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;

}

}

}

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@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);

}

}

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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();

}

}

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global with sharing class WarehouseSyncSchedule implements Schedulable{

global void execute(SchedulableContext ctx){

System.enqueueJob(new WarehouseCalloutService());

}

}

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

if(Trigger.isUpdate && Trigger.isAfter){

MaintenanceRequestHelper.updateWorkOrders(Trigger.New, Trigger.OldMap);

}

}