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> task list =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 task list;
}
}
```

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;
}
}@isTest
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('02/02/2019'));
      System.assertEquals(false, flag);
```

```
    }
     @isTest static void Test_DateWithin30Days_case3(){
        Boolean flag = VerifyDate.DateWithin30Days(date.parse('01/01/2020'),
date.parse('01/15/2019'));
        System.assertEquals(true, flag);
    }
    @isTest static void Test_SetEndOfMonthDate(){
        Date return date = VerifyDate.SetEndOfMonthDate(date.parse('01/01/2020'));
    }
```

}Test Apex Triggers

```
trigger RestrictContactByName on Contact (before insert, before update) {
//check contacts before 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 cent = new Contact();
        cent.LastName = 'INVALIDNAME';
        Test.startTest();
        Database.SaveResult result = Database.insert(cnt ,false);
        Test.stopTest();
        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 monument, string
last name){
      List<Contact> contacts = new List<Contact>();
      for(Integer i=0;i<numcnt;i++){
         Contact cent = new Contact(FirstName = 'Test '+i, LastName = last name);
         contacts.add(cnt);
      }
      return contacts;
   }
}
```

Asynchronous Apex

Use Future Methods

```
public class AccountProcessor {
   @future
   public static void countContacts(List<Id>accountIds){
      List<Account> accountsToUpdate = new List<Account>();
      List<Account> accounts = [Select Id, Name , (Select Id from Contacts) from
Account Where Id in :accountIds];
      For(Account AC:accounts){
         List<Contact> contactList = AC.Contacts;
         AC.Number_Of_Contacts__c = contactList.size();
         accountsToUpdate.add(acc);
      }
      update accountsToUpdate;
   }
}
@isTest
private class AccountProcessorTest {    @isTest
   private static void testCountContacts(){
      Account newAccount = new Account(Name='Test Account');
      insert newAccount;
      Contact newContact1 = new Contact(FirstName='Jhon',LastName =
'Deo',AccountId=newAccount.Id);
      insert newContact1;
      Contact newContact2 = new Contact(FirstName='Jane',LastName =
'Deo',AccountId=newAccount.Id);
```

```
        insert newContact2;
        List<Id>accountIds = new List<Id>();
        accountids.add(newAccount.Id);
        Test.startTest();
        Accountprocessor.countContacts(accountIds);
        Test.stopTest();
    }
}
```

Use Batch Apex

```
global class LeadProcessor implements Database.Batch able<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 be){
        system.debug('count='+count);
    }
}
@isTest
public class LeadProcessorTest {
    @isTest
    public static void test it(){
        List<lead> L_list = new List<lead>();
        for(Integer i=0;i<200;i++){
            Lead L = new lead();
            L.LastName = 'name' +1;
            L.Company = 'Company';
            L.Status = 'Random Status';
            L_list.add(L);
```

```
        }
        insert L_list;
        Test.startTest();
        LeadProcessor l = new LeadProcessor();
        Id batchId = Database.executeBatch(lp);
        Test.stopTest();
    }
```

}Control Processes with Queueable Apex

```
public class AddPrimaryContact implements Queueable{
    private Contact con;
    private String state;
    public  AddPrimaryContact(Contact con,String state){
        this.con=con;
        this.state=state;
    }
    public void execute(QueueableContext context){
        List<Account> accounts=[Select Id , Name , (Select FirstName , LastName ,Id from
contacts)
                                from Account where BillingState = :state Limit 200];
        List<Contact> primaryContacts = new List<Contact>();
        for(Account AC:accounts){
            Contact c = con.clone();
            c.AccountId = AC.Id;
            primaryContacts.add(c);
        }
        if(primaryContacts.size() > 0){
            insert primaryContacts;
        }
    }
}
@isTest
public class AddPrimaryContactTest {    static test method void testQueueable(){
        List<Account> testAccounts = new List<Account>();
        for(Integer i=0;i<50;i++){
            testAccounts.add(new Account(Name='Account '+i,BillingState='CA'));
        }
```

```
        for(Integer j=0;j<50;j++){
            testAccounts.add(new Account(Name ='Account '+j,BillingState='NY'));
        }
        insert testAccounts;
        Contact testContact = new Contact(FirstName ='John',LastName='Doe');
        insert testContact;
        AddPrimaryContact add it = new addPrimaryContact(testContact, 'CA');
        Test.startTest();
        system.enqueueJob(addit);
        Test.stopTest();
        System.assertEquals(50,[Select count() from Contact where accountId in (Select Id
from Account where BillingState='CA')]);
    }
}
```

Schedule Jobs Using the Apex Scheduler

```
global class DailyLeadProcessor implements Schedulable {
    global void execute(SchedulableContext ct x){
        List<lead> updatable =  new List<lead>();
        List<Lead> leads=[Select id From Lead where LeadSource=NULL Limit 200];
        for(Lead l:leads){
            l.LeadSource= 'Dreamforce';
            leadstoupdate.add(l);
        }       update updatable;
    }
}
@isTest
private class DailyLeadProcessorTest {
    public static String CRON_EXP = '0 0 0 15 3 7  2022';
    static test method void testScheduledJob(){
        List<Lead> leads = new List<lead>();
        for(Integer i=0;i<200;i++){
            Lead l =new Lead(
                FirstName = 'First ' +i,
                LastName ='LastName',
                Company ='The Inc'
            );
```

```
        leads.add(l);
      }
      insert leads;
      Test.startTest();
      String jobId = System.schedule('ScheduledApexTest',CRON_EXP,new
DailyLeadProcessor());
      Test.stopTest();
      List<Lead> check leads = new List<Lead>();
      check leads = [Select Id From Lead Where LeadSource = 'Dreamforce' and Company
= 'The Inc'];
      System.assertEquals(200,checkleads.size(), 'Leads were not created');
   }
```

}Apex Integration Services

Apex REST Callouts

```
public class AnimalLocator{
   public static String getAnimalNameById(Integer x){
      Http http = new Http();
      HttpRequest re q = 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 Cal louts

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

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;
  }
}
@IsTestprivate 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,
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 a : 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 n = 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.Equipment__r.maintenance_Cycle__c);
            }
            newCases.add(nc);
         }
         insert newCases;
         List<Equipment_Maintenance_Item__c> clonedList = new
List<Equipment_Maintenance_Item__c>();          for (Case n : 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 Queue able {
   private static final String WAREHOUSE_URL = 'https://th-superbadge
apex.herokuapp.com/equipment';
   //Write a class that makes a REST call out 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 upset 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){
                upset 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 ct x){
        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 cs e = new case(Type='Repair',
                             Status='New',
                             Origin='Web',
                             Subject='Testing subject',
                             Equipment__c=equipmentId,
```

```
                    Vehicle__c=vehicleId);
        return cs e;
    }
    // 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 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++){

equipmentMaintenanceItemList.add(createEquipmentMaintenanceItem(equipmentList.
get(i).id, caseList.get(i).id));
        }
        insert equipmentMaintenanceItemList;
        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);
```

```
    }
}
```

challenge 6

```
@isTest
global class WarehouseCalloutServiceMock implements HttpCalloutMock {
    // implement http mock call out
    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;
    }
}
@IsTest
private class WarehouseCalloutServiceTest {
    // implement your mock call out 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 call out
    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;
    }
}
global with sharing class WarehouseSyncSchedule implements Schedulable{
global void execute(SchedulableContext ct x){
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();
}
}
```