account> accounts =
RandomAccountContactFactory.generateRandomAccounts(1);
   insert accounts;
   List<Contact> contacts =
RandomAccountContactFactory.generateRandomContacts(3, 'TestAP' ,
```

```
accounts.get(0).id);
   insert contacts;
   }
 @isTest
    static void testAccountProcessor(){
    List<id> accIds = new List<id>();
for(Account a : [select id from Account]){
          accIds.add(a.id);
       }
        Test.startTest();
        AccountProcessor.countContacts(accIds);
        Test.stopTest();
    }
}
```

Use Batch Apex--LeadProcessor

```
global class LeadProcessor implements
Database.Batchable<sObject>, Database.Stateful {
   // instance member to retain state across transactions
   global Integer recordsProcessed = 0;
   global Database.QueryLocator start(Database.BatchableContext bc) {
      return Database.getQueryLocator('SELECT Id, LeadSource FROM Lead');
   }
   global void execute(Database.BatchableContext bc, List<Lead> scope){
      // process each batch of records
      List<Lead> leads = new List<Lead>();
      for (Lead lead : scope) {
            lead.LeadSource = 'Dreamforce';
            // increment the instance member counter
            recordsProcessed = recordsProcessed + 1;
      }
      update leads;
   }
```

```
    global void finish(Database.BatchableContext bc){
        System.debug(recordsProcessed + ' records processed. Shazam!');
    }
}
```

LeadProcessor Test

```
@isTest
public class LeadProcessorTest {
 @testSetup
    static void setup() {
        List<Lead> leads = new List<Lead>();
        // insert 200 leads
        for (Integer i=0;i<200;i++) {
            leads.add(new Lead(LastName='Lead '+i,
                Company='Lead', Status='Open - Not Contacted'));
        }
        insert leads;
    }
    static testmethod void test() {
        Test.startTest();
        LeadProcessor lp = new LeadProcessor();
        Id batchId = Database.executeBatch(lp, 200);
        Test.stopTest();
        // after the testing stops, assert records were updated properly
        System.assertEquals(200, [select count() from lead where LeadSource =
'Dreamforce']);
    }
}
```

Control Process with Queueable Apex --- AddPrimaryContact

```
public class AddPrimaryContact implements Queueable {
    public contact c;
    public String state;
    public AddPrimaryContact(Contact c, String state) {
```

```
        this.c = c;
        this.state = state;
    }
    public void execute(QueueableContext qc) {
        system.debug('this.c = '+this.c+' this.state = '+this.state);
        List<Account> acc_lst = new List<account>([select id, name, BillingState from
account where account.BillingState = :this.state limit 200]);
        List<contact> c_lst = new List<contact>();
        for(account a: acc_lst) {
            contact c = new contact();
            c = this.c.clone(false, false, false, false);
            c.AccountId = a.Id;
            c_lst.add(c);
        }
        insert c_lst;
    }
}
```

AddPrimaryContact Test

```
@IsTest
public class AddPrimaryContactTest {
    @IsTest
    public static void testing() {
        List<account> acc_lst = new List<account>();
        for (Integer i=0; i<50;i++) {
            account a = new account(name=string.valueOf(i),billingstate='NY');
            system.debug('account a = '+a);
            acc_lst.add(a);
        }
        for (Integer i=0; i<50;i++) {
            account a = new account(name=string.valueOf(50+i),billingstate='CA');
            system.debug('account a = '+a);
            acc_lst.add(a);
        }
```

```
        insert acc_lst;
        Test.startTest();
        contact c = new contact(lastname='alex');
        AddPrimaryContact apc = new AddPrimaryContact(c,'CA');
        system.debug('apc = '+apc);
        System.enqueueJob(apc);
        Test.stopTest();
        List<contact> c_lst = new List<contact>([select id from contact]);
        Integer size = c_lst.size();
        system.assertEquals(50, size);
    }
}
```

Schedule Jobs Using The Apex Scheduler Unit--DailyLeadProcessor

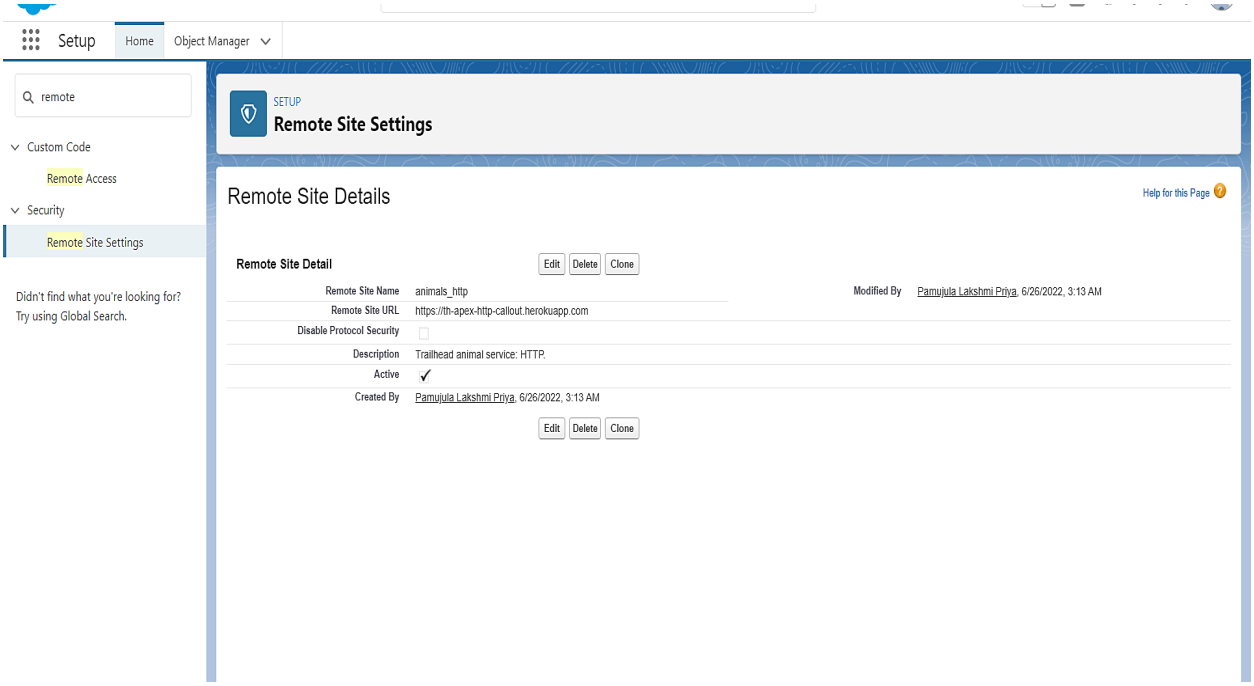
```
global class DailyLeadProcessor implements Schedulable {
    global void execute(SchedulableContext ctx) {
        List<Lead> lList = [Select Id, LeadSource from Lead where LeadSource = null];
        if(!lList.isEmpty()) {
for(Lead l: lList) {
l.LeadSource = 'Dreamforce';
}
update lList;
}
    }
}
```

DailyLeadProcessorTest

```
isTest
private class DailyLeadProcessorTest {
static testMethod void testDailyLeadProcessor() {
String CRON_EXP = '0 0 1 * * ?';
List<Lead> lList = new List<Lead>();
```

```
    for (Integer i = 0; i < 200; i++) {
lList.add(new Lead(LastName='Dreamforce'+i, Company='Test1
Inc.', Status='Open - Not Contacted'));
}
insert lList;
Test.startTest();
String jobId = System.schedule('DailyLeadProcessor', CRON_EXP, new
DailyLeadProcessor());
}
}
```

Apex Integration Services-- Apex Integration Overview



Apex REST Callouts--AnimalLocator

AnimalLocator

```
public class AnimalLocator{
```

```
  public static String getAnimalNameById(Integer x){

      Http http = new Http();

      HttpRequest req = new HttpRequest();

      req.setEndpoint('https://th-apex-http-callout.herokuapp.com/animals/' + x);

      req.setMethod('GET');

      Map<String, Object> animal= new Map<String, Object>();

      HttpResponse res = http.send(req);

         if (res.getStatusCode() == 200) {

      Map<String, Object> results = (Map<String, Object>)JSON.deserializeUntyped(res.getBody());

    animal = (Map<String, Object>) results.get('animal');

      }

return (String)animal.get('name');

  }

}
```

AnimalLocatorTest

```
@isTest

private class AnimalLocatorTest{

  @isTest static void AnimalLocatorMock1() {

      Test.setMock(HttpCalloutMock.class, new AnimalLocatorMock());

      string result = AnimalLocator.getAnimalNameById(3);
```

```
        String expectedResult = 'chicken';

        System.assertEquals(result,expectedResult );

    }

}
```

AnimalLocatorMock

```
@isTest

global class AnimalLocatorMock implements HttpCalloutMock {

    // Implement this interface method

    global HTTPResponse respond(HTTPRequest request) {

        // Create a fake response

        HttpResponse response = new HttpResponse();

        response.setHeader('Content-Type', 'application/json');

        response.setBody('{"animals": ["majestic badger", "fluffy bunny", "scary bear", "chicken", "mighty moose"]}');

        response.setStatusCode(200);

        return response;

    }

}
```

Apex SOAP callouts--ParkService

```
public class ParkService {
public class byCountryResponse {
```

```
public String[] return_x;
private String[] return_x_type_info = new String[]{'return','http://parks.services/',null,'0','-
1','false'};
private String[] apex_schema_type_info = new String[]{'http://parks.services/','false','false'};
private String[] field_order_type_info = new String[]{'return_x'};
}
public class byCountry {
public String arg0;
private String[] arg0_type_info = new String[]{'arg0','http://parks.services/',null,'0','1','false'};
private String[] apex_schema_type_info = new String[]{'http://parks.services/','false','false'};
private String[] field_order_type_info = new String[]{'arg0'};
}
public class ParksImplPort {
public String endpoint_x = 'https://th-apex-soap-service.herokuapp.com/service/parks';
public Map<String,String> inputHttpHeaders_x;
public Map<String,String> outputHttpHeaders_x;
public String clientCertName_x;
public String clientCert_x;
public String clientCertPasswd_x;
public Integer timeout_x;
private String[] ns_map_type_info = new String[]{'http://parks.services/', 'ParkService'};
public String[] byCountry(String arg0) {
ParkService.byCountry request_x = new ParkService.byCountry();
request_x.arg0 = arg0;
ParkService.byCountryResponse response_x;
Map<String, ParkService.byCountryResponse> response_map_x = new Map<String,
ParkService.byCountryResponse>();
response_map_x.put('response_x', response_x);
WebServiceCallout.invoke(
this,
request_x,
response_map_x,
new String[]{endpoint_x,
'',
'http://parks.services/',
'byCountry',
'http://parks.services/',
'byCountryResponse',
'ParkService.byCountryResponse'}
```

```
);
response_x = response_map_x.get('response_x');
return response_x.return_x;
}
}
}
```

ParkServiceMock

```
@isTest
global class ParkServiceMock implements WebServiceMock {
global void doInvoke(
Object stub,
Object request,
Map<String, Object> response,
String endpoint,
String soapAction,
String requestName,
String responseNS,
String responseName,
String responseType) {
ParkService.byCountryResponse response_x =
new ParkService.byCountryResponse();
response_x.return_x = new List < String > {'a', 'b'};
response.put('response_x', response_x);
}
}
```

ParkLocator

```
public class ParkLocator {
public static List < String > country(String Country) {
ParkService.ParksImplPort obj =
new ParkService.ParksImplPort();
return obj.byCountry(Country);
}
}
```

ParkLocator Test

```
@isTest
```

```
private class ParkLocatorTest {
@isTest static void testCallout() {
Test.setMock(WebServiceMock.class, new ParkServiceMock());
List < String > result = ParkLocator.country('Test');
}
}
```

Apex Web Services---AccountManager

```
@RestResource(urlMapping='/Accounts/*/contacts')
global class AccountManager {
@HttpGet
global static Account getAccount() {
RestRequest req = RestContext.request;
String accId = req.requestURI.substringBetween('Accounts/', '/contacts');
Account acc = [SELECT Id, Name, (SELECT Id, Name FROM Contacts)
FROM Account WHERE Id = :accId];
return acc;
}
}
```

AccountManager Test

```
@isTest
private class AccountManagerTest {
private static testMethod void getAccountTest1() {
Id recordId = createTestRecord();
// Set up a test request
RestRequest request = new RestRequest();
request.requestUri = 'https://na1.salesforce.com/services/apexrest/Accounts/'+
recordId +'/contacts' ;
request.httpMethod = 'GET';
RestContext.request = request;
// Call the method to test
Account thisAccount = AccountManager.getAccount();
// Verify results
System.assert(thisAccount != null);
System.assertEquals('Test record', thisAccount.Name);
}
```

```
// Helper method
static Id createTestRecord() {
// Create test record
Account TestAcc = new Account(
Name='Test record');
insert TestAcc;
Contact TestCon= new Contact(
LastName='Test',
AccountId = TestAcc.id);
return TestAcc.Id;
}
}
```

Apex Testing--- Get Started with Apex Unit Tests

VerifyDate-

```
public class VerifyDate {
//method to handle potential checks against two dates
public
static Date CheckDates(Date date1, Date date2) {
//if date2 is within the next 30 days of date1, use date2. Otherwise use the end of the month
if(DateWithin30Days(date1,date2)) {
return date2;
} else {
return SetEndOfMonthDate(date1);
}
}
//method to check if date2 is within the next 30 days of date1
@TestVisible private static Boolean DateWithin30Days(Date date1, Date date2) {
//check for date2 being in the past
if(
date2 < date1) { return false; }
//check that date2 is within (>=) 30 days of date1
Date
date30Days = date1.addDays(30); //create a date 30 days away from date1
if( date2 >= date30Days ) { return false; }
else { return true; }
}
```

```
//method to return the end of the month of a given date
@TestVisible private static Date SetEndOfMonthDate(Date date1) {
Integer totalDays = Date.daysInMonth(date1.year(), date1.month());
Date lastDay = Date.newInstance(date1.year(), date1.month(), totalDays);
return lastDay;
}
}
```

Test VerifyDate

```
@isTest
private class TestVerifyDate{
@isTest static void Test_CheckDates_case1(){
Date D=VerifyDate.CheckDates(date.parse('01/01/2020'),date.parse('01/05/2020'));
System.assertEquals(date.parse('01/05/2020'),D);
}
@isTest static void Test_CheckDates_case2(){
Date D=VerifyDate.CheckDates(date.parse('01/01/2020'),date.parse('05/05/2020'));
System.assertEquals(date.parse('01/31/2020'),D);
}
@isTest static void Test_DateWithin30Days_casel(){
Boolean
flag=VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('12/30/2019'));
System.assertEquals(false,flag);
}
@isTest static void Test_DateWithin30Days_case2(){
Boolean flag =
VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('02/02/2019'));
System.assertEquals(false,flag);
}
@isTest static void Test_DateWithin30Days_case3(){
Boolean flag=VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('01/15/2020'));
System.assertEquals(true,flag);
}
@isTest static void Test_SetEndOfMonthDate(){
Date returndate=VerifyDate.SetEndOfMonthDate(date.parse('01/01/2020'));
}
}
```

Test Apex Triggers Units

RestrictContactByName

```
trigger RestrictContactByName on Contact (before insert, before update) {
//check contacts prior to insert or update for invalid data
For
(Contact c : Trigger.New) {
if(c.LastName == 'INVALIDNAME') {
//invalidname is invalid
c.AddError('The Last Name '"+c.LastName+"' is not allowed for DML');
}
}
}
```

TestRestrictContactByName

```
@isTest
public class TestRestrictContactByName {
@isTest static void Test_insertupdateContact() {
Contact cnt=new Contact();
cnt.LastName='INVALIDNAME';
Test.startTest();
Database.SaveResult result = Database.insert(cnt,false);
Test.stopTest();
System.assert(!result.isSuccess());
System.assert(result.getErrors().size()>0);
System.assertEquals('The Last Name"INVALIDNAME" is not allowed for
DML',result.getErrors()[0].getMessage());
}
}
```

Create Test Data for Apex Tests Unit

```
RandomAccountContactFactorypublic class RandomAccountContactFactory {
public static List<Contact> generateRandomContacts (Integer numContacts, String
lastName,Id accId){
List<Contact> contacts = new List<Contact>();
for(integer i = 0; i<numContacts; i++){
Contact c = new Contact();
c.FirstName = 'Trail' + i;
```

```
c.LastName = lastName + i;
c.AccountId = accId;
contacts.add(c);
}
return contacts;
}
public static List<Account> generateRandomAccounts (Integer numAccounts){
List<Account> accounts = new List<Account>();
for(integer i = 0; i<numAccounts; i++){
Account a = new Account();
a.Name = 'Test' + i;
accounts.add(a);
}
return accounts;
}
}
```

APEX SPICALIST

MaintenanceRequest

```
trigger MaintenanceRequest on Case (before update, after update) {
if(Trigger.isUpdate && Trigger.isAfter){
MaintenanceRequestHelper.updateWorkOrders(Trigger.New, Trigger.OldMap);
}
}
```

MaintenanceRequestHelper

```
public with sharing class MaintenanceRequestHelper {
public static void updateworkOrders(List<Case> updWorkOrders, Map<Id,Case>
nonUpdCaseMap) {
Set<Id> validIds = new Set<Id>();
For (Case c : updWorkOrders){
if (nonUpdCaseMap.get(c.Id).Status != 'Closed' && c.Status == 'Closed'){
```

```
if (c.Type == 'Repair' || c.Type == 'Routine Maintenance'){
validIds.add(c.Id);
}
}
}
//When an existing maintenance request of type Repair or Routine Maintenance is
closed,
//create a new maintenance request for a future routine checkup.
if (!validIds.isEmpty()){
Map<Id,Case> closedCases = new Map<Id,Case>([SELECT Id, Vehicle__c, Equipment__c,
Equipment__r.Maintenance_Cycle__c,
(SELECT Id,Equipment__c,Quantity__c FROM
Equipment_Maintenance_Items__r)
FROM Case WHERE Id IN :validIds]);
Map<Id,Decimal> maintenanceCycles = new Map<ID,Decimal>();
//calculate the maintenance request due dates by using the maintenance cycle defined
on the related equipment records.
AggregateResult[] results = [SELECT Maintenance_Request__c,
MIN(Equipment__r.Maintenance_Cycle__c)cycle
FROM Equipment_Maintenance_Item__c
WHERE Maintenance_Request__c IN :ValidIds GROUP BY
Maintenance_Request__c];
for (AggregateResult ar : results){
maintenanceCycles.put((Id) ar.get('Maintenance_Request__c'), (Decimal)
ar.get('cycle'));
}
List<Case> newCases = new List<Case>();
for(Case cc : closedCases.values()){
Case nc = new Case (
ParentId = cc.Id,
Status = 'New',
Subject = 'Routine Maintenance',
Type = 'Routine Maintenance',
Vehicle__c = cc.Vehicle__c,
```

```
Equipment__c =cc.Equipment__c,
Origin = 'Web',
Date_Reported__c = Date.Today()
);
//If multiple pieces of equipment are used in the maintenance request,
//define the due date by applying the shortest maintenance cycle to today's date.
//If (maintenanceCycles.containskey(cc.Id)){
nc.Date_Due__c = Date.today().addDays((Integer) maintenanceCycles.get(cc.Id));
//} else {
// nc.Date_Due__c = Date.today().addDays((Integer)
cc.Equipment__r.maintenance_Cycle__c);
//}
newCases.add(nc);
}
```

WarehouseCalloutService

```
public with sharing class WarehouseCalloutService implements Queueable {
private static final String WAREHOUSE_URL = 'https://th-
superbadgeapex.herokuapp.com/equipment';
//Write a class that makes a REST callout to an external warehouse system to get a list
of
equipment that needs to be updated.
//The callout's JSON response returns the equipment records that you upsert in
Salesforce.
@future(callout=true)
public static void runWarehouseEquipmentSync(){
System.debug('go into runWarehouseEquipmentSync');
Http http = new Http();
HttpRequest request = new HttpRequest();
request.setEndpoint(WAREHOUSE_URL);
request.setMethod('GET');
HttpResponse response = http.send(request);
List<Product2> product2List = new List<Product2>();
System.debug(response.getStatusCode());
```

```
if (response.getStatusCode() == 200){
List<Object> jsonResponse =
(List<Object>)JSON.deserializeUntyped(response.getBody());
System.debug(response.getBody())
//class maps the following fields:
//warehouse SKU will be external ID for identifying which equipment records to update
within Salesforce
for (Object jR : jsonResponse){
Map<String,Object> mapJson = (Map<String,Object>)jR;
Product2 product2 = new Product2();
//replacement part (always true),
product2.Replacement_Part__c = (Boolean) mapJson.get('replacement');
//cost
product2.Cost__c = (Integer) mapJson.get('cost');
//current inventory
product2.Current_Inventory__c = (Double) mapJson.get('quantity');
//lifespan
product2.Lifespan_Months__c = (Integer) mapJson.get('lifespan');
//maintenance cycle
product2.Maintenance_Cycle__c = (Integer) mapJson.get('maintenanceperiod');
//warehouse SKU
product2.Warehouse_SKU__c = (String) mapJson.get('sku');
product2.Name = (String) mapJson.get('name');
product2.ProductCode = (String) mapJson.get('_id');
product2List.add(product2);
}
if (product2List.size() > 0){
upsert product2List;
System.debug('Your equipment was synced with the warehouse one');
}
}
}
public static void execute (QueueableContext context){
System.debug('start runWarehouseEquipmentSync');
```

```
runWarehouseEquipmentSync();
System.debug('end runWarehouseEquipmentSync');
}
}
```

WarehouseCalloutServiceTest

```
@IsTest
private class WarehouseCalloutServiceTest {
// implement your mock callout test here
@isTest
static void testWarehouseCallout() {
test.startTest();
test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
WarehouseCalloutService.execute(null);
test.stopTest();
List<Product2> product2List = new List<Product2>();
product2List = [SELECT ProductCode FROM Product2];
System.assertEquals(3, product2List.size());
System.assertEquals('55d66226726b611100aaf741', product2List.get(0).ProductCode);
System.assertEquals('55d66226726b611100aaf742', product2List.get(1).ProductCode);
System.assertEquals('55d66226726b611100aaf743', product2List.get(2).ProductCode);
}
}
```

WarehouseSyncSchedule

```
global class WarehouseSyncSchedule implements Schedulable {
global void execute(SchedulableContext ctx) {
WarehouseCalloutService.runWarehouseEquipmentSync();
}
}
```

WarehouseSyncScheduleTest

```
@isTest
public class WarehouseSyncScheduleTest {
@isTest static void WarehousescheduleTest(){
```

```
String scheduleTime = '00 00 01 * * ?';
Test.startTest();
Test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
String jobID=System.schedule('Warehouse Time To Schedule to Test', scheduleTime,
new
WarehouseSyncSchedule());
Test.stopTest();
//Contains schedule information for a scheduled job. CronTrigger is similar to a cron job
on
UNIX systems.
// This object is available in API version 17.0 and later.
CronTrigger a=[SELECT Id FROM CronTrigger where NextFireTime > today];
System.assertEquals(jobID, a.Id,'Schedule ');
}
}
```

MaintenanceRequestHelperTest

```
@isTest
public with sharing class MaintenanceRequestHelperTest {
// createVehicle
private static Vehicle__c createVehicle(){
Vehicle__c vehicle = new Vehicle__C(name = 'Testing Vehicle');
return vehicle;
}
// createEquipment
private static Product2 createEquipment(){
product2 equipment = new product2(name = 'Testing equipment',
lifespan_months__c = 10,
maintenance_cycle__c = 10,
replacement_part__c = true);
return equipment;
}
// createMaintenanceRequest
private static Case createMaintenanceRequest(id vehicleId, id equipmentId){
```

```
case cse = new case(Type='Repair',
Status='New',
Origin='Web',
Subject='Testing subject',
Equipment__c=equipmentId,
Vehicle__c=vehicleId);
return cse;
}
// createEquipmentMaintenanceItem
private static Equipment_Maintenance_Item__c createEquipmentMaintenanceItem(id
equipmentId,id requestId){
Equipment_Maintenance_Item__c equipmentMaintenanceItem = new
Equipment_Maintenance_Item__c(
Equipment__c = equipmentId,
Maintenance_Request__c = requestId);
return equipmentMaintenanceItem;
}
@isTest
private static void testPositive(){
Vehicle__c vehicle = createVehicle();
insert vehicle;
id vehicleId = vehicle.Id;
Product2 equipment = createEquipment();
insert equipment;
id equipmentId = equipment.Id;
case createdCase = createMaintenanceRequest(vehicleId,equipmentId);
insert createdCase;
Equipment_Maintenance_Item__c equipmentMaintenanceItem =
createEquipmentMaintenanceItem(equipmentId,createdCase.id);
insert equipmentMaintenanceItem;
test.startTest();
createdCase.status = 'Closed';
update createdCase;
test.stopTest();
```

```
Case newCase = [Select id,
subject,
type,
Equipment__c,
Date_Reported__c,
Vehicle__c,
Date_Due__c
from case
where status ='New'];
Equipment_Maintenance_Item__c workPart = [select id
from Equipment_Maintenance_Item__c
where Maintenance_Request__c =:newCase.Id];
list<case> allCase = [select id from case];
system.assert(allCase.size() == 2);
system.assert(newCase != null);
system.assert(newCase.Subject != null);
system.assertEquals(newCase.Type, 'Routine Maintenance');
SYSTEM.assertEquals(newCase.Equipment__c, equipmentId);
SYSTEM.assertEquals(newCase.Vehicle__c, vehicleId);
SYSTEM.assertEquals(newCase.Date_Reported__c, system.today());
}
@isTest
private static void testNegative(){
Vehicle__C vehicle = createVehicle();
insert vehicle;
id vehicleId = vehicle.Id;
product2 equipment = createEquipment();
insert equipment;
id equipmentId = equipment.Id;
case createdCase = createMaintenanceRequest(vehicleId,equipmentId);
insert createdCase;
Equipment_Maintenance_Item__c workP =
createEquipmentMaintenanceItem(equipmentId,
createdCase.Id);
```

```
insert workP;
test.startTest();
createdCase.Status = 'Working';
update createdCase;
test.stopTest();
list<case> allCase = [select id from case];
Equipment_Maintenance_Item__c equipmentMaintenanceItem = [select id
from Equipment_Maintenance_Item__c
where Maintenance_Request__c = :createdCase.Id];
system.assert(equipmentMaintenanceItem != null);
system.assert(allCase.size() == 1);
}
@isTest
private static void testBulk(){
list<Vehicle__C> vehicleList = new list<Vehicle__C>();
list<Product2> equipmentList = new list<Product2>();
list<Equipment_Maintenance_Item__c> equipmentMaintenanceItemList = new
list<Equipment_Maintenance_Item__c>();
list<case> caseList = new list<case>();
list<id> oldCaseIds = new list<id>();
for(integer i = 0; i < 300; i++){
vehicleList.add(createVehicle());
equipmentList.add(createEquipment());
}
insert vehicleList;
insert equipmentList;
for(integer i = 0; i < 300; i++){
caseList.add(createMaintenanceRequest(vehicleList.get(i).id, equipmentList.get(i).id));
}
insert caseList;
for(integer i = 0; i < 300; i++){
equipmentMaintenanceItemList.add(createEquipmentMaintenanceItem(equipmentList.
get(i).id,
caseList.get(i).id));
```

```
}
insert equipmentMaintenanceItemList;
test.startTest();
for(case cs : caseList){
cs.Status = 'Closed';
oldCaseIds.add(cs.Id);
}
update caseList;
test.stopTest();
list<case> newCase = [select id
from case
where status ='New'];
list<Equipment_Maintenance_Item__c> workParts = [select id
from Equipment_Maintenance_Item__c
where Maintenance_Request__c in: oldCaseIds];
system.assert(newCase.size() == 300);
list<case> allCase = [select id from case];
system.assert(allCase.size() == 600);
}
}
```

WarehouseCalloutServiceMock

```
@isTest
global class WarehouseCalloutServiceMock implements HttpCalloutMock {
// implement http mock callout
global static HttpResponse respond(HttpRequest request) {
HttpResponse response = new HttpResponse();
response.setHeader('Content-Type', 'application/json');
response.setBody('[{"_id":"55d66226726b611100aaf741","replacement":false,"quantity":5
,"name":
"Generator 1000
kW","maintenanceperiod":365,"lifespan":120,"cost":5000,"sku":"100003"},{"_id":"55d66226
726b611
100aaf742","replacement":true,"quantity":183,"name":"Cooling
```

Fan","maintenanceperiod":0,"lifespan":0,"cost":300,"sku":"100004"},{"_id":"55d66226726b611100a
af743","replacement":true,"quantity":143,"name":"Fuse
20A","maintenanceperiod":0,"lifespan":0,"cost":22,"sku":"100005"}]');
response.setStatusCode(200);
return response;
}
}

WarehouseCalloutServiceTest

```
@IsTest
private class WarehouseCalloutServiceTest {
// implement your mock callout test here
@isTest
static void testWarehouseCallout() {
test.startTest();
test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
WarehouseCalloutService.execute(null);
test.stopTest();
List<Product2> product2List = new List<Product2>();
product2List = [SELECT ProductCode FROM Product2];
System.assertEquals(3, product2List.size());
System.assertEquals('55d66226726b611100aaf741', product2List.get(0).ProductCode);
System.assertEquals('55d66226726b611100aaf742', product2List.get(1).ProductCode);
System.assertEquals('55d66226726b611100aaf743', product2List.get(2).ProductCode);
}
}
```

WarehouseSyncSchedule

```
global class WarehouseSyncSchedule implements Schedulable {
global void execute(SchedulableContext ctx) {
WarehouseCalloutService.runWarehouseEquipmentSync();
}
}
```

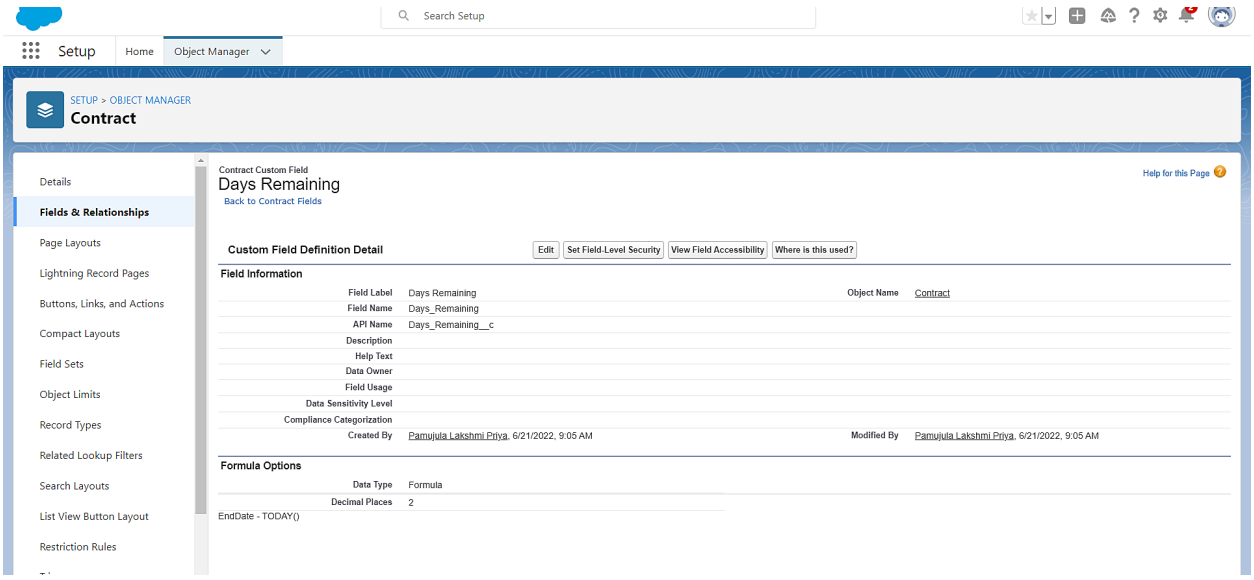
WarehouseSyncScheduleTest

```
@isTest
public class WarehouseSyncScheduleTest {
@isTest static void WarehousescheduleTest(){
String scheduleTime = '00 00 01 * * ?';
Test.startTest();
Test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
String jobID=System.schedule('Warehouse Time To Schedule to Test', scheduleTime,
new
WarehouseSyncSchedule());
Test.stopTest();
//Contains schedule information for a scheduled job. CronTrigger is similar to a cron job
on
UNIX systems.
// This object is available in API version 17.0 and later.
CronTrigger a=[SELECT Id FROM CronTrigger where NextFireTime > today];
System.assertEquals(jobID, a.Id,'Schedule ');
}
}
```

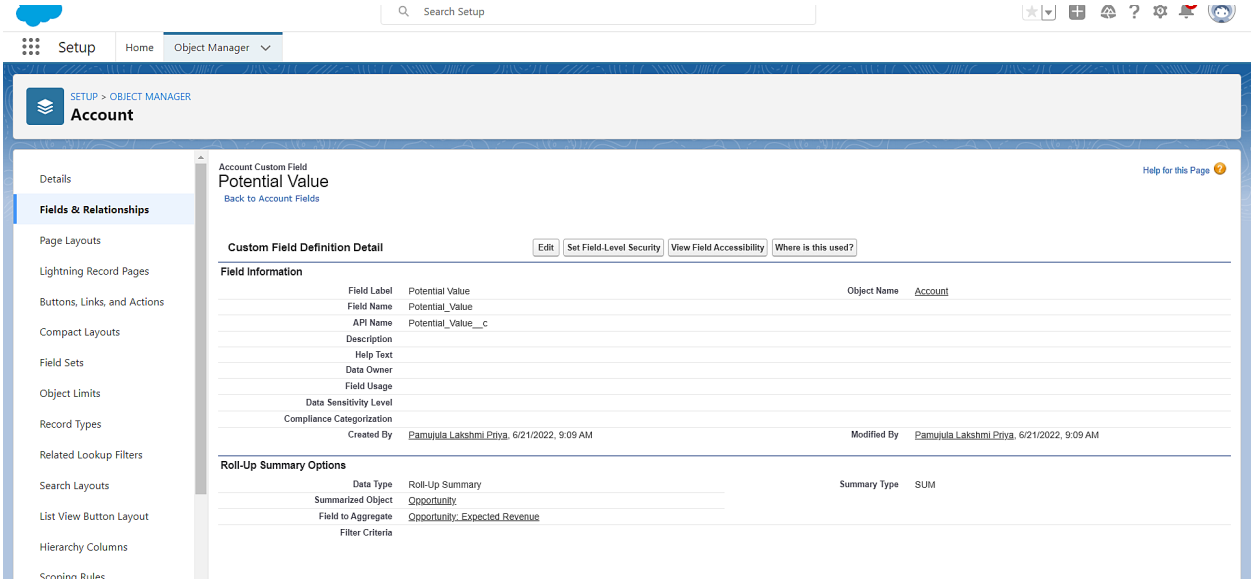
Process Automation Specialist

Validations and Formulas

Use Formula Field



Implement Rollup Summary Fields



Salesforce flow

Setup Home Object Manager

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Try Flow Builder

Process Builder - Contact address change

Back To Setup Help

Expand All Collapse All View All Processes Clone View Properties Deactivate Read Only

START

Account

Address Change TRUE

IMMEDIATE ACTIONS

Update Contact Add...

Add Action

STOP

FALSE

Add Criteria TRUE

IMMEDIATE ACTIONS

Add Action

STOP

Update Records

Action Name *

Update Contact Addresses

Record *

[Account].Contacts

Criteria for Updating Records *

Updated records meet all conditions

No criteria—just update the records!

Set new field values for the records you update

Field *	Type *	Value *
Mailing Street	Field Reference	[Account].BillingStreet

Save Cancel

Search Setup

Setup Home Object Manager

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Process Builder - Contact address change

Back To Setup Help

Expand All Collapse All View All Processes Clone View Properties Deactivate Read Only

START

Account

Address Change TRUE

IMMEDIATE ACTIONS

Update Contact Add...

Add Action

STOP

FALSE

Add Criteria TRUE

IMMEDIATE ACTIONS

Add Action

STOP

Choose Object and Specify When to Start the Process

Object *

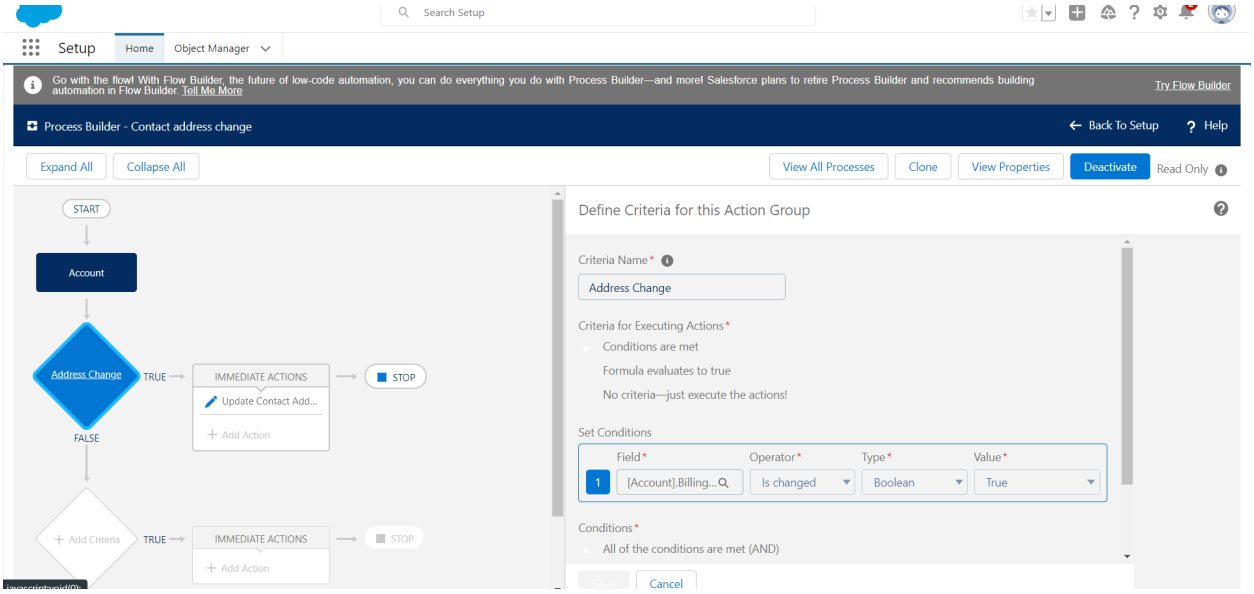
Account

Start the process *

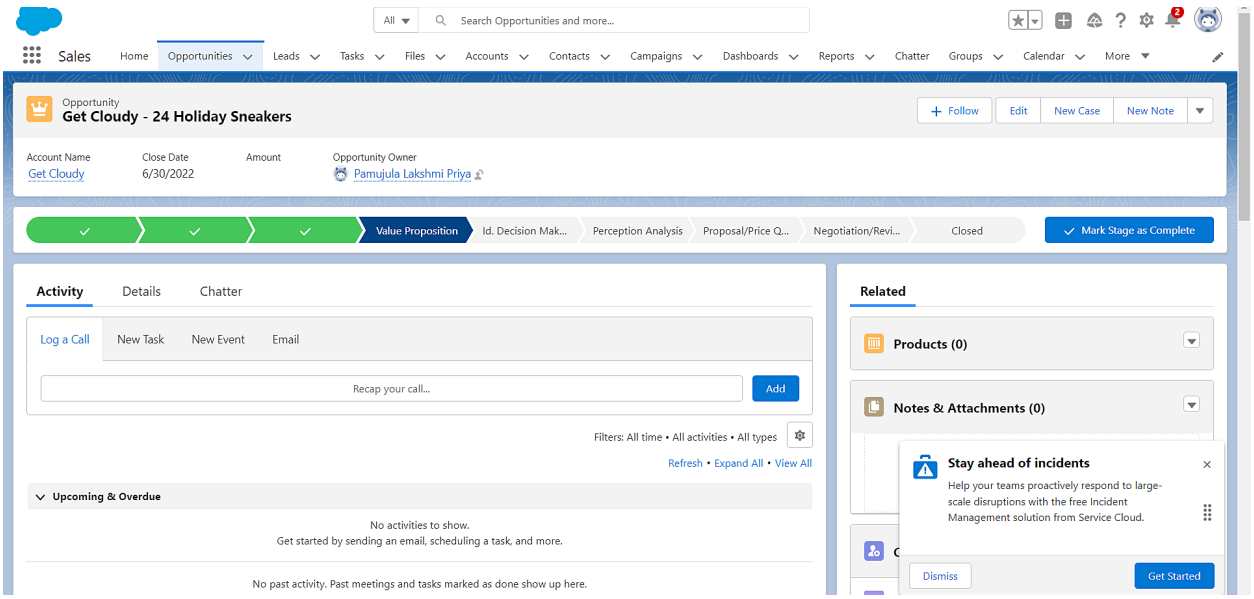
only when a record is created

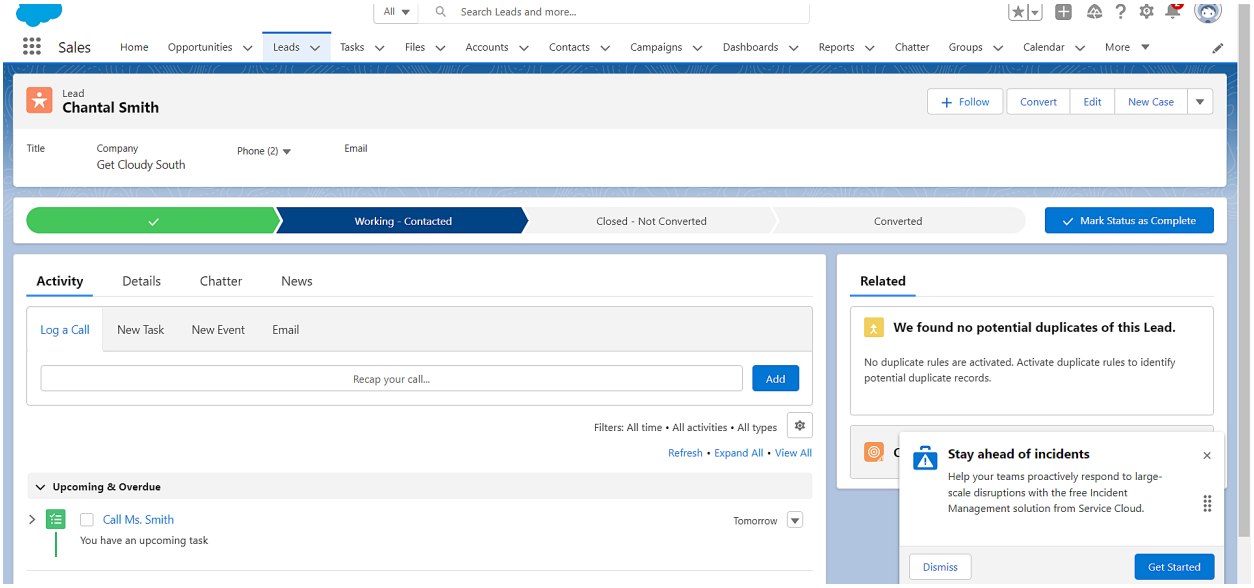
when a record is created or edited

Advanced



Leads & Opportunities for Lightning Experience





Process Automation Specialist


Search Setup
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Lead
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Lead Validation Rule
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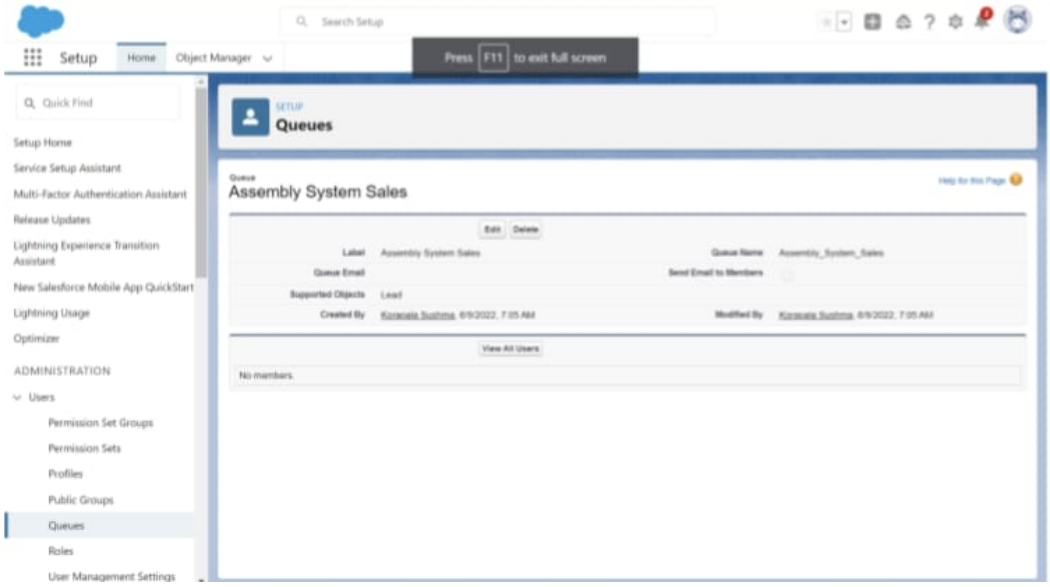
Help for this Page
Validation Rule Detail
Edit
Clone
Rule Name
Anything
Active
Error Condition Formula
Error Message
We're a US-based company, and for now we can only do business in the United States. I can't do anything with international leads.
Error Location
Top of Page
Description
Created By
Modified By


Search Setup
Setup
Home
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Press F11 to exit full screen
Quick Find
Setup Home
Service Setup Assistant
Multi-Factor Authentication Assistant
Release Updates
Lightning Experience Transition Assistant
New Salesforce Mobile App QuickStart
Lightning Usage
Optimizer
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Permission Set Groups
Permission Sets
Profiles
Public Groups
Queues
Roles
User Management Settings
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Queues
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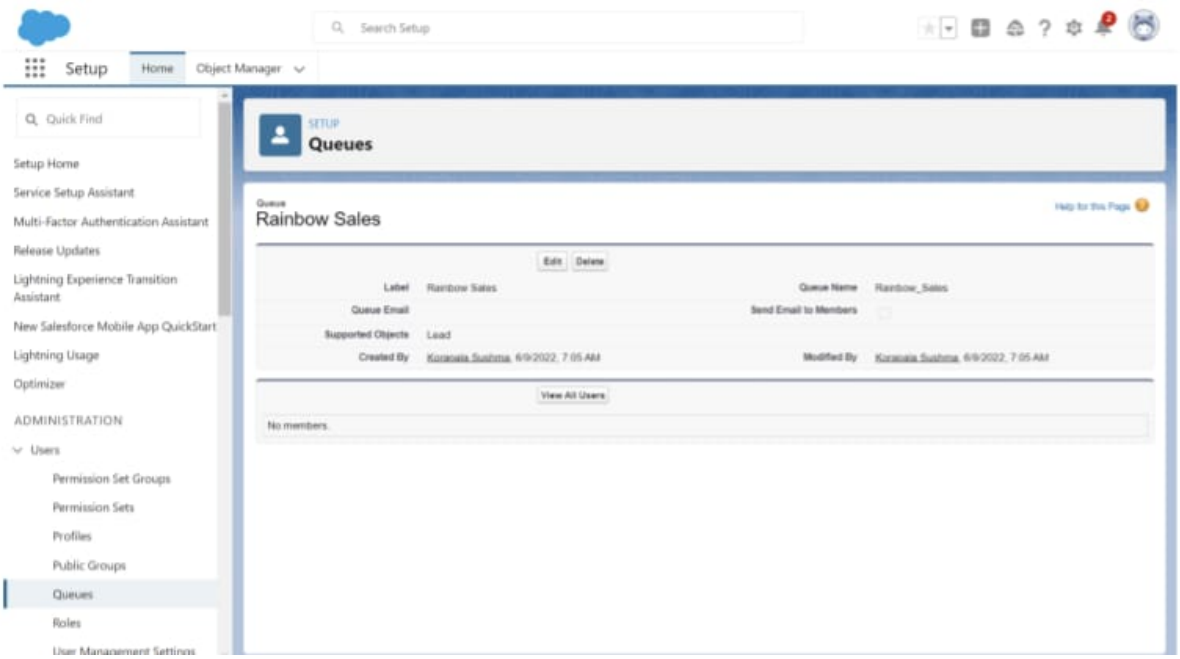
Assembly System Sales
Help for this Page
Edit
Delete
Label
Assembly System Sales
Queue Name
Assembly_System_Sales
Queue Email
Send Email to Members
Supported Objects
Lead
Created By
Modified By
View All Users
No members.


Search Setup
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Setup Home
Service Setup Assistant
Multi-Factor Authentication Assistant
Release Updates
Lightning Experience Transition Assistant
New Salesforce Mobile App QuickStart
Lightning Usage
Optimizer
ADMINISTRATION
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Permission Sets
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Queues
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Rainbow Sales
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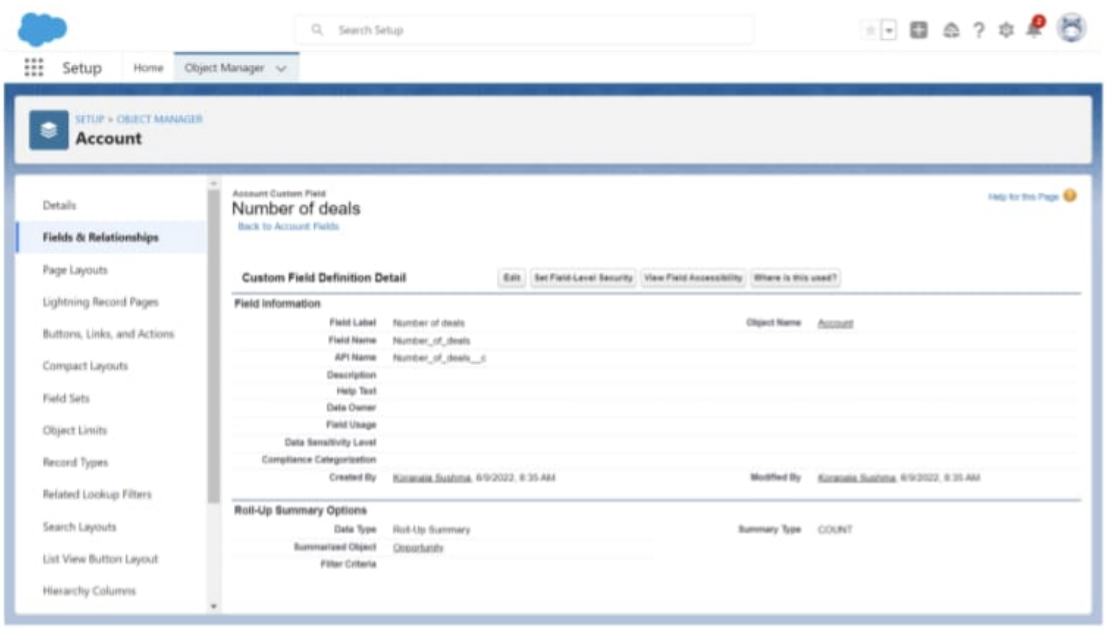
Edit
Delete
Label
Rainbow Sales
Queue Name
Rainbow_Sales
Queue Email
Send Email to Members
Supported Objects
Lead
Created By
Koraganja Sushma, 6/9/2022, 7:05 AM
Modified By
Koraganja Sushma, 6/9/2022, 7:05 AM
View All Users
No members.


Search Setup
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Account Custom Field
Number of deals
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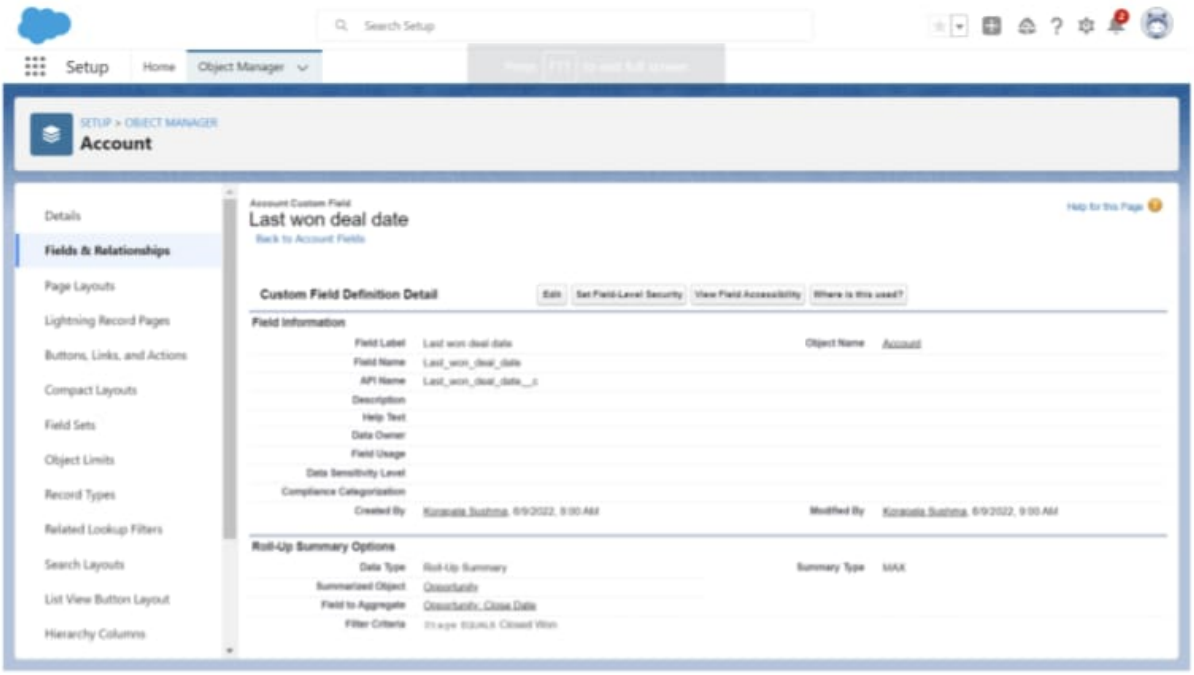
View Field Accessibility
Where is this used?
Field Information
Field Label
Number of deals
Object Name
Account
Field Name
Number_of_deals
API Name
Number_of_deals__c
Description
Help Text
Data Owner
Field Usage
Data Sensitivity Level
Compliance Categorization
Created By
Koraganja Sushma, 6/9/2022, 8:35 AM
Modified By
Koraganja Sushma, 6/9/2022, 8:35 AM
Roll-Up Summary Options
Data Type
Roll-Up Summary
Summary Type
COUNT
Summarized Object
Opportunity
Filter Criteria


Search Setup
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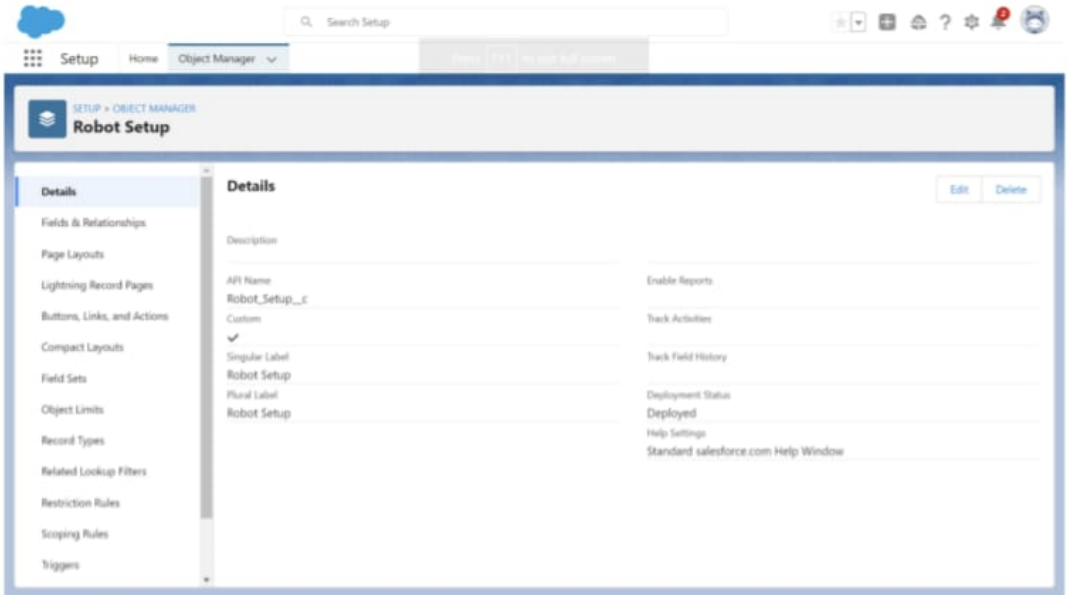
View Field Accessibility
Where is this used?
Field Information
Field Label
Last won deal date
Object Name
Account
Field Name
Last_won_deal_date
API Name
Last_won_deal_date__c
Description
Help Text
Data Owner
Field Usage
Data Sensitivity Level
Compliance Categorization
Created By
Modified By
Roll-Up Summary Options
Data Type
Roll-Up Summary
Summary Type
MAX
Summarized Object
Opportunity
Field to Aggregate
Opportunity: Close Date
Filter Criteria


Search Setup
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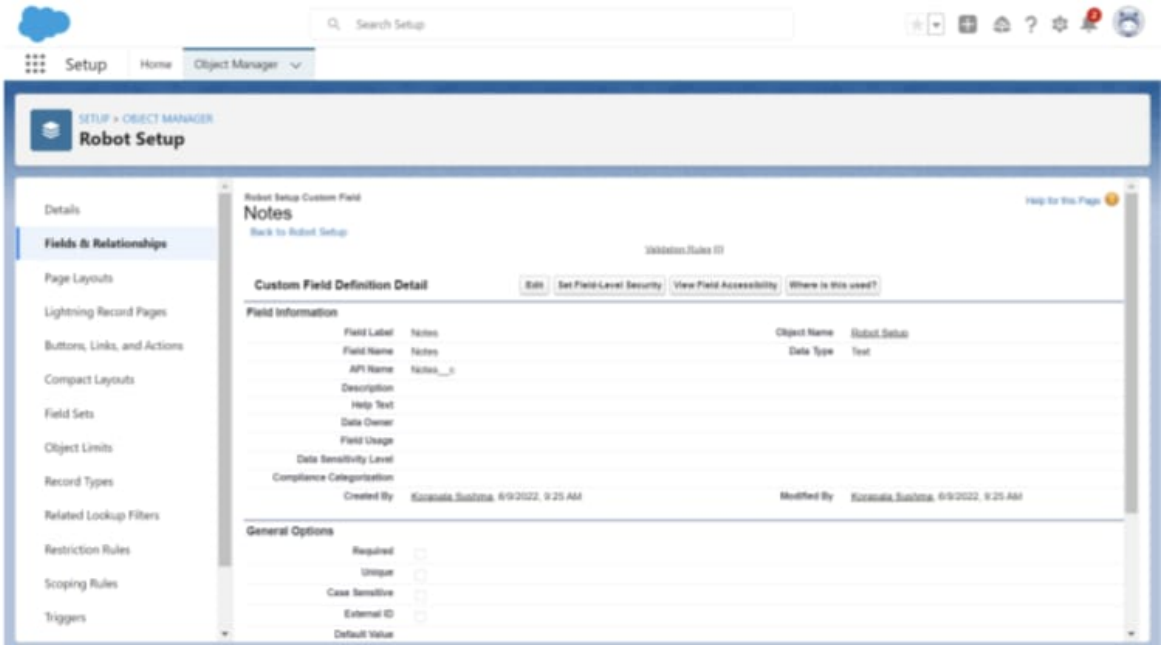
Robot_Setup__c
Custom
Singular Label
Robot Setup
Plural Label
Robot Setup
Enable Reports
Track Activities
Track Field History
Deployment Status
Deployed
Help Settings
Standard salesforce.com Help Window


Search Setup
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Text
API Name
Notes__c
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Data Owner
Field Usage
Data Sensitivity Level
Compliance Categorization
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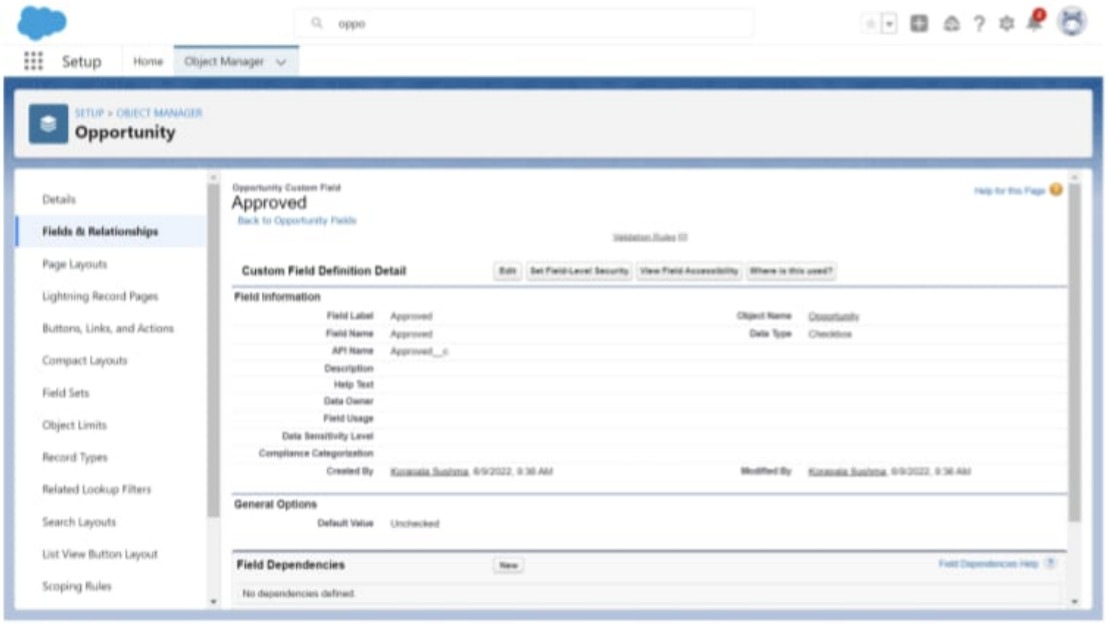
Kuragala Sushma, 6/9/2022, 9:25 AM
Modified By
Kuragala Sushma, 6/9/2022, 9:25 AM
General Options
Required
Unique
Case Sensitive
External ID
Default Value


oppo
Setup
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Field Name
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Approved__c
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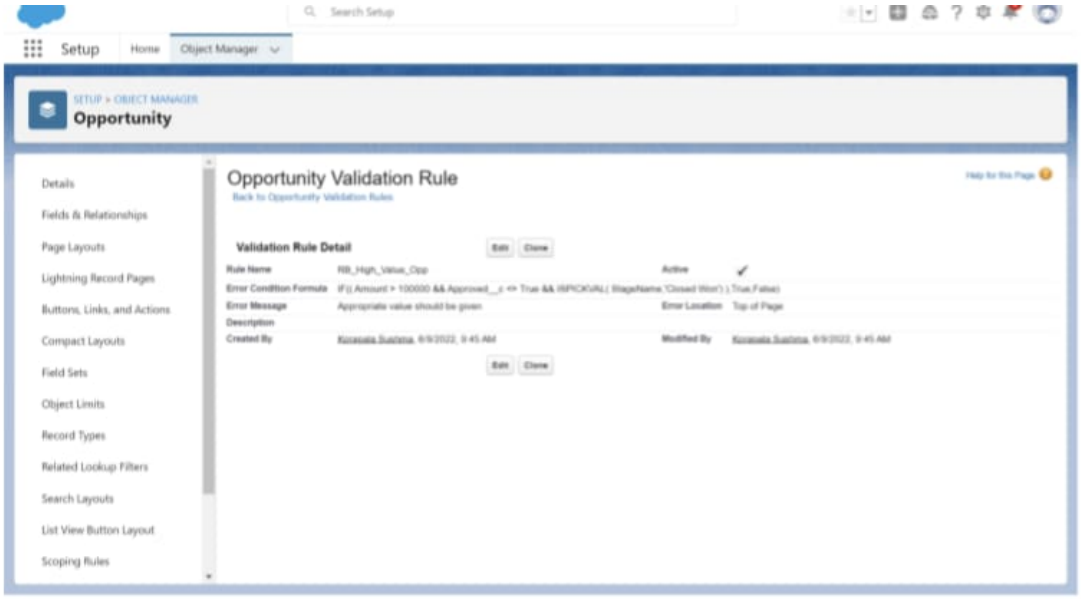
Kuragala Sushma, 6/9/2022, 9:36 AM
Modified By
Kuragala Sushma, 6/9/2022, 9:36 AM
General Options
Default Value
Unchecked
Field Dependencies
New
Field Dependencies Help
No dependencies defined.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NB_High_Value_Opp
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Error Message
Appropriate value should be given
Error Location
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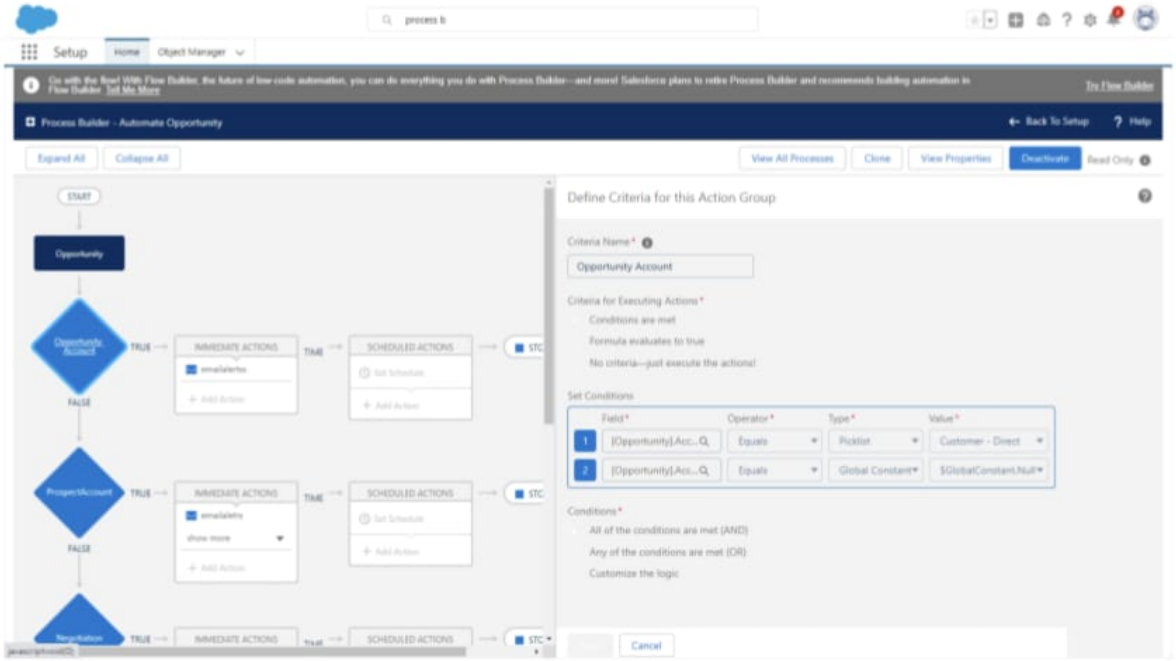
Created By
Modified By


process b
Setup
Home
Object Manager
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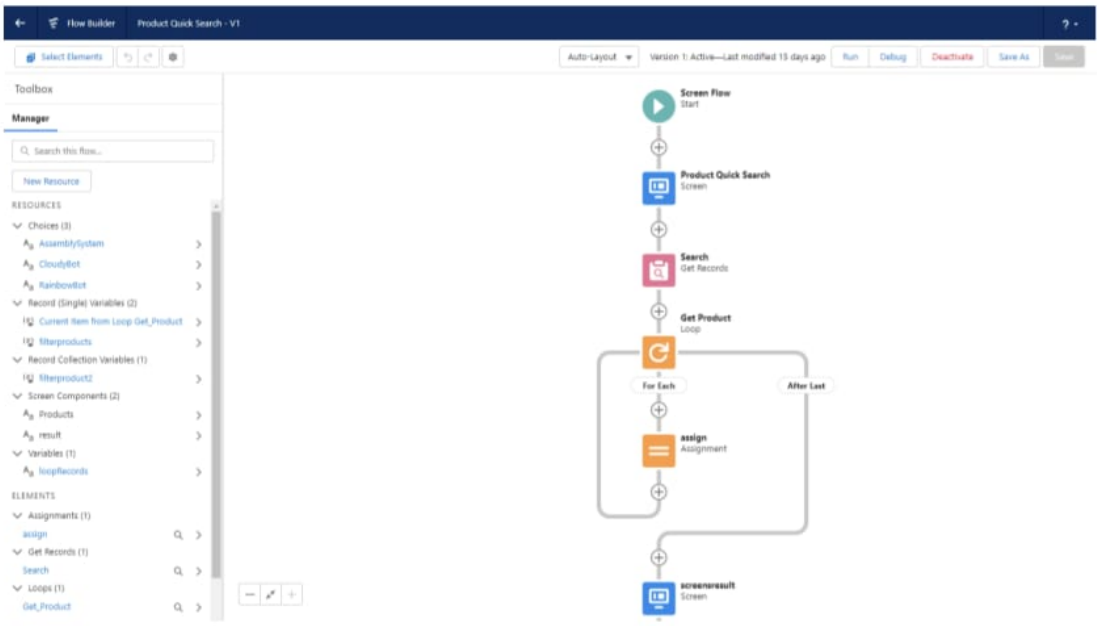
Expand All
Collapse All
View All Processes
Clone
View Properties
Deactivate
Read Only
START
Opportunity
Opportunity Account
TRUE
FALSE
IMMEDIATE ACTIONS
SCHEDULED ACTIONS
ProspectAccount
Negotiation
Define Criteria for this Action Group
Criteria Name *
Opportunity Account
Criteria for Executing Actions *
Conditions are met
Formula evaluates to true
No criteria—just execute the actions!
Set Conditions
Field *
Operator *
Type *
Value *
Equals
Picklist
Customer - Direct
Global Constant
Conditions *
All of the conditions are met (AND)
Any of the conditions are met (OR)
Customize the logic
Cancel


Flow Builder
Product Quick Search - V1
Select Elements
Auto-Layout
Version 1: Active—Last modified 13 days ago
Run
Debug
Deactivate
Save As
Save
Toolbox
Manager
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Choices (3)
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CloudyBot
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Current Item from Loop Get_Product
filterproducts
Record Collection Variables (1)
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Assignments (1)
assign
Get Records (1)
Search
Loops (1)
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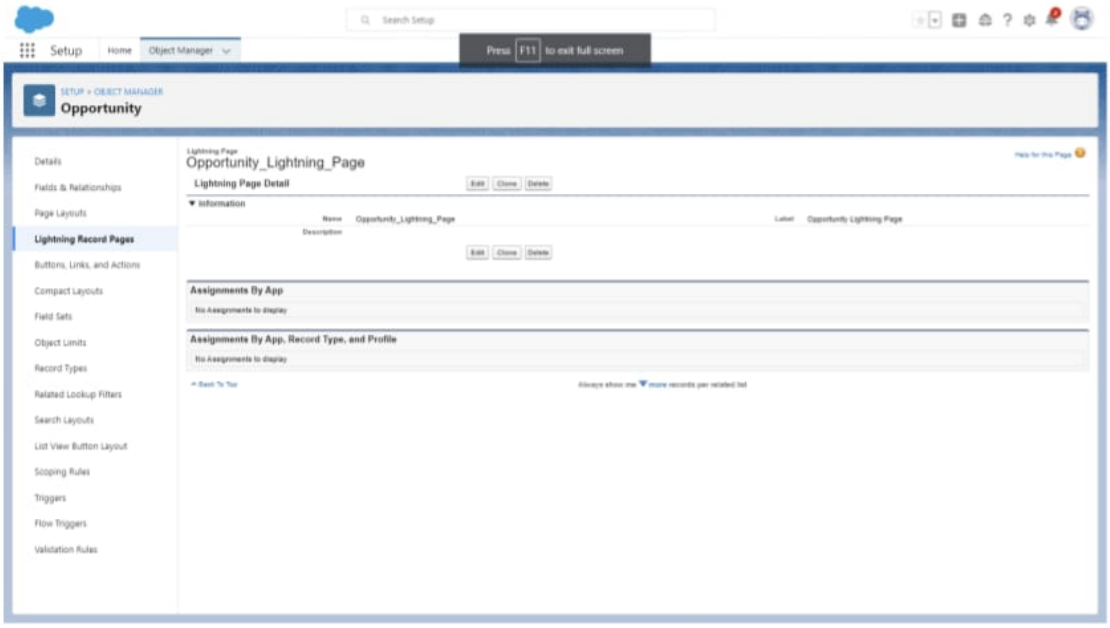
Screen Flow
Start
Product Quick Search
Screen
Search
Get Records
Get Product
Loop
For Each
After Last
assign
Assignment
screenresult
Screen


Search Setup
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Opportunity Lightning Page
Description
Assignments By App
No Assignments to display
Assignments By App, Record Type, and Profile
No Assignments to display
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Always show me more records per related list