

## APEX SPECIALIST SUPER BADGE CODES

### APEX TRIGGERS

#### AccountAddressTrigger.apxt:-

```
trigger AccountAddressTrigger on Account (before insert,before update) {  
    for(Account a:Trigger.New){  
        if(a.Match_Billing_Address__c==true){  
            a.ShippingPostalCode=a.BillingPostalCode;  
        }  
    }  
}
```

#### ClosedOpportunityTrigger.apxt:-

```
trigger ClosedOpportunityTrigger on Opportunity (after insert, after update) {  
  
    List<Task> taskList = new List <task>();  
  
    for(Opportunity opp : Trigger.New){  
        if(opp.StageName == 'Closed Won'){  
            taskList.add(new Task(Subject = 'Follow Up Test Task', WhatId = opp.Id));  
        }  
    }  
    if(taskList.size()>0){  
        insert taskList;  
    }  
}
```

### Apex Testing

#### VerifyDate.apxc:-

```
public class VerifyDate {  
    public static Date CheckDates(Date date1, Date date2) {
```

```
        if(DateWithin30Days(date1,date2)) {
            return date2;
        }
    else {
        return SetEndOfMonthDate(date1);
    }
}

private static Boolean DateWithin30Days(Date date1, Date date2) {
    if( date2 < date1) { return false; }

    Date date30Days = date1.addDays(30);
    if( date2 >= date30Days ) { return false; }
    else { return true; }
}

private static Date SetEndOfMonthDate(Date date1) {
    Integer totalDays = Date.daysInMonth(date1.year(), date1.month());
    Date lastDay = Date.newInstance(date1.year(), date1.month(), totalDays);
    return lastDay;
}
}
```

### **TestVerifyDate.apxc**

@isTest

public class TestVerifyDate

```
{
    static testMethod void testMethod1()
    {
        Date d = VerifyDate.CheckDates(System.today(),System.today()+1);
        Date d1 = VerifyDate.CheckDates(System.today(),System.today()+60);
    }
}
```

### **RestrictContactByName.apxt**

trigger RestrictContactByName on Contact (before insert, before update) {

```
        for (Contact c : Trigger.New) {  
            if(c.LastName == 'INVALIDNAME') {  
                c.AddError('The Last Name "' + c.LastName + '" is not allowed for DML');  
            }  
        }  
    }  
}
```

@isTest

```
private class TestRestrictContactByName {  
    static testMethod void metodoTest() {  
        List<Contact> listContact= new List<Contact>();  
        Contact c1 = new Contact(FirstName='Francesco', LastName='Riggio',  
email='Test@test.com');  
        Contact c2 = new Contact(FirstName='Francesco1', LastName =  
'INVALIDNAME',email='Test@test.com');  
        listContact.add(c1);  
        listContact.add(c2);  
        Test.startTest();  
        try{  
            insert listContact;  
        }  
        catch(Exception ee){}  
        Test.stopTest();  
    }  
}
```

**RandomContactFactory.apxc:**

```
public class RandomContactFactory {
```

```
public static List<Contact> generateRandomContacts(Integer numContactsToGenerate, String
FName) {

    List<Contact> contactList = new List<Contact>();

    for(Integer i=0;i<numContactsToGenerate;i++) {

        Contact c = new Contact(FirstName=FName + ' ' + i, LastName = 'Contact ' + i);

        contactList.add(c);

        System.debug(c);
    }

    System.debug(contactList.size());

    return contactList;

}
```

## Asynchronous Apex

### AccountProcessor.apxc

```
public class AccountProcessor {

    @future

    public static void countContacts(List<Id> accountIds){

        List<Account> accounts = [Select Id, Name from Account Where Id IN : accountIds];

        List<Account> updatedAccounts = new List<Account>();

        for(Account account : accounts){

            account.Number_of_Contacts__c = [Select count() from Contact Where AccountId =:
account.Id];

            System.debug('No Of Contacts = ' + account.Number_of_Contacts__c);

            updatedAccounts.add(account);

        }

    }

}
```

```
        update updatedAccounts;
    }
}
```

### **AccountProcessorTest.apxc**

@isTest

```
public class AccountProcessorTest {
```

@isTest

```
    public static void testNoOfContacts(){
Account a = new Account();
    a.Name = 'Test Account';

        Insert a;

        Contact c = new Contact();

        c.FirstName = 'Bob';
        c.LastName = 'Willie';
        c.AccountId = a.Id;

        Contact c2 = new Contact();

        c2.FirstName = 'Tom';
        c2.LastName = 'Cruise';
        c2.AccountId = a.Id;

        List<Id> acctIds = new List<Id>();

        acctIds.add(a.Id);

        Test.startTest();

        AccountProcessor.countContacts(acctIds);

        Test.stopTest();
    }
}
```

```
}  
}
```

**LeadProcessor.apxc:** public class LeadProcessor implements

```
Database.Batchable<sObject> {  
    public Database.QueryLocator start(Database.BatchableContext bc) {  
        return Database.getQueryLocator([Select LeadSource From Lead ]);  
    }  
    public void execute(Database.BatchableContext bc, List<Lead> leads){  
        for (Lead Lead : leads) {  
            lead.LeadSource = 'Dreamforce';  
        }  
        update leads;  
    }  
    public void finish(Database.BatchableContext bc){  
    }  
}
```

**LeadProcessorTest.apxc**

```
@isTest  
public class LeadProcessorTest {  
    @testSetup  
    static void setup() {  
        List<Lead> leads = new List<Lead>();  
        for(Integer counter=0 ;counter <200;counter++){  
            Lead lead = new Lead();  
            lead.FirstName ='FirstName';  
        }  
    }  
}
```

```
        lead.LastName = 'LastName'+counter;

        lead.Company = 'demo'+counter;

        leads.add(lead);
    }

    insert leads;
}

@isTest static void test() {

    Test.startTest();

    LeadProcessor leadProcessor = new LeadProcessor();

    Id batchId = Database.executeBatch(leadProcessor);

    Test.stopTest();

}
}
```

### **AddPrimaryContact.apxc**

```
public class AddPrimaryContact implements Queueable
{
    private Contact c;

    private String state;

    public AddPrimaryContact(Contact c, String state)
    {
        this.c = c;

        this.state = state;
    }

    public void execute(QueueableContext context)
    {

```

```
List<Account> ListAccount = [SELECT ID, Name ,(Select id,FirstName,LastName from
contacts ) FROM ACCOUNT WHERE BillingState = :state LIMIT 200];

List<Contact> IstContact = new List<Contact>();

for (Account acc:ListAccount)
{
    Contact cont = c.clone(false,false,false,false);
    cont.AccountId = acc.id;
    IstContact.add( cont );
}

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

#### **AddPrimaryContactTest.apxc**

```
@isTest public class
AddPrimaryContactTest
{
    @isTest static void TestList()
    {
        List<Account> Teste = new List <Account>();

        for(Integer i=0;i<50;i++)
        {
            Teste.add(new Account(BillingState = 'CA', name = 'Test'+i));
        }
    }
}
```



```
    }  
    for(Integer j=0;j<50;j++)  
    {  
        Teste.add(new Account(BillingState = 'NY', name = 'Test'+j));  
    }  
    insert Teste;  
    Contact co = new Contact();  
    co.FirstName='demo';  
    co.LastName = 'demo';  
    insert co;  
    String state = 'CA';  
    AddPrimaryContact apc = new AddPrimaryContact(co, state);  
    Test.startTest();  
    System.enqueueJob(apc);  
    Test.stopTest();  
}  
}
```

#### **DailyLeadProcessor.apxc**

```
public class DailyLeadProcessor implements Schedulable {  
    Public void execute(SchedulableContext SC){  
        List<Lead> LeadObj=[SELECT Id from Lead where LeadSource=null limit 200];  
        for(Lead l:LeadObj){  
            l.LeadSource='Dreamforce';  
            update l;  
        }  
    }  
}
```

```
}  
}
```

### **DailyLeadProcessorTest.apxc**

@isTest

```
private class DailyLeadProcessorTest {  
  
    static testMethod void testDailyLeadProcessor() {  
  
        String CRON_EXP = '0 0 1 * * ?';  
  
        List<Lead> lList = new List<Lead>();  
  
        for (Integer i = 0; i < 200; i++) {  
            lList.add(new Lead(LastName='Dreamforce'+i, Company='Test1 Inc.',  
Status='Open - Not Contacted'));  
        }  
  
        insert lList;  
  
        Test.startTest();  
  
        String jobId = System.schedule('DailyLeadProcessor', CRON_EXP, new  
DailyLeadProcessor());  
    }  
}
```

### **AnimalLocator.apxc:**

```
public class AnimalLocator{  
  
    public static String getAnimalNameById(Integer x){  
  
        Http http = new Http();  
  
        HttpRequest req = new HttpRequest();
```

```
        req.setEndpoint('https://th-apex-http-callout.herokuapp.com/animals/' + x);

req.setMethod('GET');

    Map<String, Object> animal= new Map<String, Object>();

    HttpResponse res = http.send(req);

    if (res.getStatusCode() == 200) {

        Map<String, Object> results = (Map<String,
Object>)JSON.deserializeUntyped(res.getBody());

        animal = (Map<String, Object>) results.get('animal');

    }

    return (String)animal.get('name');

}

}
```

### **AnimalLocatorTest.apxc**

```
@isTest

private class AnimalLocatorTest{

    @isTest static void AnimalLocatorMock1() {

        Test.setMock(HttpCalloutMock.class, new AnimalLocatorMock());

        string result = AnimalLocator.getAnimalNameById(3);

        String expectedResult = 'chicken';

        System.assertEquals(result,expectedResult );

    }

}
```

### **AnimalLocatorMock.apxc**

```
@isTest
```

```
global class AnimalLocatorMock implements HttpCalloutMock {

    // Implement this interface method

    global HTTPResponse respond(HTTPRequest request) {

        // Create a fake response

        HttpResponse response = new HttpResponse();

        response.setHeader('Content-Type', 'application/json');

        response.setBody('{"animals": ["majestic badger", "fluffy bunny", "scary bear", "chicken",
"mighty moose"]}');

        response.setStatusCode(200);

        return response;

    }

}
```

### **ParkLocator.apxc**

```
public class ParkLocator {

    public static string[] country(string theCountry) {

        ParkService.ParksImplPort parkSvc = new ParkService.ParksImplPort(); // remove space

        return parkSvc.byCountry(theCountry);

    }

}
```

### **ParkLocatorTest.apxc**

```
@isTest

private class ParkLocatorTest {

    @isTest static void testCallout() {
```

```
Test.setMock(WebServiceMock.class, new ParkServiceMock ());

String country = 'United States';

List<String> result = ParkLocator.country(country);

List<String> parks = new List<String>{'Yellowstone', 'Mackinac National Park',
'Yosemite'};

System.assertEquals(parks, result);

}

}
```

### **ParkServiceMock.apxc**

@isTest

```
global class ParkServiceMock implements WebServiceMock {

    global void doInvoke(

        Object stub,

        Object request,

        Map<String, Object> response,

        String endpoint,

        String soapAction,

        String requestName,

        String responseNS,

        String responseName,

        String responseType) {

        // start - specify the response you want to send

        ParkService.byCountryResponse response_x = new ParkService.byCountryResponse();

        response_x.return_x = new List<String>{'Yellowstone', 'Mackinac National Park',
'Yosemite'};

        // end
```

```
response.put('response_x', response_x);  
}  
}
```

### **AccountManager.apxc**

```
@RestResource(urlMapping='/Accounts/*/contacts')  
  
global with sharing class AccountManager {  
  
    @HttpGet  
  
    global static Account getAccount(){  
  
        RestRequest request=RestContext.request;  
  
        string accountId=request.requestURI.substringBetween('Accounts/', '/contacts');  
  
        Account result=[SELECT Id,Name,(Select Id,Name from Contacts) from Account where  
Id=:accountId Limit 1];  
  
        return result;  
  
    }  
}
```

### **AccountManagerTest.apxc**

```
@IsTest  
  
private class AccountManagerTest {  
  
    @isTest static void testGetContactsByAccountId(){  
  
        Id recordId=createTestRecord();  
  
        RestRequest request=new RestRequest();  
  
        request.requestUri='https://yourInstance.my.salesforce.com/services/apexrest/Accounts/'+  
recordId+'/contacts';  
  
        request.httpMethod='GET';  
  
        RestContext.request=request;  
  
        Account thisAccount=AccountManager.getAccount();  
  
    }  
}
```

```
        System.assert(thisAccount != null);

        System.assertEquals('Test record',thisAccount.Name);
    }

    static Id createTestRecord(){

        Account accountTest=new Account(

            Name='Test record'

        );

        insert accountTest;

        Contact contactTest=new Contact(

            FirstName='John',LastName='Doe',AccountId=accountTest.Id);

        insert contactTest;

        return accountTest.Id;

    }

}
```

## APEX SPECIALIST SUPER BADGE

### Challenge 1:

#### 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));
```

```
}
```

```
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);  
    }  
}
```

### **Challenge-2:**

**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 ware
    }

}

}

public static void execute (QueueableContext context){

    runWarehouseEquipmentSync();

}

}
```

### Challenge-3:

#### WarehouseSyncSchedule.apxc

```
global class WarehouseSyncSchedule implements Schedulable {

    global void execute(SchedulableContext ctx) {

        WarehouseCalloutService.runWarehouseEquipmentSync();

    }

}
```

```
}
```

### Challenge-4:

#### 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);
```

```
        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);
    }
```

### 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));
    }

    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);  
    }  
  
}
```

### Challenge-5:

#### WarehouseCalloutService.apxc

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

```
@isTest private class

WarehouseCalloutServiceTest {

    @isTest

    static void testWareHouseCallout(){

        Test.startTest();

        // implement mock callout test here

        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,"na
me
":"Generator 1000 kW","maintenanceperiod":365,"lifespan":120,"cost":5000,"sku":"100003"}');

    response.setStatusCode(200);

    return response;

}

}
```

## Challenge-6:

### 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 ');  
  
    }  
  
}
```

