

```

/*Shipra
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*/

//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);
                }
            }
        }
    }

    /

    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()  
    );
```

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);  
    }
```

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

```

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

```

if(Trigger.isAfter)
MaintenanceRequestHelper.updateWorkOrders(Trigger.New);
}

```

//WarehouseCalloutService

```

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());

```

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    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');
    }

}

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

//MaintenanceRequestHelperTest

@isTest
public with sharing class MaintenanceRequestHelperTest {

    private static Vehicle__c createVehicle(){
        Vehicle__c vehicle = new Vehicle__C(name = 'Testing Vehicle');
        return vehicle;
    }

    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;
    }

    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;
}

```

```

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++){

equipmentMaintenanceltemList.add(createEquipmentMaintenanceltem(equipmentList.
get(i).id, caseList.get(i).id));
    }
    insert equipmentMaintenanceltemList;

    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);
}
}

```

```

//WarehouseCalloutServiceTest

```

```

@IsTest
private class WarehouseCalloutServiceTest {

    @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
@isTest
global class WarehouseCalloutServiceMock implements HttpCalloutMock {

    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;  
}  
}
```

```
//WarehouseSyncScheduleTest
```

```
@isTest
```

```
public with sharing class WarehouseSyncScheduleTest {
```

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