

# APEX SPECIALIST SUPERBATCH

## PREREQUISITES:

The screenshot shows the Trailhead Apex Specialist Superbadge page. The browser's address bar displays the URL: `trailhead.salesforce.com/content/learn/superbadges/superbadge_apex?trailmix_creator_id=trailblazerconnect&trailmix_slug=salesforce-developer-catalyst`. The user's profile, Shreya Singh, is visible in the top right corner with 32 badges and 52,375 points. The page features a green header with the Trailhead logo and navigation links. Below the header, the Apex Specialist Superbadge is highlighted with a green background and a checkmark icon. The badge description states: "Use integration and business logic to push your Apex coding skills to the limit." and shows it was completed on 6/24/22. A "Developer Super Set" badge is also visible. The prerequisites section, titled "Prerequisites", lists five items in a sequence: Apex Triggers, Apex Testing, Asynchronous Apex, Apex Integration Services, and Apex Specialist. Each item is represented by a gear icon with a checkmark, indicating completion.

Trailhead

Search

Shreya Singh  
32 badges, 52,375 points

Today Learn Credentials Community For Companies

Developer Super Set

+13,000 POINTS

Superbadge  
**Apex Specialist**  
Use integration and business logic to push your Apex coding skills to the limit.

Completed 6/24/22

**Prerequisites**

Apex Triggers Apex Testing Asynchronous Apex Apex Integration Services Apex Specialist

35°C Partly sunny

ENG IN 14:12 27-06-2022

## SET UP DEVELOPMENT ORG:

1. Create a new Trailhead Playground or Developer Edition Org for this superbadge.
2. Install this unlocked package (package ID: 04t6g000008av9iAAA).
3. Add pick list values `Repair` and `Routine Maintenance` to the **Type** field on the Case object.
4. Update the Case page layout assignment to use the **Case (HowWeRoll) Layout** for your profile.
5. Rename the tab/label for the Case tab to `Maintenance Request`.
6. Update the Product page layout assignment to use the **Product (HowWeRoll) Layout** for your profile.
7. Rename the tab/label for the Product object to `Equipment`.
8. Use App Launcher to navigate to the **Create Default Data** tab of the **How We Roll Maintenance** app. Click **Create Data** to generate sample data for the application.

## CHALLENGE 1: QUIZ

This challenge consisted of a quiz with MCQs.

## CHALLENGE 2: AUTOMATE RECORD CREATION

In this module, we created two apex classes with following codes:

## **MaintenanceRequest.apxt**

```
trigger MaintenanceRequest on Case (before update, after update) {

    if(Trigger.isUpdate && Trigger.isAfter){
        MaintenanceRequestHelper.updateWorkOrders(Trigger.New, Trigger.OldMap);
    }
}
```

## **MaintenanceRequestHelper.apxc**

```
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);
                }
            }
        }

        if (!validIds.isEmpty()){
            List<Case> newCases = new List<Case>();
            Map<Id,Case> closedCasesM = 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>();
    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'));
}

for(Case cc : closedCasesM.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 (maintenanceCycles.containsKey(cc.Id)){
        nc.Date_Due__c = Date.today().addDays((Integer) maintenanceCycles.get(cc.Id));
    }

    newCases.add(nc);
}

insert newCases;

List<Equipment_Maintenance_Item__c> clonedWPs = new List<Equipment_Maintenance_Item__c>();

```

```

    for (Case nc : newCases){
        for (Equipment_Maintenance_Item__c wp : closedCasesM.get(nc.ParentId).Equipment_Maintenance_Items__r){
            Equipment_Maintenance_Item__c wpClone = wp.clone();
            wpClone.Maintenance_Request__c = nc.Id;
            ClonedWPs.add(wpClone);
        }
    }
    insert ClonedWPs;
}
}
}

```

## CHALLENGE 3: SYNCHRONIZE SALESFORCE DATA WITH AN EXTERNAL SYSTEM:

In this module we created an apex class and a trigger using following code:

### WarehouseCalloutService.apxc:

```

public with sharing class WarehouseCalloutService implements Queueable {
    private static final String WAREHOUSE_URL = 'https://th-superbadge-apex.herokuapp.com/equipment';

    @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');
    }
}

```

In anonymous window:

```
System.enqueueJob(new WarehouseCalloutService());
```

## CHALLENGE 4: SCHEDULE SYNCHRONIZATION USING APEX CODE :

### WarehouseSyncSchedule.apxc:

```

global with sharing class WarehouseSyncSchedule implements Schedulable{
    global void execute(SchedulableContext ctx){
        System.enqueueJob(new WarehouseCalloutService());
    }
}

```

### WarehouseCalloutService.apxc:

```
public with sharing class WarehouseCalloutService implements Queueable {
```

```

private static final String WAREHOUSE_URL = 'https://th-superbadge-apex.herokuapp.com/equipment';

@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');
}
}

```

## CHALLENGE 5: TEST AUTOMATION LOGIC :

MaintenanceRequestHelperTest.apxc:

```

@istest
public with sharing class MaintenanceRequestHelperTest {

```

```
private static final string STATUS_NEW = 'New';
private static final string WORKING = 'Working';
private static final string CLOSED = 'Closed';
private static final string REPAIR = 'Repair';
private static final string REQUEST_ORIGIN = 'Web';
private static final string REQUEST_TYPE = 'Routine Maintenance';
private static final string REQUEST_SUBJECT = 'Testing subject';
```

```
PRIVATE STATIC Vehicle__c createVehicle(){
    Vehicle__c Vehicle = new Vehicle__C(name = 'SuperTruck');
    return Vehicle;
}
```

```
PRIVATE STATIC Product2 createEq(){
    product2 equipment = new product2(name = 'SuperEquipment',
                                       lifespan_months__C = 10,
                                       maintenance_cycle__C = 10,
                                       replacement_part__c = true);

    return equipment;
}
```

```
PRIVATE STATIC Case createMaintenanceRequest(id vehicleId, id equipmentId){
    case cs = new case(Type=REPAIR,
                      Status=STATUS_NEW,
                      Origin=REQUEST_ORIGIN,
                      Subject=REQUEST_SUBJECT,
                      Equipment__c=equipmentId,
                      Vehicle__c=vehicleId);

    return cs;
}
```

```

PRIVATE STATIC Equipment_Maintenance_Item__c createWorkPart(id equipmentId,id requestId){
    Equipment_Maintenance_Item__c wp = new Equipment_Maintenance_Item__c(Equipment__c = equipmentId,
                                                                           Maintenance_Request__c = requestId);

    return wp;
}

```

@istest

```

private static void testMaintenanceRequestPositive(){
    Vehicle__c vehicle = createVehicle();
    insert vehicle;
    id vehicleId = vehicle.Id;

    Product2 equipment = createEq();
    insert equipment;
    id equipmentId = equipment.Id;

    case somethingToUpdate = createMaintenanceRequest(vehicleId,equipmentId);
    insert somethingToUpdate;

    Equipment_Maintenance_Item__c workP = createWorkPart(equipmentId,somethingToUpdate.id);
    insert workP;

    test.startTest();
    somethingToUpdate.status = CLOSED;
    update somethingToUpdate;
    test.stopTest();

    Case newReq = [Select id, subject, type, Equipment__c, Date_Reported__c, Vehicle__c, Date_Due__c
                   from case

```

```

        where status =:STATUS_NEW];

Equipment_Maintenance_Item__c workPart = [select id
                                           from Equipment_Maintenance_Item__c
                                           where Maintenance_Request__c =:newReq.Id];

system.assert(workPart != null);
system.assert(newReq.Subject != null);
system.assertEquals(newReq.Type, REQUEST_TYPE);
SYSTEM.assertEquals(newReq.Equipment__c, equipmentId);
SYSTEM.assertEquals(newReq.Vehicle__c, vehicleId);
SYSTEM.assertEquals(newReq.Date_Reported__c, system.today());
}

@istest
private static void testMaintenanceRequestNegative(){
    Vehicle__C vehicle = createVehicle();
    insert vehicle;
    id vehicleId = vehicle.Id;

    product2 equipment = createEq();
    insert equipment;
    id equipmentId = equipment.Id;

    case emptyReq = createMaintenanceRequest(vehicleId,equipmentId);
    insert emptyReq;

    Equipment_Maintenance_Item__c workP = createWorkPart(equipmentId, emptyReq.Id);
    insert workP;

    test.startTest();

```

```
emptyReq.Status = WORKING;
update emptyReq;
test.stopTest();
```

```
list<case> allRequest = [select id
                        from case];
```

```
Equipment_Maintenance_Item__c workPart = [select id
                                           from Equipment_Maintenance_Item__c
                                           where Maintenance_Request__c = :emptyReq.Id];
```

```
system.assert(workPart != null);
system.assert(allRequest.size() == 1);
```

```
}
```

```
@istest
```

```
private static void testMaintenanceRequestBulk(){
    list<Vehicle__C> vehicleList = new list<Vehicle__C>();
    list<Product2> equipmentList = new list<Product2>();
    list<Equipment_Maintenance_Item__c> workPartList = new list<Equipment_Maintenance_Item__c>();
    list<case> requestList = new list<case>();
    list<id> oldRequestIds = new list<id>();

    for(integer i = 0; i < 300; i++){
        vehicleList.add(createVehicle());
        equipmentList.add(createEq());
    }
    insert vehicleList;
    insert equipmentList;

    for(integer i = 0; i < 300; i++){
```

```

        requestList.add(createMaintenanceRequest(vehicleList.get(i).id, equipmentList.get(i).id));
    }
    insert requestList;

for(integer i = 0; i < 300; i++){
    workPartList.add(createWorkPart(equipmentList.get(i).id, requestList.get(i).id));
}
insert workPartList;

test.startTest();
for(case req : requestList){
    req.Status = CLOSED;
    oldRequestIds.add(req.Id);
}
update requestList;
test.stopTest();

list<case> allRequests = [select id
                        from case
                        where status =: STATUS_NEW];

list<Equipment_Maintenance_Item__c> workParts = [select id
                                                from Equipment_Maintenance_Item__c
                                                where Maintenance_Request__c in: oldRequestIds];

system.assert(allRequests.size() == 300);
}
}

```

### MaintenanceRequestHelper.apxc:

```

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);
            }
        }
    }

    if (!validIds.isEmpty()){
        List<Case> newCases = new List<Case>();
        Map<Id,Case> closedCasesM = 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>();
        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'));
        }

        for(Case cc : closedCasesM.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 (maintenanceCycles.containsKey(cc.Id)){
        nc.Date_Due__c = Date.today().addDays((Integer) maintenanceCycles.get(cc.Id));
    }

    newCases.add(nc);
}

insert newCases;

List<Equipment_Maintenance_Item__c> clonedWPs = new List<Equipment_Maintenance_Item__c>();
for (Case nc : newCases){
    for (Equipment_Maintenance_Item__c wp : closedCasesM.get(nc.ParentId).Equipment_Maintenance_Items__r){
        Equipment_Maintenance_Item__c wpClone = wp.clone();
        wpClone.Maintenance_Request__c = nc.Id;
        ClonedWPs.add(wpClone);
    }
}
insert ClonedWPs;
}
}
}

```



#### MaintenanceRequest.apxt:

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

## CHALLENGE 6: TEST CALLOUT LOGIC :

#### WarehouseCalloutService.apxc:

#### WarehouseCalloutServiceTest.apxc:

```
@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);
    }
}

```

#### WarehouseCalloutServiceMock.apxc:

```

@Test
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": "55d66226726b611100aaf742", "replacement": true, "qu
antity": 183, "name": "Cooling
Fan", "maintenanceperiod": 0, "lifespan": 0, "cost": 300, "sku": "100004"}, {"_id": "55d66226726b611100aaf743", "replacement": true, "quanti
ty": 143, "name": "Fuse 20A", "maintenanceperiod": 0, "lifespan": 0, "cost": 22, "sku": "100005"} ] ');
        response.setStatusCode(200);

        return response;
    }
}

```

## CHALLENGE 7. TEST SCHEDULING LOGIC :

#### WarehouseSyncSchedule.apxc:

```

global with sharing class WarehouseSyncSchedule implements Schedulable{
    global void execute(SchedulableContext ctx){

```

```
        System.enqueueJob(new WarehouseCalloutService());
    }
}
```

#### WarehouseSyncScheduleTest.apxc:

```
@isTest
public with sharing class WarehouseSyncScheduleTest {
    // implement scheduled code here
    //
    @isTest static void test() {
        String scheduleTime = '00 00 00 * * ? *';
        Test.startTest();
        Test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
        String jobId = System.schedule('Warehouse Time to Schedule to test', scheduleTime, new WarehouseSyncSchedule());
        CronTrigger c = [SELECT State FROM CronTrigger WHERE Id =: jobId];
        System.assertEquals('WAITING', String.valueOf(c.State), 'JobId does not match');

        Test.stopTest();
    }
}
```

## PROCESS AUTOMATION SPECIALIST

### PREREQUISITES:

trailhead.salesforce.com/content/learn/superbadges/superbadge\_process\_automation-trailmix\_creator\_id=trailblazerconnect&trailmix\_slug=salesforce-developer-catalyst

TRAILHEAD Search ? 32 badges, 52,375 points Shreya Singh

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### Process Automation Specialist

Showcase your mastery of business process automation without writing a line of code.

☆ + Completed 6/23/22

#### Prerequisites

```
graph LR; A[Formulas and Validations] --> B[Salesforce Flow]; B --> C[Leads & Opportunities for Lightning Experience]; C --> D[Process Automation Specialist];
```

Formulas and Validations

Salesforce Flow

Leads & Opportunities for Lightning Experience

Process Automation Specialist

## CHALLENGE 1: QUIZ

This challenge consisted of a quiz with MCQs.

## CHALLENGE 2: AUTOMATE LEADS

We had to create validation rule on Lead.

**Rule name:** Anything

**Error condition formula:**

```
OR(AND(LEN(State) > 2,  
NOT(CONTAINS("AL:AK:AZ:AR:CA:CO:CT:DE:DC:FL:GA:HI:ID:IL:IN:IA:KS:KY:LA:ME:MD:MA:MI:MN:MS:MO:MT:NE:NV:NH:NJ:NM:NY:NC:ND:OH:OK:OR:PA:RI:SC  
:SD:TN:TX:UT:VT:VA:WA:WV:WI:WY", State)) ), NOT(OR(Country ="US",Country ="USA",Country ="United States", ISBLANK(Country))))
```

Then we created two queues:

Rainbow Sales and Assembly Sales

Then we created two Lead assignment rules for the queues.

## CHALLENGE 2: AUTOMATE ACCOUNTS

We created 4 Rollup Summary fields:

**Field 1:**

Label: Number of deals

Summary type: COUNT

Summarized Object: Opportunity

Filter Criteria:None

**Field 2:**

Label: Number of won deals

Summary type: COUNT

Summarized Object: Opportunity

Filter Criteria: Stage EQUALS Closed Won

**Field 3:**

Label: Last won deal date

Summary type: MAX

Field to Aggregate: Opportunity: Closed Date

Summarized Object: Opportunity

Filter Criteria:Stage EQUALS Closed Won

**Field 4:**

Label: Amount of won deals

Summary type: SUM

Field to Aggregate: Opportunity: Amount

Summarized Object: Opportunity

Filter Criteria:Stage EQUALS Closed Won

We created 2 Formula fields:

**Field 5:**

Label: Deal win percent

Return Type: Percent

Decimal Places: 2

Formula: (Number\_of\_won\_deals\_\_c/Number\_of\_deals\_\_c)

**Field 6:**

Label: Call for Service

Return Type: Text

Decimal Places: 2

Formula: IF(DATE(YEAR(Last\_won\_deal\_date\_\_c)+2,MONTH(Last\_won\_deal\_date\_\_c),DAY(Last\_won\_deal\_date\_\_c))<=TODAY(),"Yes","No")

Then Create 2 Validation Rules

**RULE1:**

**Rule Name:**US\_AddressSomething

**Error Condition Formula:**

OR(AND(LEN(BillingState) > 2,  
NOT(CONTAINS("AL:AK:AZ:AR:CA:CO:CT:DE:DC:FL:GA:HI:ID:IL:IN:IA:KS:KY:LA:ME:MD:MA:MI:MN:MS:MO:MT:NE:NV:NH:NJ:NM:NY:NC:ND:OH:OK:OR:PA:RI:SC:SD:TN:TX:UT:VT:VA:WA:WV:WI:WY", BillingState ))  
,AND(LEN(ShippingState) > 2,  
NOT(CONTAINS("AL:AK:AZ:AR:CA:CO:CT:DE:DC:FL:GA:HI:ID:IL:IN:IA:KS:KY:LA:ME:MD:MA:MI:MN:MS:MO:MT:NE:NV:NH:NJ:NM:NY:NC:ND:OH:OK:OR:PA:RI:SC:SD:TN:TX:UT:VT:VA:WA:WV:WI:WY", ShippingState))  
,NOT(OR(BillingCountry ="US",BillingCountry ="USA",BillingCountry ="United States", ISBLANK(BillingCountry))),  
NOT(OR(ShippingCountry ="US",ShippingCountry ="USA",ShippingCountry ="United States", ISBLANK(ShippingCountry))))

**Error Message:** You can not save a new account unless the shipping and billing state fields are valid US state abbreviations, and the country field is either blank or US,USA, or United States.

**Error Location:** Top of Page

**RULE2:**

**Rule Name:** Name\_Change

**Error Condition Formula:** ISCHANGED( Name ) && ( OR( ISPICKVAL( Type ,'Customer - Direct') ,ISPICKVAL( Type ,'Customer - Channel') ))

**Error Message:** You can't change the Account name for "Customer - Direct" or "Customer - Channel"

**Error Location:** Account Name

### **CHALLENGE 3:CREATE ROBOT SETUP OBJECT**

Create a custom object Robot Setup with master detail relationship to Opprotunity.

Create fields names


Date=>Date type, Day of week=>Number , Notes=>Text type.

### **CHALLENGE 4: CREATE SALES PROCESS AND VALIDATE OOPORTUNITIES**

In Opportunities Object=>Fields and relationships=Stage=> add picklist value "Awaiting Approval".

Next, we created a sales process named RB Robotics Sales Process.





SETUP

Sales Processes

Sales Process

RB Robotics Sales Process

Select a stage from the Available Values list and add it to the Selected Values list to include it in the sales process. Note that removing a stage from the picklist does not remove it from any existing records.

Opportunity Stages

Sales Process	RB Robotics Sales Process
Namespace Prefix	
Description	
<div>Available Values</div> <div> <div>Needs Analysis (Open, 20%, Pipeline)</div> <div>Value Proposition (Open, 50%, Pipeline)</div> <div>Id. Decision Makers (Open, 60%, Pipeline)</div> <div>Perception Analysis (Open, 70%, Pipeline)</div> </div>	<div>Selected Values</div> <div> <div>Prospecting (Open, 10%, Pipeline)</div> <div>Qualification (Open, 10%, Pipeline)</div> <div>Proposal/Price Quote (Open, 75%, Pipeline)</div> <div>Negotiation/Review (Open, 90%, Pipeline)</div> <div>Closed Won (Closed/Won, 100%, Closed)</div> <div>Closed Lost (Closed/Lost, 0%, Omitted)</div> <div>Awaiting Approval (Open, 100%, Pipeline)</div> </div>

Add

Remove

Save

Cancel

Add Opportunity Validation Rule with Error Formula: IF(( Amount > 100000 && Approved\_\_c <> True && ISPICKVAL( StageName,'Closed Won' ) ),True,False)

## CHALLENGE 5: AUTOMATE OPPORTUNITIES

We first created three email templates:

Setup

Home

Object Manager

Q email alerts

✓ Process Automation

▼ Workflow Actions

Email Alerts

Didn't find what you're looking for?  
Try using Global Search.

SETUP

Email Alerts

All Email Alerts

Help for this Page

Email alerts are the emails that workflow rules send when triggered.

View:

All Email Alerts

Create New View

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

Other

All

New Email Alert

Action	Description ↑	Email Template Name	Object	Last Modified Date
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Finance: Account Creation</a>	<a href="#">Finance: Account Creation</a>	Opportunity	6/23/2022
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Sales: Opportunity Approval Status Email</a>	<a href="#">Sales: Opportunity Approval Status Email</a>	Opportunity	6/23/2022
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">SALES: Opportunity Needs Approval</a>	<a href="#">SALES: Opportunity Needs Approval</a>	Opportunity	6/23/2022

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

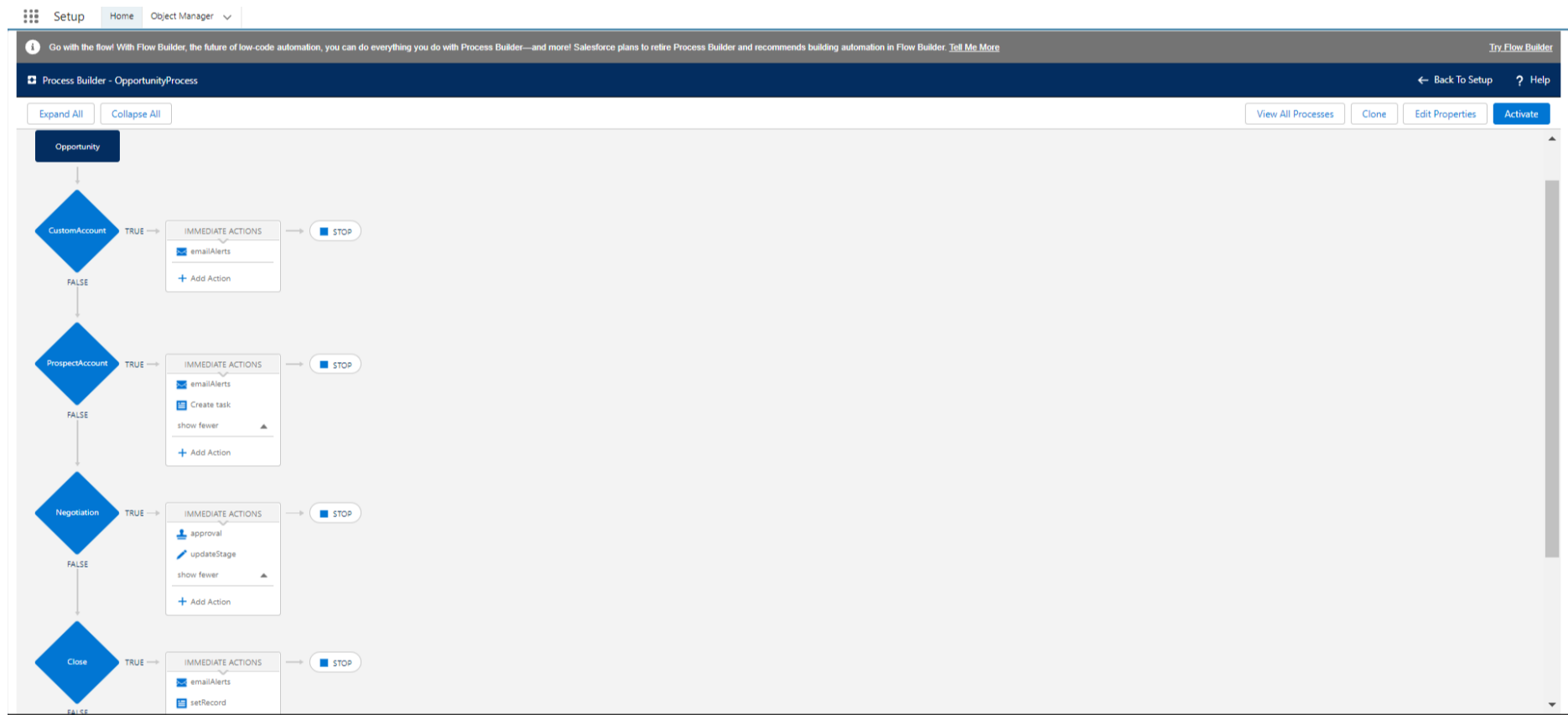
Y

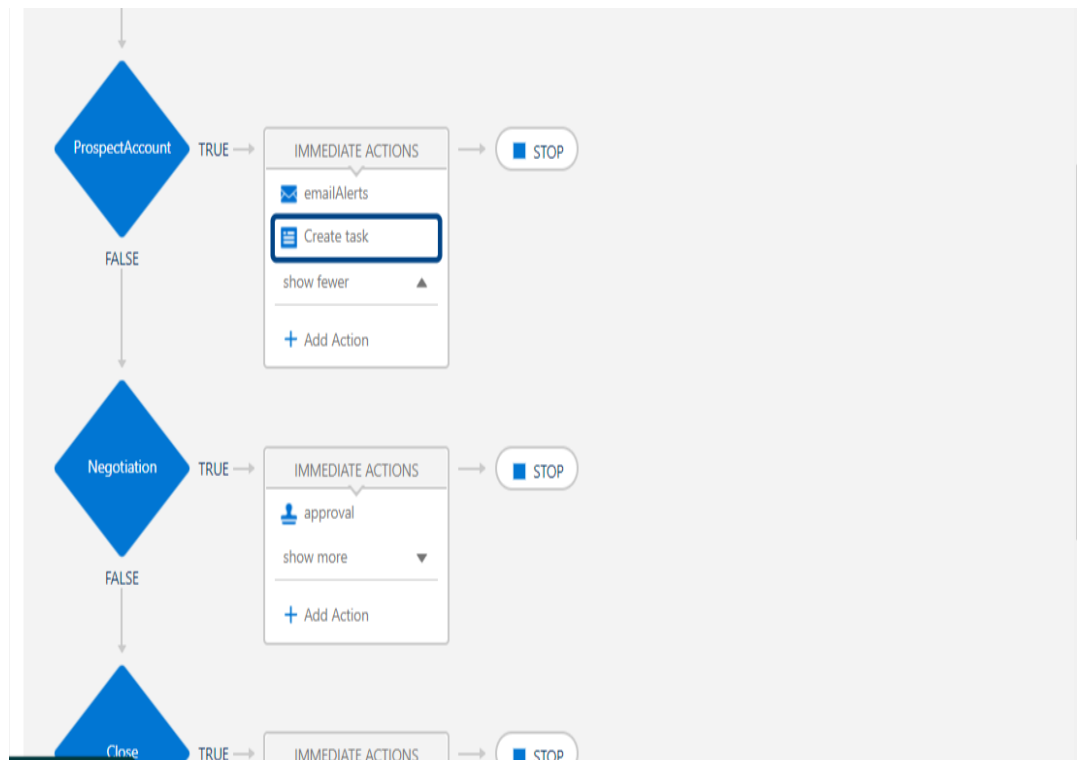
Z

Other

All

Then we created OpportunityProcess with Process Builder:





**ACTION NAME**

Create task

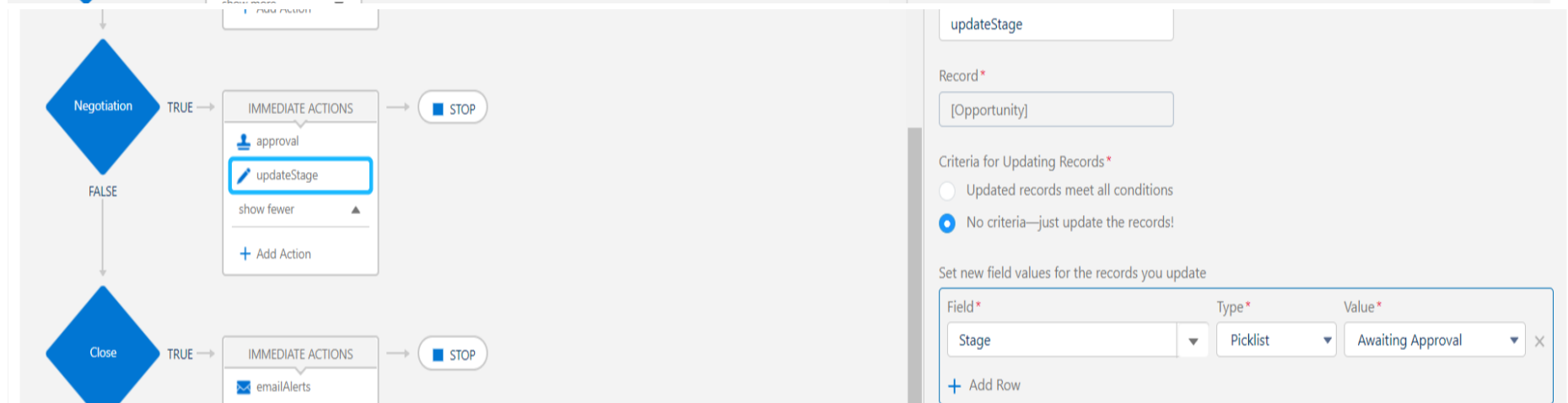
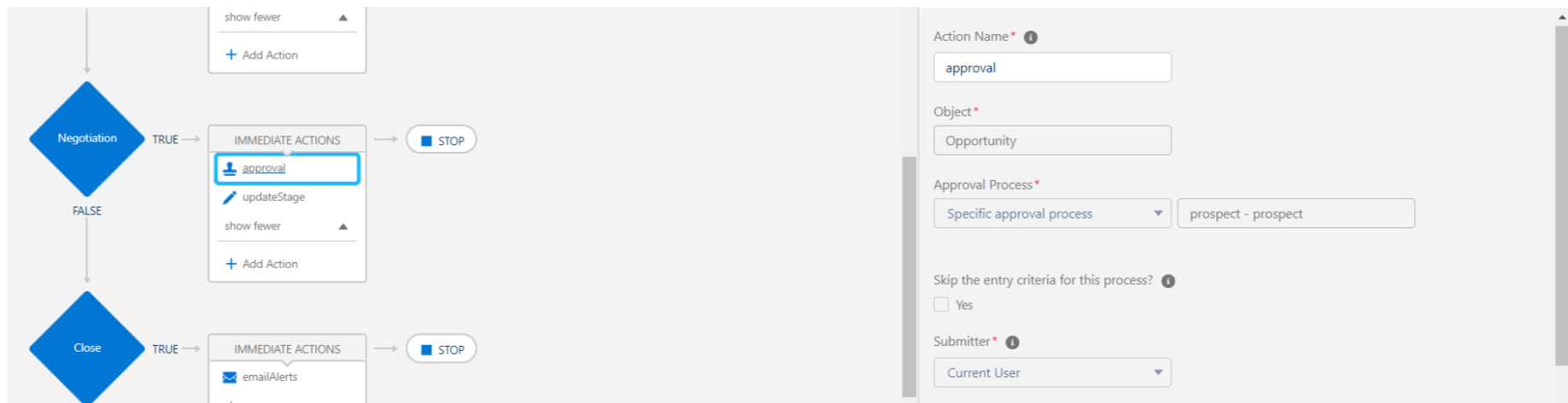
**Record Type\***

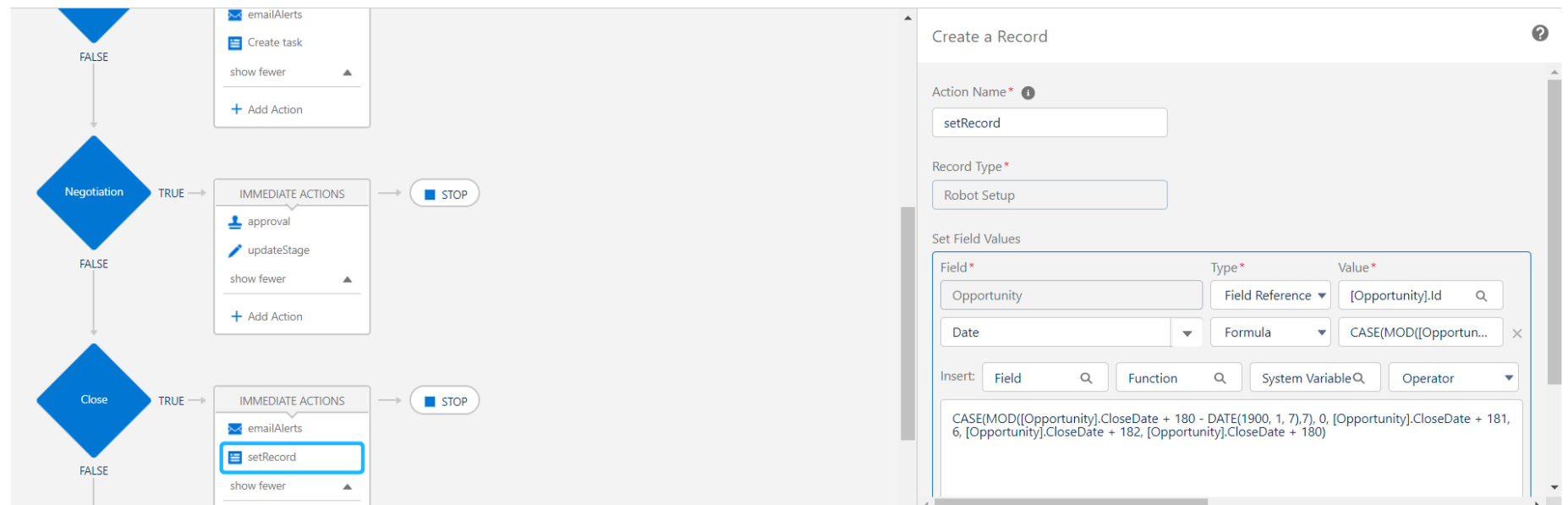
Task

**Set Field Values**

Field*	Type*	Value*
Due Date Only	Formula	Today() + 7
Assigned To ID	Field Reference	[Opportunity].Acco... Q
Priority	Picklist	High
Status	Picklist	In Progress
Subject	String	Send Marketing Materia
Related To ID	Field Reference	[Opportunity].Id Q

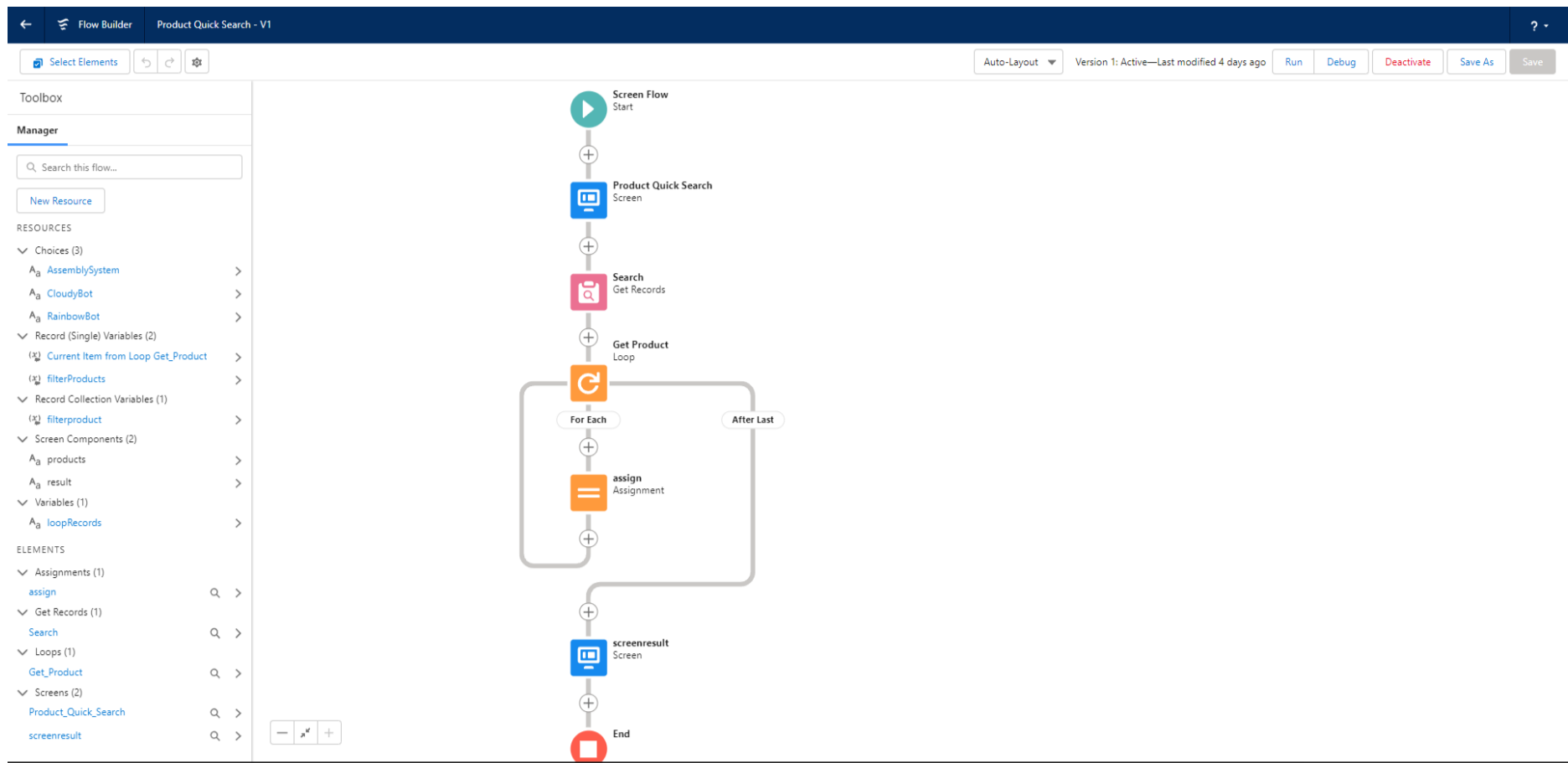
+ Add Row





## CHALLENGE 6: CREATE FLOW FOR OOPORTUNITIES:

A flow is created named PRODUCT QUICK SEARCH. And after creating it we use any template in Lightning app builder to save it



Team detail xMandatory xUnit-Wise xKCS-401 OS xControl Proc xRecently Vis xFlows | Sale xProduct Qu xSPSPG-173 xStudent Da x

mindful-raccoon-epb7ns-dev-ed.lightning.force.com/builder\_platform\_interaction/flowBuilder.app?flowId=3017R000000UxFRQA0

mindful-raccoon-epb7ns-dev-ed

36°C  
Mostly sunny

ENG  
IN15:40  
27-06-2022

ComponentsFields (Beta)

Search components...

Input (24)

Address

Call Script

Checkbox

Checkbox Group

Currency

Date

Date & Time

Dependent Picklists

Display Image

Email

File Upload

Long Text Area

Lookup

Multi-Select Picklist

Name

Number

Password

Get more on the AppExchange

Product Quick Search

Radio Buttons

products

☐ RainbowBot

☐ CloudyBot

☐ Assembly System

Pause

Previous

Finish

Radio Buttons

Label

products

\* API Name

products

☐ Require

Data Type

Text

Configure Choices

Let Users Select Multiple Options

☐ Yes

☒ No

Component Type

Radio Buttons

\* Choice

{!RainbowBot}

\* Choice

{!CloudyBot}

\* Choice

{!AssemblySystem}

Cancel

Done



Team detail xMandatory xUnit-Wise xKCS-401 OS xControl Proc xRecently Visited xFlows | Sales xProduct Quick Search xSPSGP-173 xStudent Data x

mindful-raccoon-epb7ns-dev-ed.lightning.force.com/builder\_platform\_interaction/flowBuilder.app?flowId=3017R000000UxFRQA0

Flow BuilderProduct Quick Search - V1

Select Elements

Toolbox

Manager

Search this flow...

New Resource

RESOURCES

Choices (3)

AssemblySystem

CloudyBot

RainbowBot

Record (Single) Variables (2)

Current Item from Loop Get\_Product

filterProducts

Record Collection Variables (1)

filterproduct

Screen Components (2)

products

result

Variables (1)

loopRecords

ELEMENTS

Assignments (1)

assign

Get Records (1)

Search

Loops (1)

Get\_Product

Screens (2)

Product\_Quick\_Search

screenresult

End

1: Active—Last modified 4 days ago

Run

Debug

Deactivate

Save As

Save

15:40

27-06-2022

Edit Get Records

Find Salesforce records and store their field values in flow variables.

Search (Search)

Get Records of This Object

Object

Equipment

Filter Equipment Records

Condition Requirements

All Conditions Are Met (AND)

Field

Name

Operator

Contains

Value

products

Add Condition

Sort Equipment Records

Sort Order

Not Sorted

If you store only the first record, filter by a unique field, such as ID.

How Many Records to Store

Only the first record

All records

How to Store Record Data

Automatically store all fields

Choose fields and let Salesforce do the rest

Choose fields and assign variables (advanced)

Cancel

Done

## CHALLENGE 7: AUTOMATE SETUP:

In robot setup object => day of week field of formula type update formula:

Case ( WEEKDAY( Date\_\_c ), 1,"Sunday", 2,"Monday", 3,"Tuesday", 4,"Wednesday", 5,"Thursday", 6,"Friday", 7,"Saturday", Text(WEEKDay(Date\_\_c)))

And then in process builder=> OpportunityProcess update date field formula:

CASE(MOD([Opportunity].CloseDate + 180 - DATE(1900, 1, 7),7), 0, [Opportunity].CloseDate + 181, 6, [Opportunity].CloseDate + 182, [Opportunity].CloseDate + 180)

---



Superbadge

### Apex Specialist

Use integration and business logic to push your Apex coding skills to the limit.



+13,000 POINTS

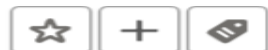
Completed 6/24/22



Module

### Leads & Opportunities for Lightning Experience

Learn to power your sales process with leads and opportunities in Salesforce.



+1,200 POINTS

Completed 6/4/22



Superbadge

### Process Automation Specialist

Showcase your mastery of business process automation without writing a line of code.



+10,000 POINTS

Completed 6/23/22



Completed 6/24/22

HENCE, BOTH OF MY SUPERBADGES(APEX SPECIALIST , PROCESS AUTOMATION SPECIALIST) ALONG WITH COMPLETE SALESFORCE DEVELOPER CATALYST MODULE ARE **DONE** .

**HERE IS MY TRAILHEAD PLAYGROUND LINK:**

<https://trailblazer.me/id/ssingh3255>

**THANK YOU!**