Apex Specialist Code

1. CreateDefaultData

```
  public with sharing class CreateDefaultData{
 Static Final String TYPE_ROUTINE_MAINTENANCE = 'Routine Maintenance';
 //gets value from custom metadata How_We_Roll_Settings__mdt to know if Default data was
created
 @AuraEnabled
 public static Boolean isDataCreated() {
    How_We_Roll_Settings__c        customSetting =
How_We_Roll_Settings__c.getOrgDefaults();
    return customSetting.Is_Data_Created__c;
 }

 //creates Default Data for How We Roll application
 @AuraEnabled
 public static void createDefaultData(){
    List<Vehicle__c> vehicles = createVehicles();
    List<Product2> equipment = createEquipment();
    List<Case> maintenanceRequest = createMaintenanceRequest(vehicles);
    List<Equipment_Maintenance_Item__c> joinRecords = createJoinRecords(equipment,
maintenanceRequest);

    updateCustomSetting(true);
 }


 public static void updateCustomSetting(Boolean isDataCreated){
    How_We_Roll_Settings__c        customSetting =
How_We_Roll_Settings__c.getOrgDefaults();
    customSetting.Is_Data_Created__c = isDataCreated;
    upsert customSetting;
 }

 public static List<Vehicle__c> createVehicles(){
    List<Vehicle__c> vehicles = new List<Vehicle__c>();
    vehicles.add(new Vehicle__c(Name = 'Toy Hauler RV', Air_Conditioner__c = true,
Bathrooms__c = 1, Bedrooms__c = 1, Model__c = 'Toy Hauler RV'));
    vehicles.add(new Vehicle__c(Name = 'Travel Trailer RV', Air_Conditioner__c = true,
Bathrooms__c = 2, Bedrooms__c = 2, Model__c = 'Travel Trailer RV'));
    vehicles.add(new Vehicle__c(Name = 'Teardrop Camper', Air_Conditioner__c = true,
Bathrooms__c = 1, Bedrooms__c = 1, Model__c = 'Teardrop Camper'));
        vehicles.add(new Vehicle__c(Name = 'Pop-Up Camper', Air_Conditioner__c = true,
Bathrooms__c = 1, Bedrooms__c = 1, Model__c = 'Pop-Up Camper'));
        insert vehicles;
        return vehicles;
    }

    public static List<Product2> createEquipment(){
        List<Product2> equipments = new List<Product2>();
        equipments.add(new Product2(Warehouse_SKU__c = '55d66226726b611100aaf741',name
= 'Generator 1000 kW', Replacement_Part__c = true,Cost__c = 100 ,Maintenance_Cycle__c =
100));
        equipments.add(new Product2(name = 'Fuse 20B',Replacement_Part__c = true,Cost__c =
1000, Maintenance_Cycle__c = 30  ));
        equipments.add(new Product2(name = 'Breaker 13C',Replacement_Part__c = true,Cost__c =
100  , Maintenance_Cycle__c = 15));
        equipments.add(new Product2(name = 'UPS 20 VA',Replacement_Part__c = true,Cost__c =
200  , Maintenance_Cycle__c = 60));
        insert equipments;
        return equipments;

    }

    public static List<Case> createMaintenanceRequest(List<Vehicle__c> vehicles){
        List<Case> maintenanceRequests = new List<Case>();
        maintenanceRequests.add(new Case(Vehicle__c = vehicles.get(1).Id, Type =
TYPE_ROUTINE_MAINTENANCE, Date_Reported__c = Date.today()));
        maintenanceRequests.add(new Case(Vehicle__c = vehicles.get(2).Id, Type =
TYPE_ROUTINE_MAINTENANCE, Date_Reported__c = Date.today()));
        insert maintenanceRequests;
        return maintenanceRequests;
    }

    public static List<Equipment_Maintenance_Item__c> createJoinRecords(List<Product2>
equipment, List<Case> maintenanceRequest){
        List<Equipment_Maintenance_Item__c> joinRecords = new
List<Equipment_Maintenance_Item__c>();
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(0).Id, Maintenance_Request__c = maintenanceRequest.get(0).Id));
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(1).Id, Maintenance_Request__c = maintenanceRequest.get(0).Id));
```

```
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(2).Id, Maintenance_Request__c = maintenanceRequest.get(0).Id));
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(0).Id, Maintenance_Request__c = maintenanceRequest.get(1).Id));
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(1).Id, Maintenance_Request__c = maintenanceRequest.get(1).Id));
        joinRecords.add(new Equipment_Maintenance_Item__c(Equipment__c =
equipment.get(2).Id, Maintenance_Request__c = maintenanceRequest.get(1).Id));
        insert joinRecords;
        return joinRecords;

    }
}
```

1. CreateDefaultDataTest

```
      @isTest
private class CreateDefaultDataTest {
    @isTest
    static void createData_test(){
        Test.startTest();
        CreateDefaultData.createDefaultData();
        List<Vehicle__c> vehicles = [SELECT Id FROM Vehicle__c];
        List<Product2> equipment = [SELECT Id FROM Product2];
        List<Case> maintenanceRequest = [SELECT Id FROM Case];
        List<Equipment_Maintenance_Item__c> joinRecords = [SELECT Id FROM
Equipment_Maintenance_Item__c];

        System.assertEquals(4, vehicles.size(), 'There should have been 4 vehicles created');
        System.assertEquals(4, equipment.size(), 'There should have been 4 equipment created');
        System.assertEquals(2, maintenanceRequest.size(), 'There should have been 2
maintenance request created');
        System.assertEquals(6, joinRecords.size(), 'There should have been 6 equipment
maintenance items created');

    }

    @isTest
    static void updateCustomSetting_test(){
        How_We_Roll_Settings__c          customSetting =
How_We_Roll_Settings__c.getOrgDefaults();
        customSetting.Is_Data_Created__c = false;
        upsert customSetting;

        System.assertEquals(false, CreateDefaultData.isDataCreated(), 'The custom setting
How_We_Roll_Settings__c.Is_Data_Created__c should be false');

        customSetting.Is_Data_Created__c = true;
        upsert customSetting;

        System.assertEquals(true, CreateDefaultData.isDataCreated(), 'The custom setting
How_We_Roll_Settings__c.Is_Data_Created__c should be true');

    }
}
```

3.MaintenanceRequestHelper

```
     public with sharing class MaintenanceRequestHelper {
    public static void updateWorkOrders() {
        List<case> newCaseList = new List<case>();
        Integer avgAmount=10000;

        List<Equipment_Maintenance_Item__c> newEMI = new
List<Equipment_Maintenance_Item__c>();
        List<case> caseList = [SELECT id,Vehicle__c,Subject,ProductID,Product__c, (SELECT id from
Equipment_Maintenance_Items__r) from case where status='closed' and Type IN ('Repair',
'Routine Maintenance') and ID IN :Trigger.new LIMIT 200];
        Map<id,Equipment_Maintenance_Item__c> equip = new
map<id,Equipment_Maintenance_Item__c>([Select ID, Equipment__c,
Quantity__c,Equipment__r.id,Equipment__r.Maintenance_Cycle__c from
Equipment_Maintenance_Item__c ]);
        for(case c: caseList){
            case newCase = new Case();
            newCase.Type = 'Routine Maintenance';
            newCase.Status = 'New';
            newCase.Vehicle__c = c.Vehicle__c;
            newCase.Subject =  String.isBlank(c.Subject) ? 'Routine Maintenance Request' : c.Subject;
            newCase.Date_Reported__c = Date.today();
            newCase.ProductId = c.ProductId;
            newCase.Product__c = c.Product__c;
            newCase.parentID = c.Id;
            for(Equipment_Maintenance_Item__c emi : c.Equipment_Maintenance_Items__r ){
                avgAmount =
Math.min(avgAmount,Integer.valueOf(equip.get(emi.id).Equipment__r.Maintenance_Cycle__c));
                newEMI.add(new Equipment_Maintenance_Item__c(
                    Equipment__c = equip.get(emi.id).Equipment__c,
                    Maintenance_Request__c = c.id,
                    Quantity__c = equip.get(emi.id).Quantity__c));
            }
            Date dueDate = date.TODAY().adddays(avgAmount);
            newCase.Date_Due__c =dueDate;
            newCaseList.add(newCase);

        }
        if(newCaseList.size()>0){
            Database.insert(newCaseList);
        }

        for(Case c2: newCaseList){
            for(Equipment_Maintenance_Item__c emi2 : newEmi){
                if(c2.parentID == emi2.Maintenance_Request__c){
                    emi2.Maintenance_Request__c = c2.id;
                }
            }
        }

        if(newEmi.size()>0){
            Database.insert(newEmi);
        }
    }
}
```

4.<u>MaintenanceRequestHelperTest</u>

```
   @istest
public with sharing class MaintenanceRequestHelperTest {
   @istest
   public static void BulkTesting(){
      product2 pt2 = new product2(Name = 'tester',Maintenance_Cycle__c = 10,
Replacement_Part__c = true);

      Database.insert(pt2);
```

```
        List<case> caseList = new List<case>();
        for(Integer i=0;i<300;i++){
            caseList.add(new case(
                Type = 'Routine Maintenance',
                Status = 'Closed',
                Subject = 'testing',
                Date_Reported__c = Date.today(),
                ProductId = pt2.id
            ));
        }
        if(caseList.size()>0){
            Database.insert(caseList);
            System.debug(pt2.id);
            System.debug(caseList.size());
        }


        List<Equipment_Maintenance_Item__c> newEMI = new
List<Equipment_Maintenance_Item__c>();
        for(Integer i=0;i<5;i++){
            newEMI.add(new Equipment_Maintenance_Item__c(
                Equipment__c = pt2.id,
                Maintenance_Request__c = caseList[1].id,
                Quantity__c = 10));
        }
        if(newEmi.size()>0){
            Database.insert(newEmi);
        }

        for(case c :caseList){
            c.Subject = 'For Testing';
        }
        Database.update(caseList);
        Integer newcase = [Select count() from case where ParentId = :caseList[0].id];
        System.assertEquals(1, newcase);

    }

    @istest
    public static void positive(){
        product2 pt2 = new product2(Name = 'tester',Maintenance_Cycle__c = 10);
        insert pt2;

        Case cParent = new Case(Type = 'Repair',status = 'Closed',Date_Reported__c = Date.today(),
                        ProductId = pt2.id);
        insert cParent;
        Case cChild = new Case(Type = 'Repair',status = 'Closed',Date_Reported__c = Date.today(),
                        ProductId = pt2.id,parentID = cParent.ParentId);
        insert cChild;

        cParent.subject = 'child refrecer record';
        update cParent;

        Integer newcase = [Select count() from case where ParentId = :cParent.id];
        System.assertEquals(1, newcase);

    }
    @istest public static void negetive(){
        product2 pt2 = new product2(Name = 'tester',Maintenance_Cycle__c = 10);
        insert pt2;

        Case c = new Case(Type = 'Repair',status = 'New',Date_Reported__c = Date.today(),
                    ProductId = pt2.id);
        insert c;

        c.Status = 'Working';
        update c;


        Integer newcase = [Select count() from case where ParentId = :c.id];
        System.assertEquals(0, newcase);
    }
}
```

5.<u>WarehouseCalloutService implements Queueable</u>

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

    //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(){
        Http http = new Http();
        HttpRequest request = new HttpRequest();

        request.setEndpoint(WAREHOUSE_URL);
        request.setMethod('GET');
        HttpResponse response = http.send(request);

        List<Product2> warehouseEq = new List<Product2>();

        if (response.getStatusCode() == 200){
            List<Object> jsonResponse =
(List<Object>)JSON.deserializeUntyped(response.getBody());
            System.debug(response.getBody());

            //class maps the following fields: replacement part (always true), cost, current inventory,
lifespan, maintenance cycle, and warehouse SKU
            //warehouse SKU will be external ID for identifying which equipment records to update
within Salesforce
            for (Object eq : jsonResponse){
                Map<String,Object> mapJson = (Map<String,Object>)eq;
                Product2 myEq = new Product2();
                myEq.Replacement_Part__c = (Boolean) mapJson.get('replacement');
                myEq.Name = (String) mapJson.get('name');
                myEq.Maintenance_Cycle__c = (Integer) mapJson.get('maintenanceperiod');
                myEq.Lifespan_Months__c = (Integer) mapJson.get('lifespan');
                myEq.Cost__c = (Integer) mapJson.get('cost');
                myEq.Warehouse_SKU__c = (String) mapJson.get('sku');
                myEq.Current_Inventory__c = (Double) mapJson.get('quantity');
                myEq.ProductCode = (String) mapJson.get('_id');
                warehouseEq.add(myEq);
            }

            if (warehouseEq.size() > 0){
                upsert warehouseEq;
                System.debug('Your equipment was synced with the warehouse one');
            }
        }
    }

    public static void execute (QueueableContext context){
        runWarehouseEquipmentSync();
    }

}
```

6.WarehouseCalloutServiceMock implements HttpCalloutMock

```
    @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":"55d66226726b611
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;
    }
}
```

7.WarehouseCalloutServiceTest

```
    @IsTest
private class WarehouseCalloutServiceTest {
    // implement your mock callout test here
    @isTest static void mainTest(){
        Test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
        Test.startTest();
        Id jobID = System.enqueueJob(new WarehouseCalloutService());
        //System.assertEquals('Queued',aaj.status);
        Test.stopTest();
        AsyncApexJob aaj = [SELECT Id, Status, NumberOfErrors FROM AsyncApexJob WHERE Id =
:jobID];
```

```
        System.assertEquals('Completed',aaj.status);
        System.assertEquals(0, aaj.NumberOfErrors);
    }
}
```

8.<u>WarehouseSyncSchedule implements Schedulable</u>

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

9.<u>WarehouseSyncScheduleTest</u>

```
    @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();
    }
}
```

10. <u>MaintenanceRequest on Case (before update, after update)</u>

```
     trigger MaintenanceRequest on Case (before update, after update) {
    //ToDo: Call MaintenanceRequestHelper.updateWorkOrders
    if(trigger.isAfter){
        MaintenanceRequestHelper.updateWorkOrders();
    }
}
```