

SALESFORCE DEVELOPER CATALYST SELF LEARNING SUPER BADGES

TRAILHEAD LINK: <https://trailblazer.me/id/pradosh0414>

APEX SPECIALIST SUPERBADGE LINK -

https://trailhead.salesforce.com/content/learn/superbadges/superbadge_apex

CHALLENGE - 1 : QUIZ

CHALLENGE - 2 : AUTOMATE RECORD CREATION

CODE USED FOR THIS CHALLENGE:

MaintenanceRequestHelper Apex Class:

```
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()){
            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>();
            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 (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);
}

```

```

insert newCases;

```

```

List<Equipment_Maintenance_Item__c> clonedList = new
List<Equipment_Maintenance_Item__c>();
for (Case nc : newCases){
    for (Equipment_Maintenance_Item__c clonedListItem :
closedCases.get(nc.ParentId).Equipment_Maintenance_Items__r){

```

```

        Equipment_Maintenance_Item__c item = clonedListItem.clone();
        item.Maintenance_Request__c = nc.Id;
        clonedList.add(item);
    }
}
insert clonedList;
}
}
}

```

MaintenanceRequest Apex Trigger :

```

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

```

CHALLENGE - 3 : SYNCHRONIZE SALESFORCE DATA WITH AN EXTERNAL SYSTEM

CODE USED FOR THIS CHALLENGE :

WarehouseCalloutService Apex Class:

```
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());

            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 - 4 : SCHEDULE SYNCHRONIZATION

CODE USED FOR THIS CHALLENGE :

WarehouseSyncSchedule Apex Class:

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

CHALLENGE - 5 : TEST AUTOMATION LOGIC

CODE USED FOR THIS CHALLENGE :

MaintenanceRequestHelperTest Apex Class:

```
@isTest
public with sharing class MMJhwmfTYJVFm9TiUdmYYyrf6Pzpzf3YN1 {

    // 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++){

equipmentMaintenanceItemlList.add(createEquipmentMaintenanceItem(equipmentList.
get(i).id, caseList.get(i).id));
        }
        insert equipmentMaintenanceItemlList;

        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);
    }
}

```

CHALLENGE - 6 : TEST CALLOUT LOGIC

CODE USED FOR THIS CHALLENGE:

WarehouseCalloutServiceMock Apex Class:

```
@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
        726b611100aaf742", "replacement": true, "quantity": 183, "name": "Cooling
        Fan", "maintenanceperiod": 0, "lifespan": 0, "cost": 300, "sku": "100004" }, { "_id": "55d66226726b6
        11100aaf743", "replacement": true, "quantity": 143, "name": "Fuse
        20A", "maintenanceperiod": 0, "lifespan": 0, "cost": 22, "sku": "100005" } ]');
        response.setStatusCode(200);

        return response;
    }
}
```

WarehouseCalloutServiceTest Apex Class:

```
@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);
    }
}

```

CHALLENGE - 7 : TEST SCHEDULING LOGIC

CODE USED FOR THIS CHALLENGE:

WarehouseSyncScheduleTest Apex Class:

```

@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();
}
}

```

The screenshot displays the Salesforce Trailhead interface for the Apex Specialist Superbadge. At the top, the user's profile is visible with the name Pradosh Sharma, 39 badges, and 58,400 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 checkmark. The badge description states: "Use integration and business logic to push your Apex coding skills to the limit." The completion status is "Completed 6/20/22". A section titled "Prerequisites" shows a sequence of five badges: Apex Triggers, Apex Testing, Asynchronous Apex, Apex Integration Services, and Apex Specialist, all marked with green checkmarks.

PROCESS AUTOMATION SPECIALIST SUPERBADGE LINK -

https://trailhead.salesforce.com/content/learn/superbadges/superbadge_process_automation

Challenge 1

Validation Rule

- a. Check the function forLength.
- b. Remember to check the NULL Values in Validation rule.

Queue Creation

- c. This is straightforward normal Queue creation
- d. Create Names with related to appropriate sales team.

Assignment Rule

- e. Create new Assignment rule for this scenario(Do not use the standard rule).
- f. Make sure that you rule is Active before you validate this step.

Challenge 2

Field Creations on Account Object

- g. **Number of deals** Field should be a Roll-Up Summary take count of COUNT Opportunities
- h. **Number of won deals** Field should be a Roll-Up Summary (COUNT Opportunity) with filter criteria of Closed Won
- i. **Amount of won deals** Field should be a Roll-Up Summary (SUM Opportunity) with filter criteria of Closed Won
- j. **Last won deal date** Field should be a Roll-Up Summary (MAX Opportunity)
- k. **Deal win percent** Field should be a Formula(Percentage field) IF Number_of_deals c greater than 0 the , Number_of_won_deals c /Number_of_dealsc otherwise Zero

- l. **Call for Service** Field should be a Formula (Date)
IF(OR(TODAY() – 730 > Last_won_deal_date c , TODAY() + 7 < Last_won_deal_date c), 'Yes','No')

Validation Rules on Account Object

- m. For Customer – Channel

ISCHANGED(Name) && ISPICKVAL(Type, "Customer – Channel")

- n. For Customer – Direct

ISCHANGED(Name) && ISPICKVAL(Type, "Customer – Direct")

- o. For Billing

State/Pro

vince

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))

- p. For Billing Country

BillingCountry <> "US" && BillingCountry <> "USA" && BillingCountry <> "United States" && NOT(ISBLANK(BillingCountry))

- q. For Shipping State/Province and Shipping Country

Don't forget replicate For Shipping State/Province and Shipping Country same as Billing State/Province and Billing Country validation which I have mentioned above.

Challenge 3

It can be done easily:

- r. Create a object and make sure the object name should be **Robot_Setup__c**
- s. Edit the Robot name(Standard field) switch the data type from Text to AutoNumber and make sure the display format should be **ROBOT SETUP-{0000}**
- t. Create following fields with

correct data type:

Date----->Date

c----->DATE

Notes-----> Notes

c----->TEXT

Day of the Week-->Day_of_the_Weekc--->TEXT

Challenge 4

- u. Create Sales Process in Opportunity; the name should be **RB Robotics Sales Process**.
- v. Create a record type; the name should be **RB Robotics Process RT**.
- W.**Add **Awaiting Approval** value in opportunity Stage don't forget to add RB Robotics Process RT record type.
- x. Create a Checkbox field and Name it **Approved**.

y. Write a validation rule as below:

AND(Amount > 100000, Approvedc = False)

Challenge 5

Approval Process Definition Detail: See the screenshot below for details

The screenshot displays the Salesforce Setup interface for Approval Processes. The left sidebar shows the navigation menu with 'Approval Processes' selected under 'Process Automation'. The main content area shows the 'Process Definition Detail' for the 'prospect' process. The process is active and has a unique name of 'prospect'. The entry criteria is '(Opportunity: Amount GREATER THAN 100000) AND (Opportunity: Stage EQUALS Negotiation/Review)'. The record editability is set to 'Administrator ONLY'. The approval assignment email template is 'SALES: Opportunity Needs Approval'. The initial submitters are 'Opportunity Owner, User: Nushi Davoud'. The process was created by 'Pradosh Sharma' on 6/21/2022 at 9:25 AM and modified by 'Pradosh Sharma' on 6/21/2022 at 9:33 AM. The 'Initial Submission Actions' section is also visible at the bottom.

Approval Processes | Salesforce

empathetic-panda-dhzbkc-dev-ed.lightning.force.com/lightning/setup/ApprovalProcesses/page?address=%2F04a5h000000L7IT

Process Builder step... ADM 201 Meet - akh-cdea-ogj Watch Haikyuu!! Ep...

Search Setup

Setup Home Object Manager

approval

Mass Transfer Approval Requests

Process Automation

Approval Processes

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

Approval Processes

Opportunity: prospect

Back to Approval Process List

Process Definition Detail

Edit Clone Deactivate

Process Name: prospect

Unique Name: prospect

Description:

Entry Criteria: (Opportunity: Amount GREATER THAN 100000) AND (Opportunity: Stage EQUALS Negotiation/Review)

Record Editability: Administrator ONLY

Approval Assignment Email Template: SALES: Opportunity Needs Approval

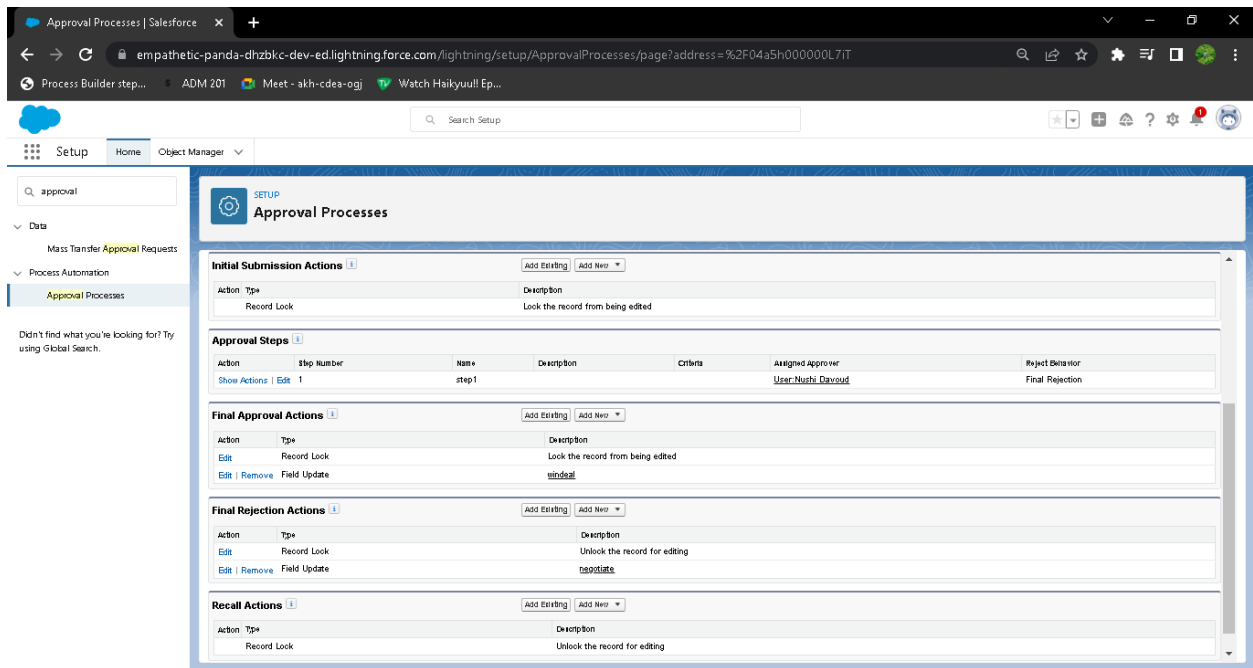
Initial Submitters: Opportunity Owner, User: Nushi Davoud

Created By: Pradosh Sharma, 6/21/2022, 9:25 AM

Modified By: Pradosh Sharma, 6/21/2022, 9:33 AM

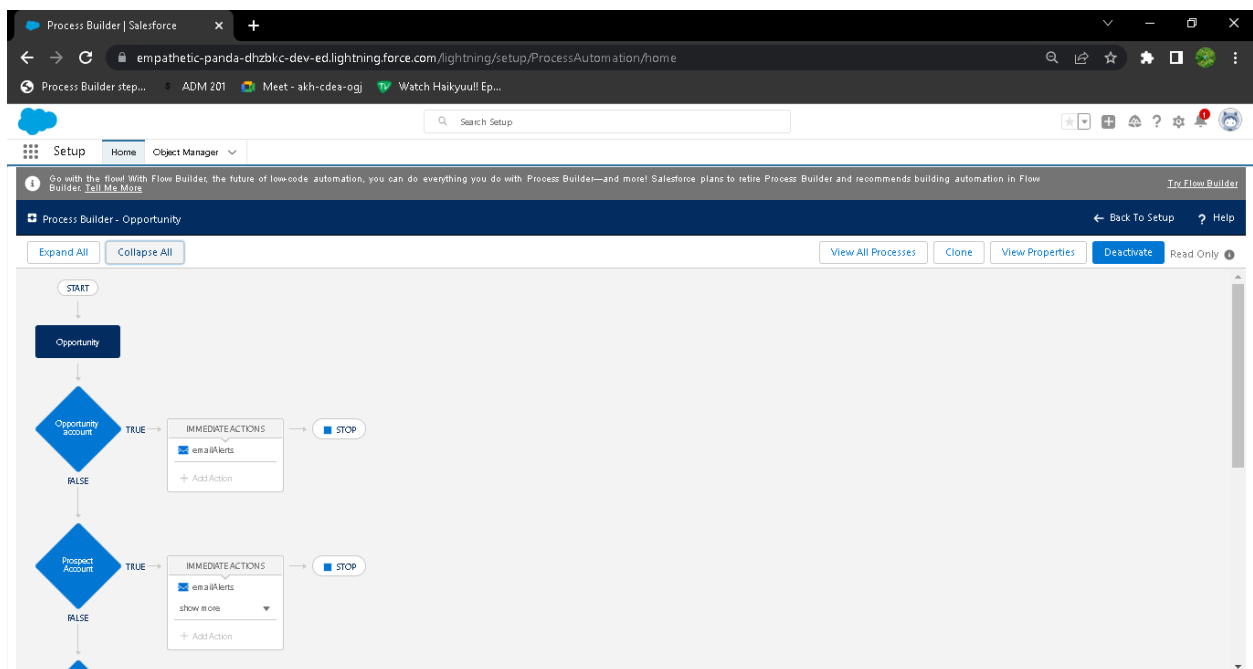
Initial Submission Actions

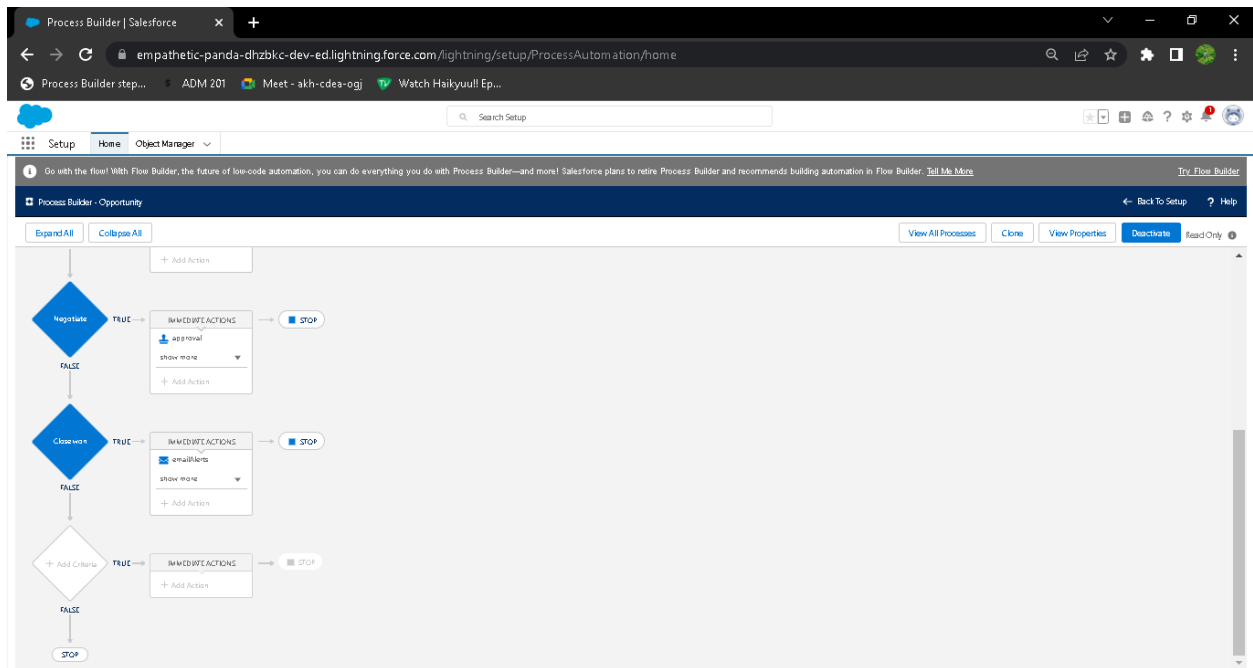
Add Existing Add New



It's time to create **Process Builder**.

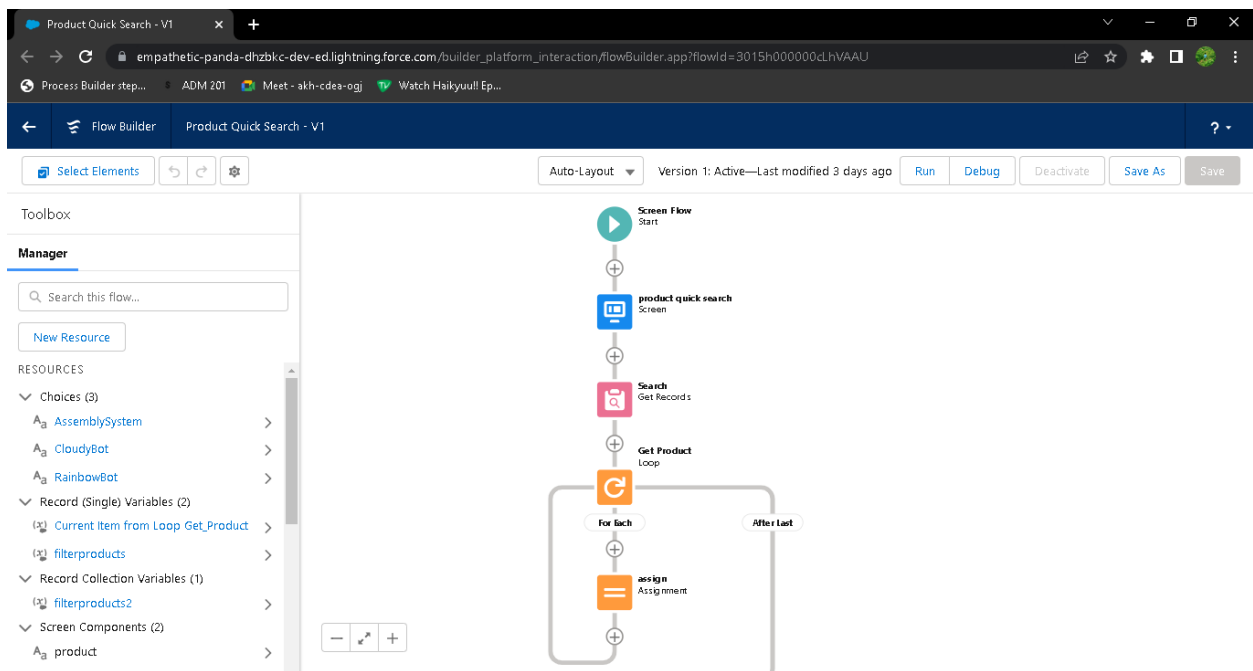
Name : Opportunity

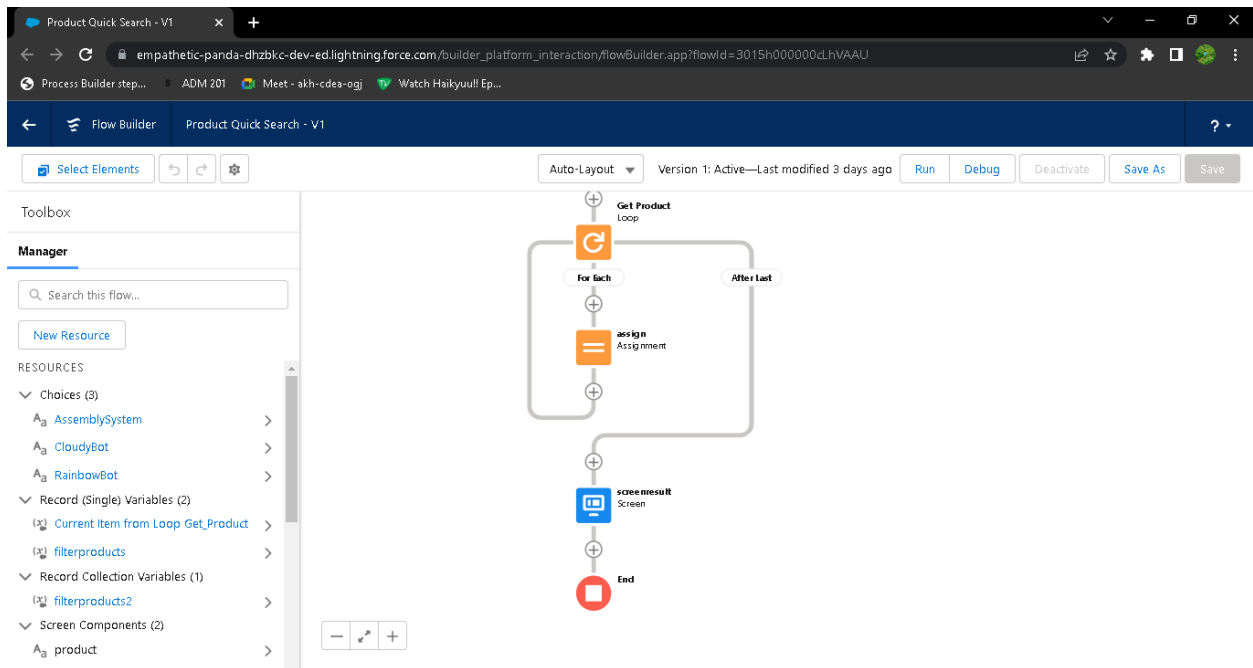




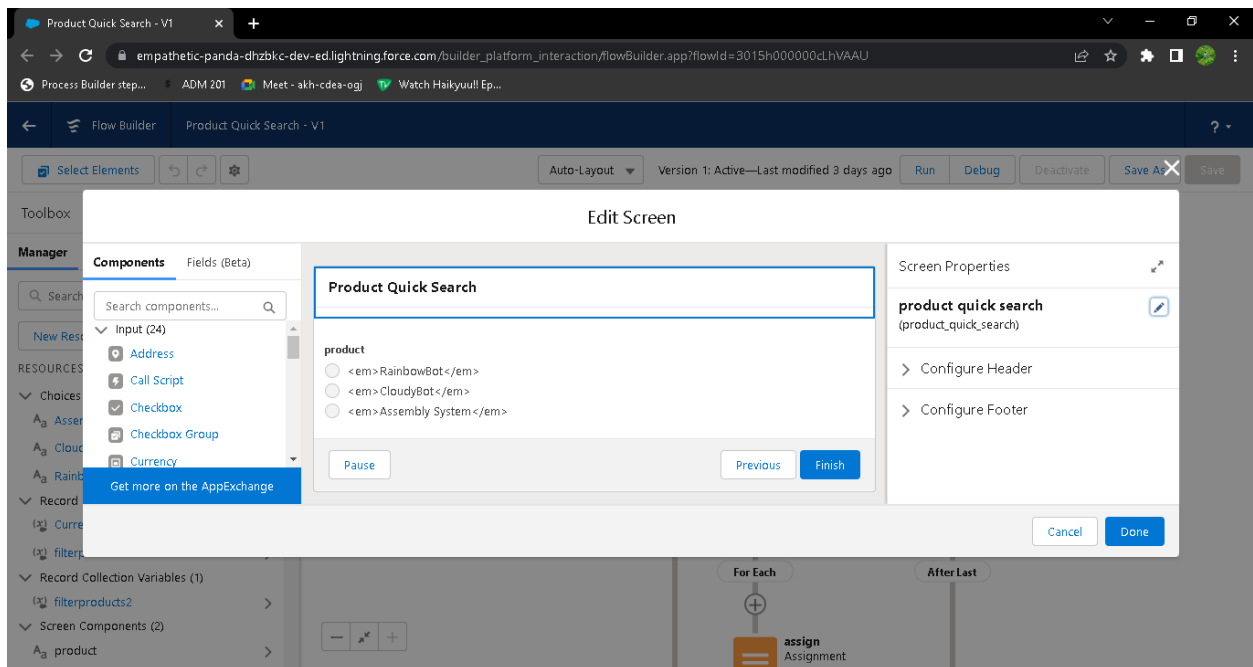
Challenge 6

Create the flow to display products.

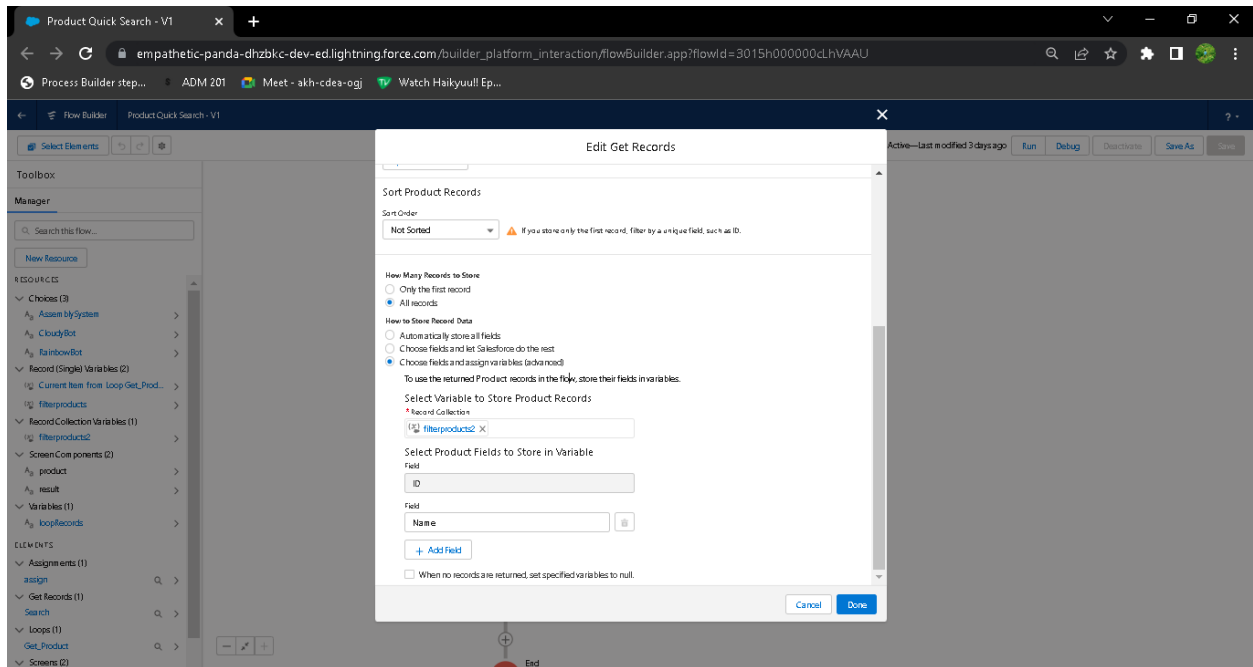
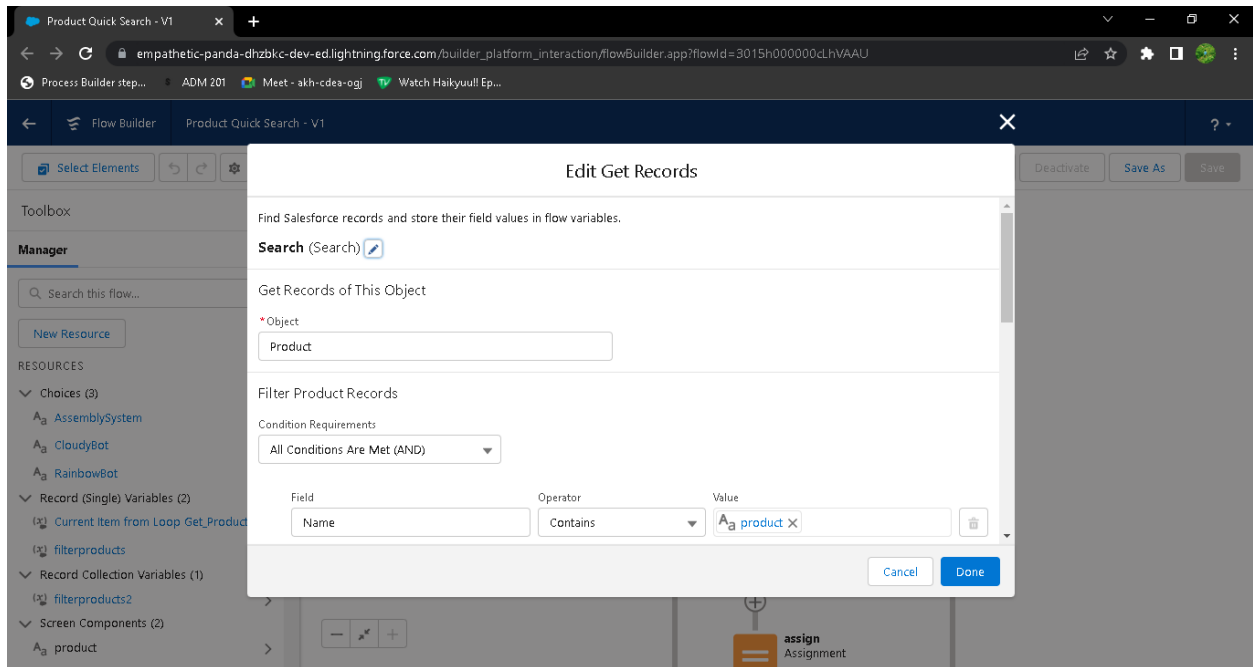


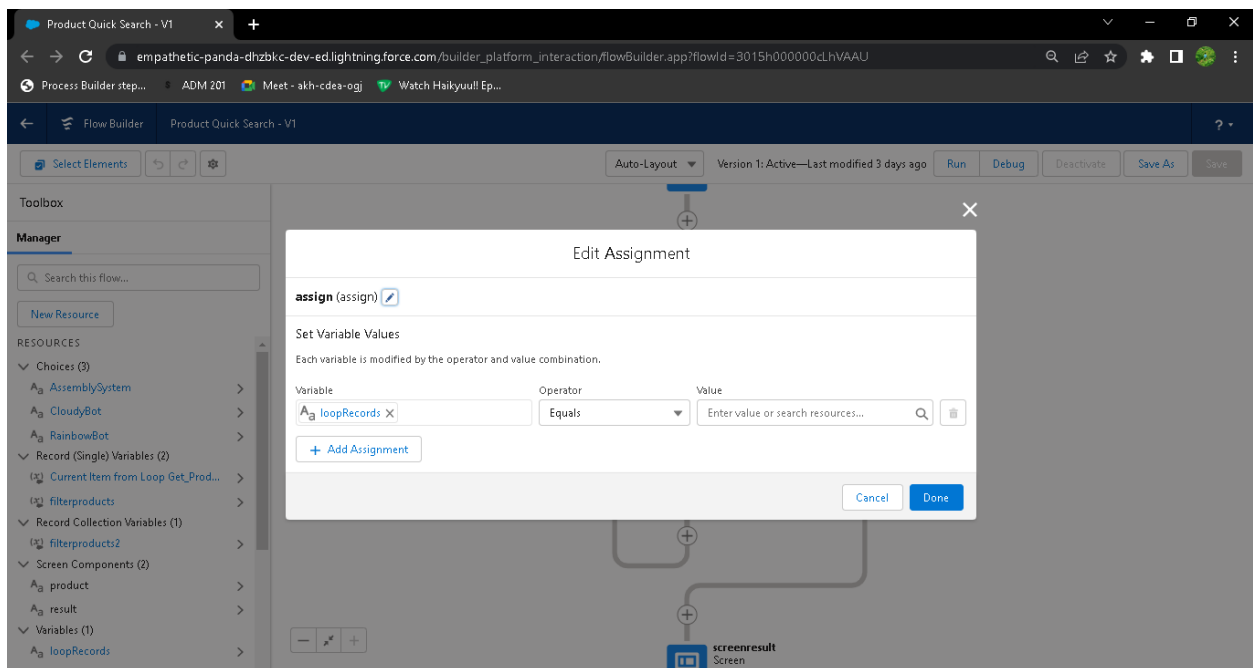
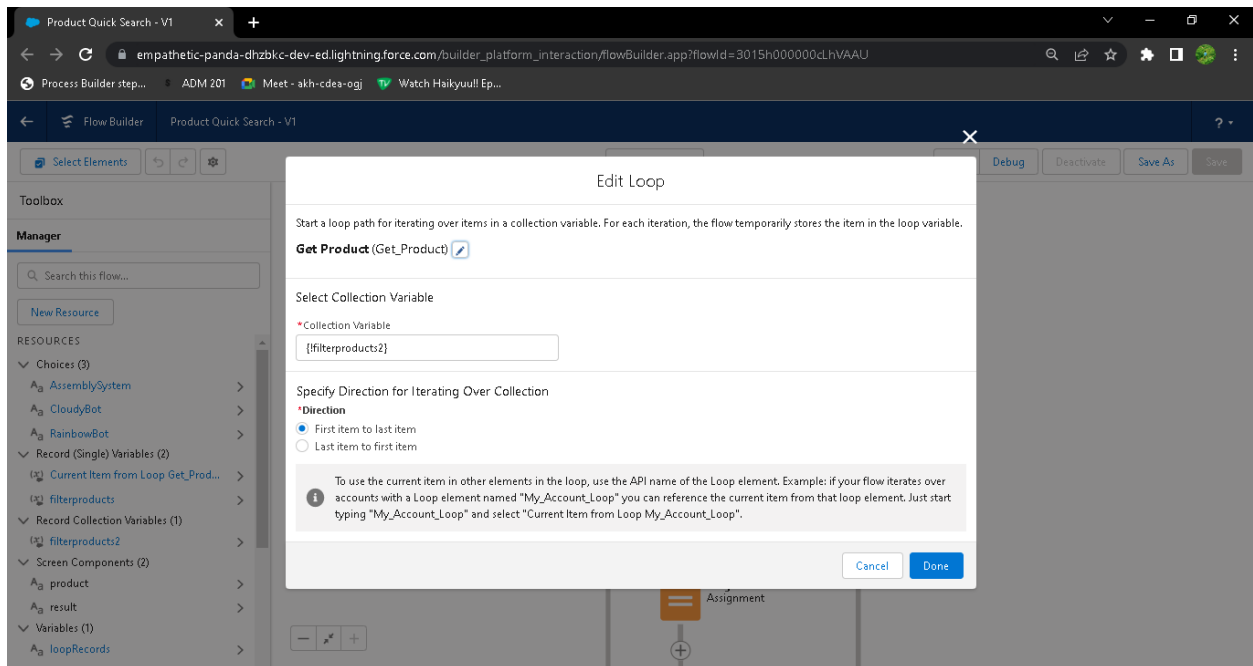


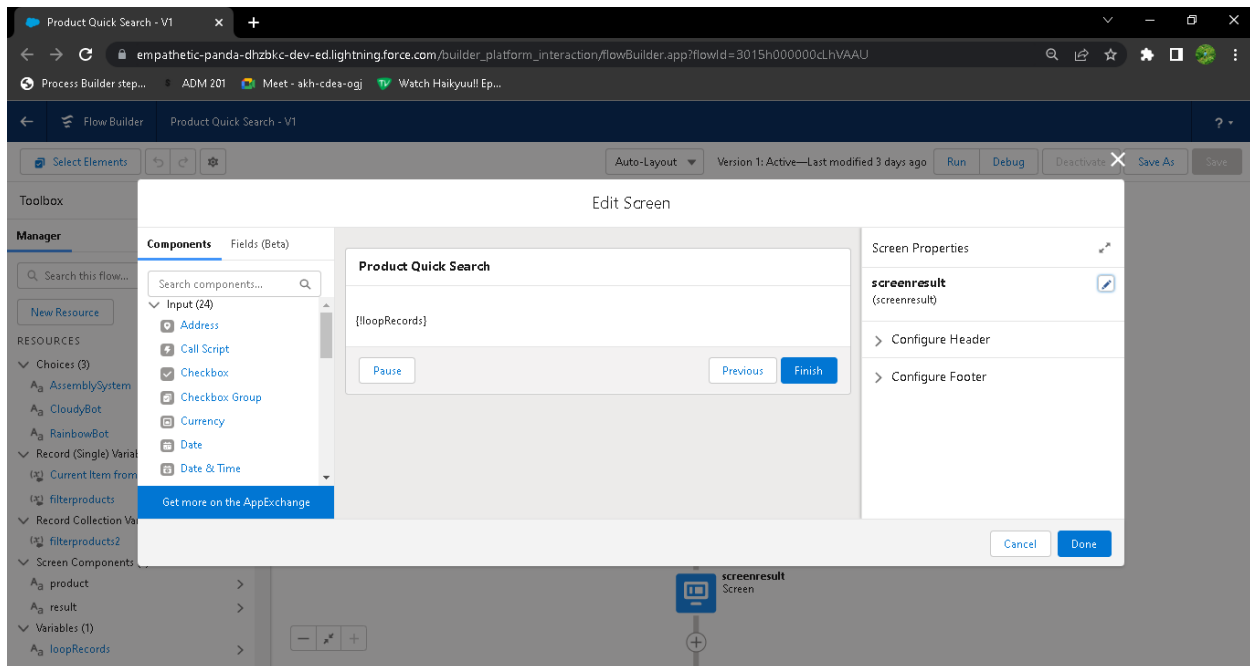
SCREEN(PRODUCT TYPE SEARCH) Properties:



Get Records (Product Name Lookup) Properties:



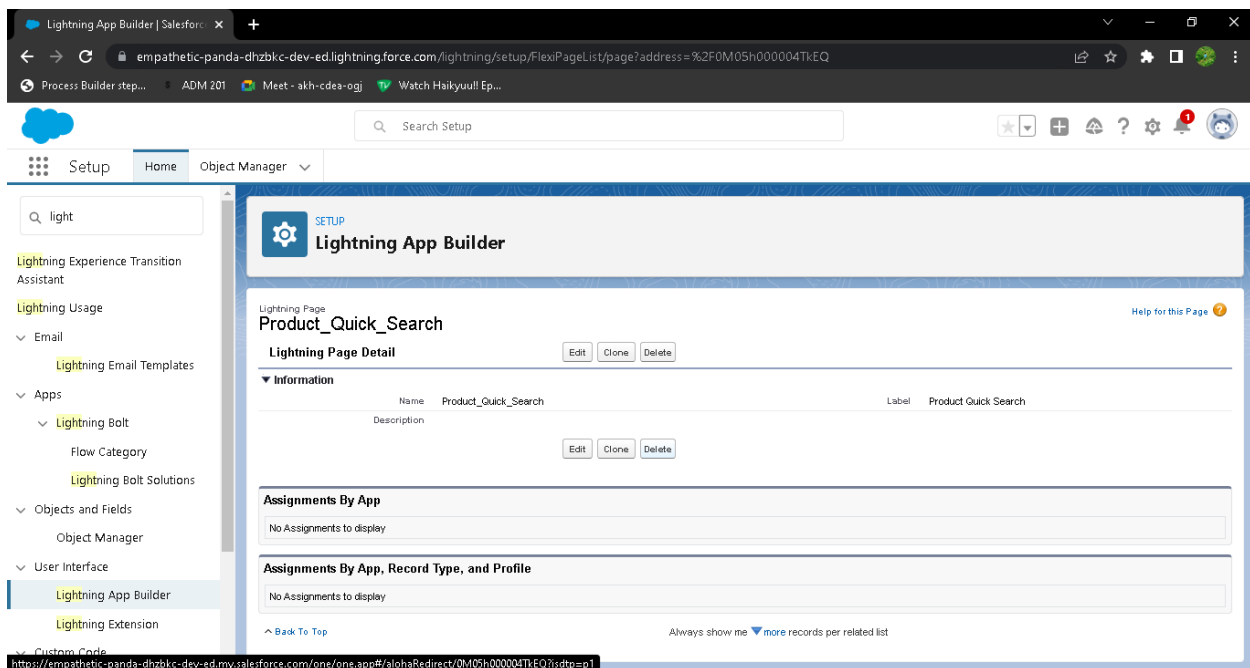




- Activate the flow
- Add the flow to the opportunity screen using app builder.

Create a Record Page on Opportunity Object:

Go to Lightning App Builder page and click new. Record Page Properties are as follows:-



- Add the component on newly created Opportunity Record Page.
- Please don't forget to Activate the page.

Challenge 7

- Change the datatype for "Day of the week" field from TEXT to Formula (TEXT) and use the following the formula to get Day of the week

CASE(MOD(Datec – DATE(1900, 1, 7), 7), 0, "Sunday", 1, "Monday", 2, "Tuesday", 3, "Wednesday", 4, "Thursday", 5, "Friday", 6,

"Saturday","Error") Or You can use this formula

also instead of above formula

CASE(WEEKDAY(Datec),

1, "Sunday",

2, "Monday",

3, "Tuesday",

4, "Wednesday",

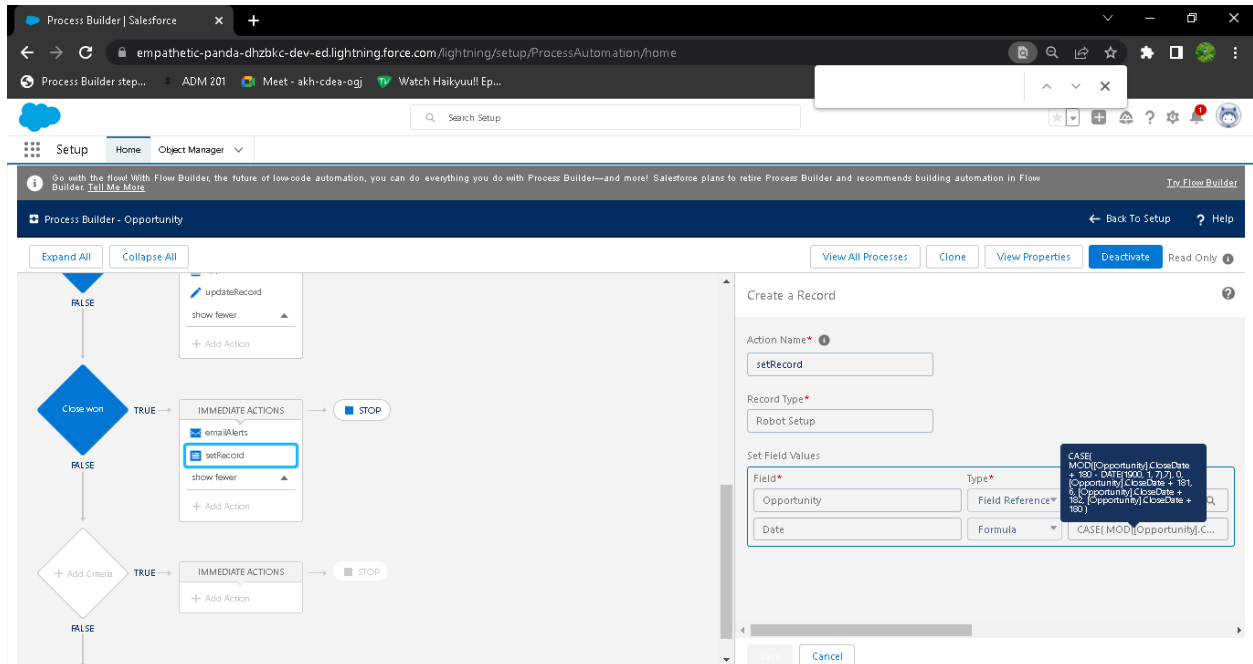
5, "Thursday",

6, "Friday",

7, "Saturday",

Text(WEEKDAY(Datec)))

Update the process Opportunity to handle the robot setup saturday date case:



Process Builder - Opportunity

Expand All Collapse All

View All Processes Clone View Properties Deactivate Read Only

Create a Record

Action Name*

Record Type*

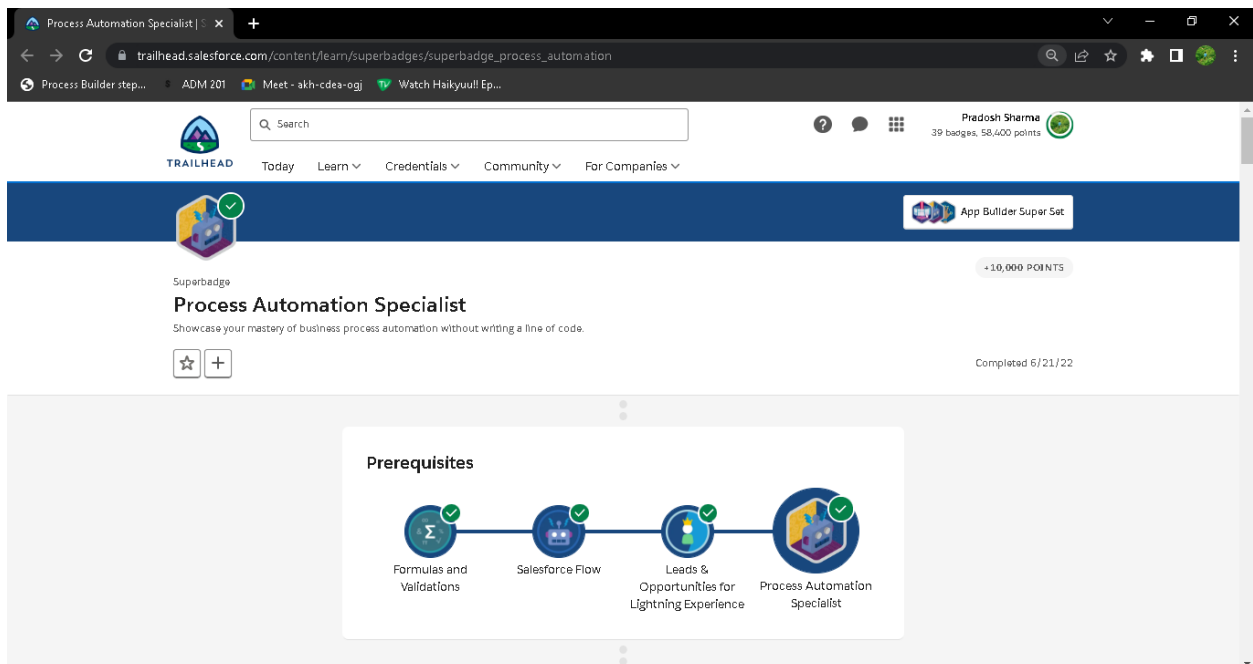
Set Field Values

Field*	Type*
Opportunity	Field Reference*
Date	Formula

Formula: CASE[MOD((Opportunity).CloseDate + 180 - DATE(2000, 1, 1), 7), 0] : (Opportunity).CloseDate + 181, 6 : (Opportunity).CloseDate + 182, (Opportunity).CloseDate + 180]

Cancel

Activate the Process and you are done!



Process Automation Specialist

Trailhead

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☆ +

Completed 6/21/22

Prerequisites

Formulas and Validations

Salesforce Flow

Leads & Opportunities for Lightning Experience

Process Automation Specialist