

Apex Triggers

Get Started with Apex Triggers

```
trigger AccountAddressTrigger on Account (before insert , before update) {

    for(Account account:Trigger.New){
        if(account.Match_Billing_Address__c==True){
            account.ShippingPostalCode = account.BillingPostalCode;
        }
    }

}
```

Bulk Apex Triggers

```
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

Get Started with Apex Unit Tests

```
public class VerifyDate {
```

```

//method to handle potential checks against two dates
public static Date CheckDates(Date date1, Date date2) {
    //if date2 is within the next 30 days of date1, use date2. Otherwise use the end
of the month
    if(DateWithin30Days(date1,date2)) {
        return date2;
    } else {
        return SetEndOfMonthDate(date1);
    }
}

```

```

//method to check if date2 is within the next 30 days of date1
@TestVisible private static Boolean DateWithin30Days(Date date1, Date date2) {
    //check for date2 being in the past
    if( date2 < date1) { return false; }

    //check that date2 is within (>=) 30 days of date1
    Date date30Days = date1.addDays(30); //create a date 30 days away from date1
    if( date2 >= date30Days ) { return false; }
    else { return true; }
}

```

```

//method to return the end of the month of a given date
@TestVisible 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;
}
}

```

```

@Test
private class TestVerifyDate {

```

```

    @isTest static void Test_CheckDates_case1(){
        Date D= VerifyDate.CheckDates(date.parse('01/01/2020'), date.parse('01/05/2020'));
        System.assertEquals(date.parse('01/05/2020'), D);
    }

```

```

    @isTest static void Test_CheckDates_case2(){
        Date D= VerifyDate.CheckDates(date.parse('01/01/2020'), date.parse('05/05/2020'));
    }
}

```

```

        System.assertEquals(date.parse('01/31/2020'), D);
    }

    @isTest static void Test_DateWithin30Days_case1(){
        Boolean flag =
        VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('12/30/2019'));
        System.assertEquals(false,flag);
    }
    @isTest static void Test_DateWithin30Days_case2(){
        Boolean flag =
        VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('02/02/2020'));
        System.assertEquals(false,flag);
    }
    @isTest static void Test_DateWithin30Days_case3(){
        Boolean flag =
        VerifyDate.DateWithin30Days(date.parse('01/01/2020'),date.parse('01/15/2020'));
        System.assertEquals(true,flag);
    }
    @isTest static void Test_SetEndOfMonthDate(){
        Date returndate = VerifyDate.SetEndOfMonthDate(date.parse('01/01/2020'));
    }
}

```

Test Apex Triggers

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

```

    //check contacts prior to insert or update for invalid data
    For (Contact c : Trigger.New) {
        if(c.LastName == 'INVALIDNAME') { //invalidname is invalid
            c.AddError('The Last Name "' + c.LastName + '" is not allowed for DML');
        }
    }
}

```

```

@isTest
public class TestRestrictContactByName {
    @isTest static void Test_insertupdateContact(){
        Contact cnt = new Contact();
        cnt.LastName = 'INVALIDNAME';
    }
}

```

```

Test.startTest();
Database.SaveResult result = Database.insert(cnt,false);
Test.startTest();

System.assert(!result.isSuccess());
System.assert(result.getErrors().size()>0);
System.assertEquals('The Last Name "INVALIDNAME" is not allowed for
DML',result.getErrors()[0].getMessage());
}

}

```

Create Test Data for Apex Tests

```

public class RandomContactFactory {

    public static List<Contact> generateRandomContacts(Integer numcnt,string lastname){
        List<Contact> contacts = new List<Contact>();
        for(Integer i=0;i<numcnt;i++){
            Contact cnt = new Contact(FirstName = 'Test '+i, Lastname = lastname);
            contacts.add(cnt);
        }
        return contacts;
    }

}

```

Asynchronous Apex

Use Future Methods

```

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;
}
}

```

```

@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();
    }
}

```

Use Batch Apex

```

global class LeadProcessor implements Database.Batchable<sObject> {
    global Integer count = 0;

    global Database.QueryLocator start(Database.BatchableContext bc){
        return Database.getQueryLocator('SELECT ID, LeadSource FROM Lead');
    }

    global void execute(Database.BatchableContext bc, List<Lead> L_list){
        List<lead> L_list_new = new List<lead>();

        for(lead L:L_list){
            L.leadsource = 'Dreamforce';
            L_list_new.add(L);
            count += 1;
        }
        update L_list_new;
    }
    global void finish(Database.BatchableContext bc){
        System.debug('count = '+count);
    }
}

```

```

@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();
    }
}

```

Control Processes with Queueable Apex

```

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> lstContact = new List<Contact>();
        for (Account acc:ListAccount)
        {
            Contact cont = c.clone(false,false,false,false);
            cont.AccountId = acc.id;
            lstContact.add( cont );
        }

        if(lstContact.size() >0 )
        {
            insert lstContact;
        }
    }
}

```

```

@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();
    }
}

```

Schedule Jobs Using the Apex Scheduler

```

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;
        }
    }
}

```



```

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

        Test.startTest();
        String jobId = System.schedule('DailyLeadProcessor', CRON_EXP, new
DailyLeadProcessor());
    }
}

```

Apex Integration Services

Apex REST Callouts

```

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');
    }
}

```

```

@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 );
    }
}

```

```

@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;
    }
}

```

Apex SOAP Callouts

```

public class ParkLocator {
    public static string[] country(string theCountry) {
        ParkService.ParksImplPort parkSvc = new ParkService.ParksImplPort(); // remove space
        return parkSvc.byCountry(theCountry);
    }
}

```

```

@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);
}
}

```

```

@Test
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);
    }
}

```

Apex Web Services

```

@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;
    }
}
```

```
@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

challenge 2

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

```
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);
                }
            }
        }
    }
}
```

```
    //When an existing maintenance request of type Repair or Routine Maintenance is closed,
    //create a new maintenance request for a future routine checkup.
    if (!validIds.isEmpty()){
        Map<Id,Case> closedCases = new Map<Id,Case>([SELECT Id, Vehicle_c, Equipmentc,
Equipment_r.Maintenance_Cycle_c,
                (SELECT Id,Equipment_c,Quantityc 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()
    );

    //If multiple pieces of equipment are used in the maintenance request,
    //define the due date by applying the shortest maintenance cycle to today's 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.Equipmentr.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;
}
}
}

```

challenge 3

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

//Write a 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(){
    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());
    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');
}

}

```

challenge 4

```

global with sharing class WarehouseSyncSchedule implements Schedulable{
    global void execute(SchedulableContext ctx){

```



```

        System.enqueueJob(new WarehouseCalloutService());
    }
}

```

challenge 5

```

@isTest
public with sharing class MaintenanceRequestHelperTest {

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

    // createEquipment
    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;
    }

    // createMaintenanceRequest
    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;
    }

    // createEquipmentMaintenanceItem
    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 equipmentMaintenanceltem;
}
```

@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 equipmentMaintenanceltem =
createEquipmentMaintenanceltem(equipmentId,createdCase.id);
insert equipmentMaintenanceltem;
```

```
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> equipmentMaintenanceltemList = new
list<Equipment_Maintenance_Item_c>();
    list<case> caseList = new list<case>();
    list<id> oldCaselds = 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';
        oldCaselds.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);
}
}

```

challenge 6

```

@Test
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;
    }
}

@Test
private class WarehouseCalloutServiceTest {
    // implement your mock callout test here

```

```

        @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);
}
}

```

challenge 7

```

@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": "55d66226726b611100aaf742", "replacement": true, "quantity": 183, "name": "Cooling Fan", "maintenanceperiod": 0, "lifespan": 0, "cost": 300, "sku": "100004"}, { "_id": "55d66226726b611100aaf743", "replacement": true, "quantity": 143, "name": "Fuse 20A", "maintenanceperiod": 0, "lifespan": 0, "cost": 22, "sku": "100005"}]');
        response.setStatusCode(200);

        return response;
    }
}

```

```

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

```

```

@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();
    }
}

```