APEX SPECIALIST SUPERBADGE

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));
            } 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> 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;
    }
```

MaitenanceRequest.apxt

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

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(){
        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());

            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();
    }

}
```

WarehouseSyncShedule.apxc

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

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);
```

```apex
        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;
```

```apex
        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();
```

```apex
        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);
```

```apex
        }
        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

```apex
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);
    }
}
```

WarehouseCalloutService.apxc

```
public with sharing class WarehouseCalloutService {
    private static final String WAREHOUSE_URL = 'https://th-superbadge-
```

```
apex.herokuapp.com/equipment';

  @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());

      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 = (Decimal) mapJson.get('lifespan');
        myEq.Warehouse_SKU__c = (String) mapJson.get('sku');
        myEq.Current_Inventory__c = (Double) mapJson.get('quantity');
        warehouseEq.add(myEq);
      }

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

    }
  }
```

```
    }
```

WarehouseCalloutServiceTest.apxc

```apex
@isTest
private class WarehouseCalloutServiceTest {
    @isTest
    static void testWareHouseCallout(){
        Test.startTest();
        Test.setMock(HTTPCalloutMock.class, new WarehouseCalloutServiceMock());
        WarehouseCalloutService.runWarehouseEquipmentSync();
        Test.stopTest();
```

```
            System.assertEquals(1, [SELECT count() FROM Product2]);
    }
}
```

WarehouseCalloutServiceMock.apxc

```
@isTest
global class WarehouseCalloutServiceMock implements HttpCalloutMock {
    global static HttpResponse respond(HttpRequest request){
        System.assertEquals('https://th-superbadge-apex.herokuapp.com/equipment',
request.getEndpoint());
        System.assertEquals('GET', request.getMethod());
        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"}]');
        response.setStatusCode(200);
        return response;
```

```
    }
}
```

WarehouseSyncSchedule.apxc

```
global class WarehouseSyncSchedule implements Schedulable {

    global void execute(SchedulableContext ctx) {

        WarehouseCalloutService.runWarehouseEquipmentSync();

    }
}
```

WarehouseSyncScheduleTest.apxc

```
@isTest
public class WarehouseSyncScheduleTest {
    @isTest static void WarehousescheduleTest(){
        String scheduleTime = '00 00 01 * * ?';
        Test.startTest();
        Test.setMock(HttpCalloutMock.class, new WarehouseCalloutServiceMock());
        String jobID=System.schedule('Warehouse Time To Schedule to Test', scheduleTime, new WarehouseSyncSchedule());
        Test.stopTest();
        CronTrigger a=[SELECT Id FROM CronTrigger where NextFireTime > today];
        System.assertEquals(jobID, a.Id,'Schedule '):
    }
}
```

PROCESS AUTOMATION SUPERBADGE

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:M
A: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))))

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:M
A: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:M
A: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))))

ISCHANGED(Name) && (OR(ISPICKVAL(Type ,'Customer - Direct') ,ISPICKVAL(Type
,'Customer - Channel')))

```
IF(( Amount > 100000 && Approved__c <> True && ISPICKVAL( StageName,'Closed
Won') ),True,False)

Case ( WEEKDAY( Date__c ),
1,"Sunday",
2,"Monday",
3,"Tuesday",
4,"Wednesday",
5,"Thursday",
6,"Friday",
7,"Saturday",
Text(WEEKDay(Date__c)))
```