Field Service Work Order Optimization

INTRODUCTION:

The Field Service Work Order Optimization System streamlines operations for a company providing installations and repairs .Utilizing a robust data base , the system efficiently matches work orders with skilled technicians based on technician's location, availability, and skills. The system employs a prioritization algorithm, focusing on assigning tasks to technician. Automated communication keeps technicians informed, while analytics offer insights for continuous improvement. Over all, this solution maximizes efficiency, reduces operational costs, and improves customer satisfaction in the dynamic realm of field service operations.

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CreatingaSalesforceDeveloperEditionorgallowsdeveloperstoexperiment,innovate,andbuild customized solutions within a controlled environment. With access to Salesforce's powerful development tools and features, developers can prototype, test, and refine their applications, empowering them to deliver robust and 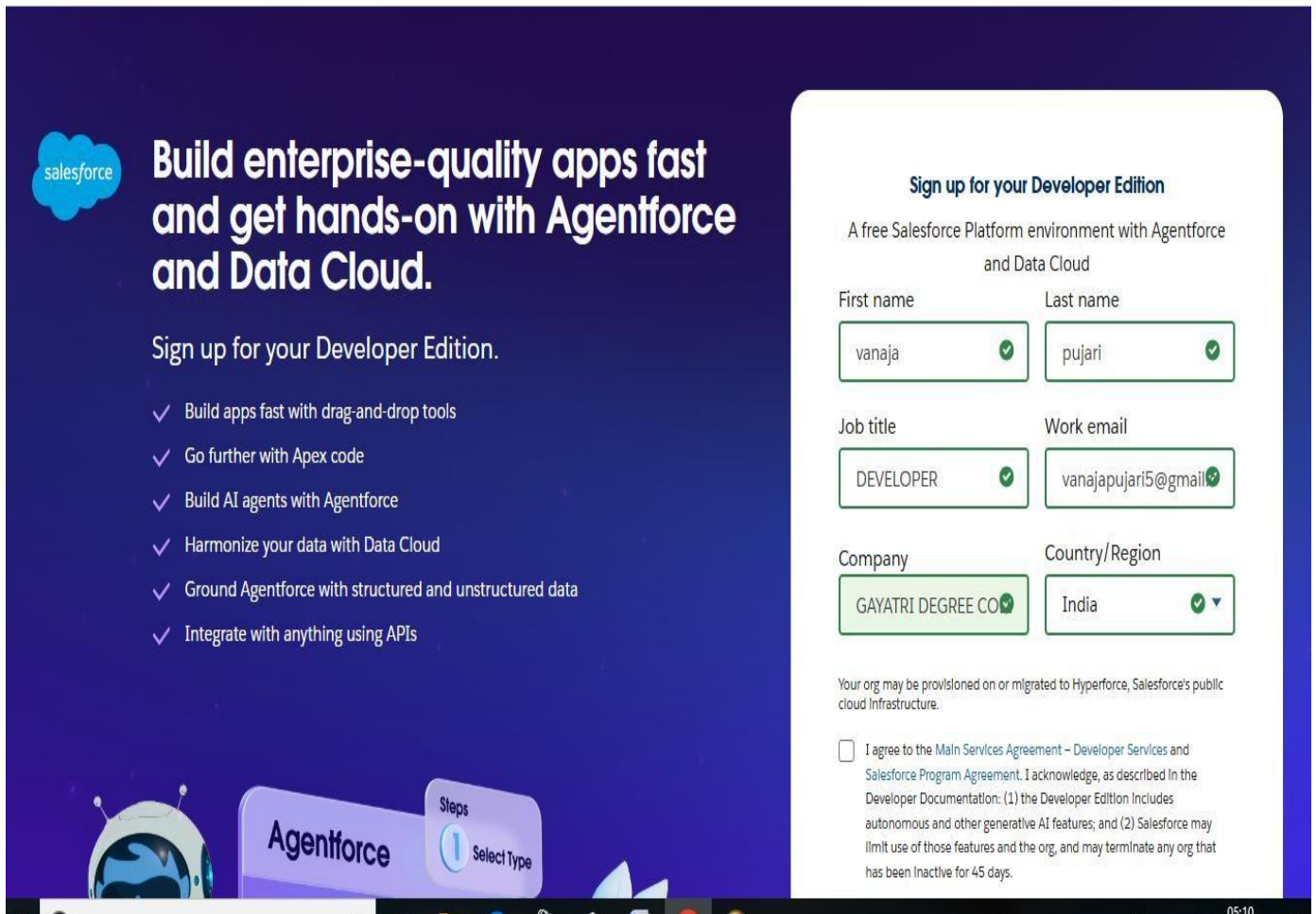tailored solutions to meet unique business requirements. Asa SalesforceDeveloperforanorganizationyoumusthaveaSalesforcedeveloperedition org in order to do all the required works.

ACTIVITY1:Creating Developer Account

Creating a developer org in Sales force.
1. Go to https://developer.salesforce.com/signup
2. On the sign up form ,enter the following details:

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Fields to fill in:

1. First Name: VANAJA
2. Last Name: PUJARI
3. Email: vanajapujari5@gmail.com
4. Role: Developer
5. Company :GAYATRI DEGREE COLLEGE
6. Country: India

This need not be an actual Email ID, you can give any thing in the format :username@organization.com
Click on sign me up after filling these.
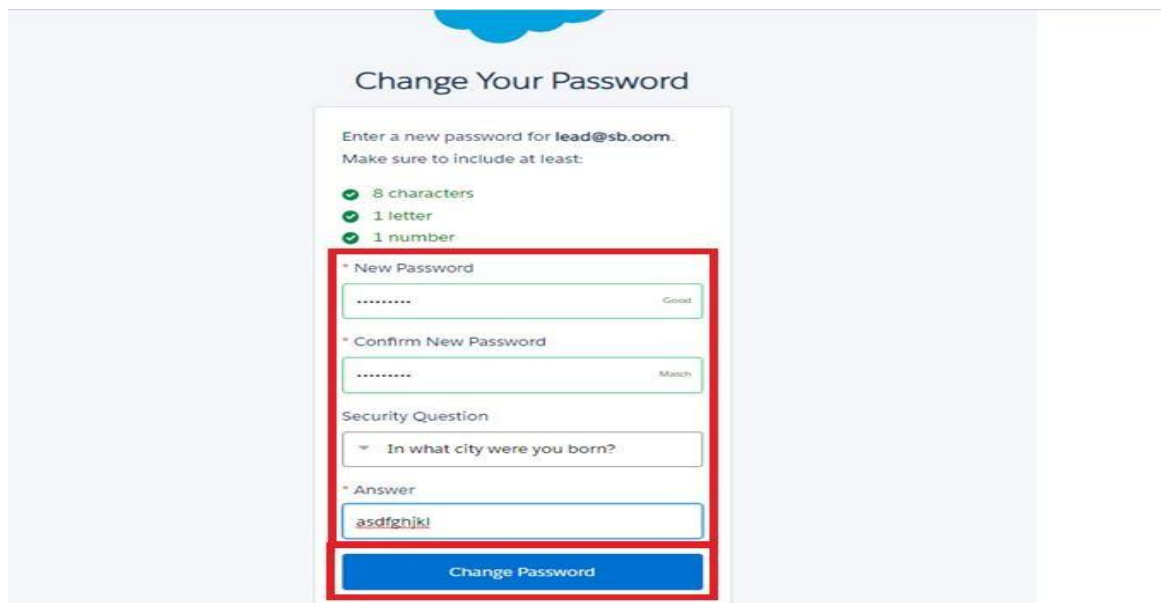
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ACTIVITY2:Account Activation

1.Gototheinboxoftheemailthatyouusedwhilesigningup.Clickontheverifyaccountto activate your account. The email may take 5-10mins.
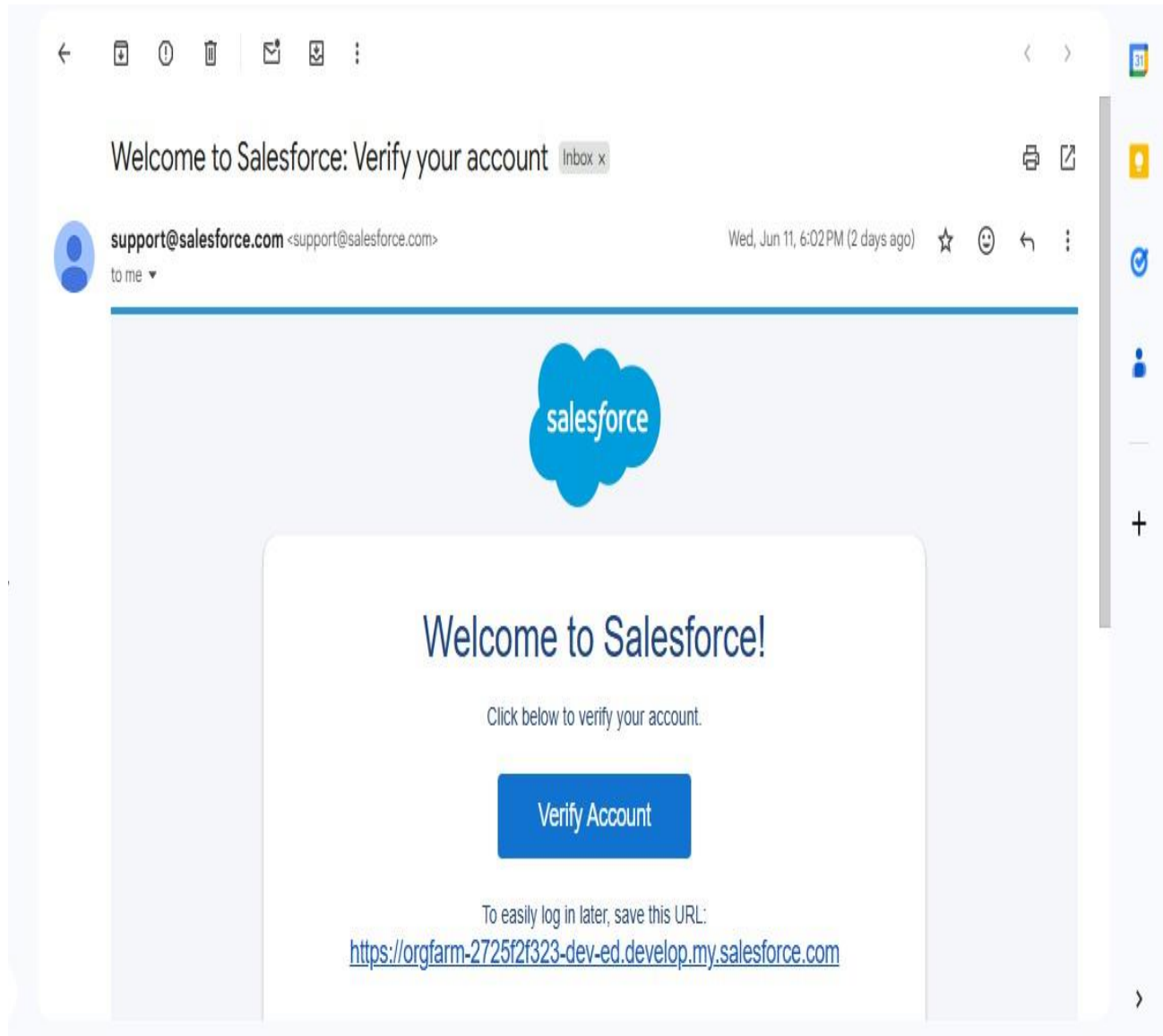
2.   Click on Verify Account

3.   Give a password and an swerr a security question and click on change password.

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4. Then you will redirect to your Sales force setup page.

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Object: To store the data as per business requirement.

Create Technician Object

1. Downloadandopen this spreadsheet,edittheemailcolumn(provideyouremailforatleast one or two records) and save it as Technician.csv.
2. Log in to your sales force account ,click on Gear icon ,then select Setup.
3. Click the Object Manager tab.

4. Click Create.
5. Select Custom Object from Spreadsheet.

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6. Click Log in With Sales force.
7. EnteryourSalesforceaccountusernameandpassword.(whichyouhavecreatedinthe Milestone 1, Activity 1)
8. Click Log In.
9. Click Allow.
10. Click Upload.
11. NavigatetotheTechnician.csvfileyoudownloadedanduploadit.Salesforceautomatically detects the fields and populates all its record data. Choose Technician ID as the Record Name field and make sure all fields are with the proper datatypes as below as they are.

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12. Click Next and enter the following settings.
13. ClickFinish.TheTechnicianobjectissuccessfullycreatedanddataimported,all within minutes.

ACTIVITY2:Create Work Order Object

Create Work Order object,just as we have created Technician Object using

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Tocreatean object:

1. From the setup page -->Click on Object Manager-->Click on Create-->Click on Custom Object.

1. Enter the label name-->Assignment
2. Plural label name --> Assignments

Custom Object Definition Edit   Save   Save & New   Cancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports.

Label   Example: Account

Plural Label   Example: Accounts

Starts with vowel sound   ☐

The Object Name is used when referencing the object via the API.

Object Name   Example: Account

Description

Context-Sensitive Help Setting   ⦿ Open the standard Salesforce.com Help & Training window
                                   ◯ Open a window using a Visualforce page

Content Name   --None--

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2.ClickonAllowreports,
Allow search --> Save.

      3. EnterRecordNameLabeland Format

- RecordName-->AssignmentID
- DataType --> AutoNumber
- DisplayFormat-->A-{0000}
- StartingNumber-->1

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" a

| Record Name | Assignment ID | **Example: Account Name** |

| Data Type | Auto Number ▾ |

| Display Format | A-{0000} | **Example: A-{0000}** <u>What Is This?</u> |

| Starting Number | 1 |

Tabs

A tab is like a user inter face that is used to build records for object sand to view the records in the objects.

ACTIVITY1:Creating a Custom Tab

To create Tab:(Assignment)

1. Go to setup page -->type Tabs in Quick Find bar -->click on tabs--

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>New(under custom object tab)

Custom Tabs

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed exte allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigat you to add Lightning Pages to Lightning Experience and the mobile app.

Custom Object Tabs   New | What Is This?

No Custom Object Tabs have been defined

Web Tabs   New | What Is This?

No Web Tabs have been defined

2. Select Object(Assignment) -->Select any tab style -->Next(Add to profiles page) keep it as default --> Next (Add to Custom App) keep it as default --> Save.

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New Custom Object Tab

Step 1. Enter the Details

Choose the custom object for this new custom tab. Fill in other details.

Select an existing custom object or create a new custom object now.

Object   Assignment ⌄

--None--

Assignment

Tab Style

(Optional) Choose a Home Page Custom Link to show as a splash page the first time your users click on this tab.

Splash Page Custom Link   --None-- ⌄

Note: Tabs for Work Order &Technician objects do get created automatically .We do not need to create tabs for those objects.

The Lightning App:

Well done you have reached close to your organization all requirement by creating the objects   to storetheorganization'sdata.Makingadatabaseforanorganizationisjustnotenoughtoreach   out the requirements, the task is how the users at the organization can access the objects you have created for them

ACTIVITY1:Create a Lightning App

To create a lightning app page:

1. Go to setup page -->search "app manager" in quick find -->select "app manager"-->click on New lightning App.

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2. Fill the app name in app details and branding as follows.

   App Name : Field Service Work Order Optimization

   Developer Name : this will auto populated

   Description: Giveameaningfuldescription

   Image:optional(ifyouwanttogiveanyimageyoucanotherwisenotmandatory) Primary color hex value : keep this default

3. ThenclickNext-->(Appoptionpage)keepitasdefault -->Next-->(UtilityItems)keepit as default --> Next.

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New Lightning App

App Details & Branding

Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.

App Details

*App Name

[Name your app...]

*Developer Name

[Enter a developer name...]

Description

[Enter a description...]
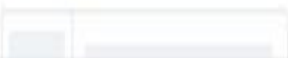
App Branding

Image

Primary Color Hex Value

[▼] [#0070D2]

⬆ Upload

Org Theme Options

☐ Use the app's image and color instead of the org's custom theme

App Launcher Preview

[Next]

4. To Add Navigation Items:

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New Lightning App
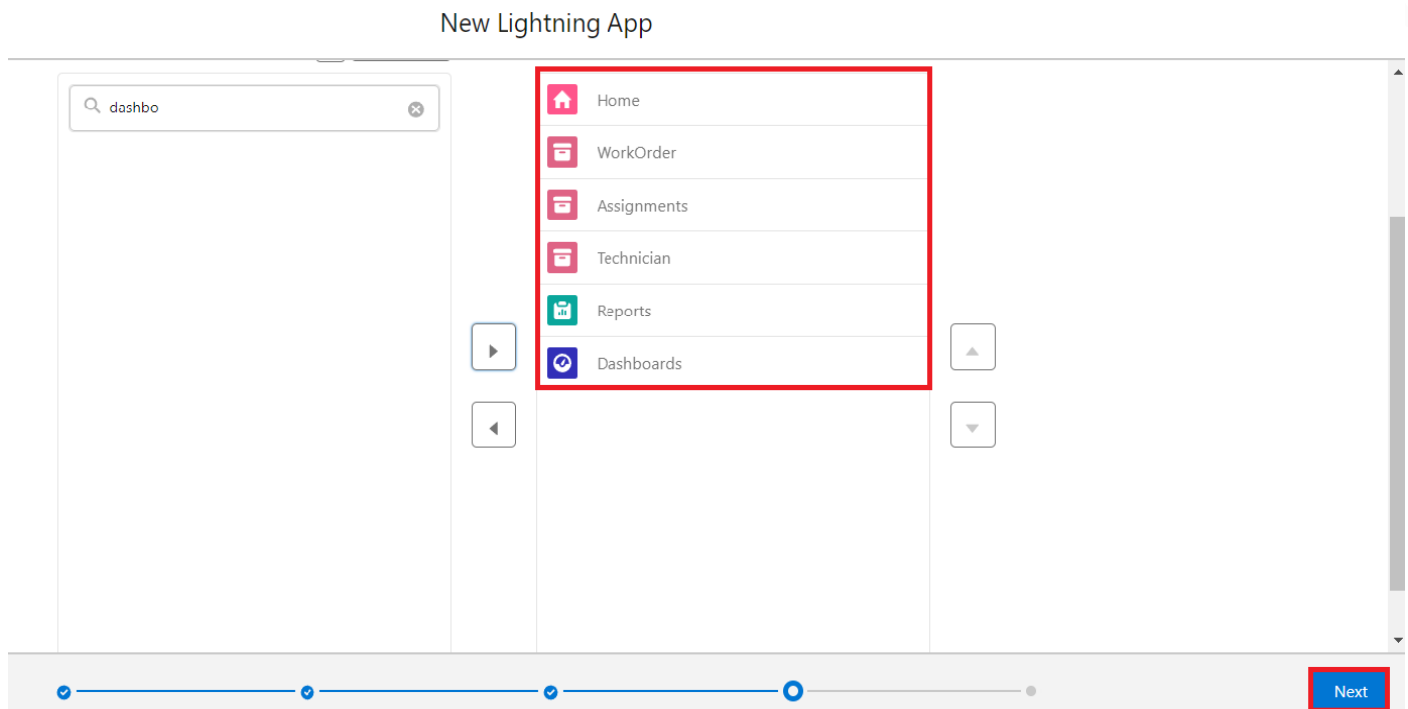
Search the items in the search bar (Home ,Work Order ,Technician ,Assignment ,Reports, Dashboard) from the search bar and move it using the arrow button ? Next.
Note : select as set the custom object which we have created in the previous activity.

5. To Add User Profiles:

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Search profiles(System administrator)in the search bar -->click on the arrow button -->save & finish.

Fields &Relationship:

Now it's time for you to think out of the box for your organization .You have successfully created thedatabaseobjectsfortheorganizationbutnowalleyesturnonyouasyouhavetodefinewhat sort of information the objects store which you have created .As a life saver of your organization you come up with the idea of creating fields to store different types of data.

ACTIVITY1:Creating Lookup Field in Assignment Object

To create fields in an object:
1. Go to setup-->click on Object Manager-->type object name(Assignment) in quick find bar-->click on the object.

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2. Now click on "Fields &Relationships" -->New

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3. Select Data type as "Lookup".

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Step 1. Choose the field type   **Step 1**

Next   Cancel

Specify the type of information that the custom field will contain.

Data Type

○ **None Selected**	Select one of the data types below.
○ **Auto Number**	A system-generated sequence number that uses a display format you define. The number is automatically incremented for each new record.
○ **Formula**	A read-only field that derives its value from a formula expression you define. The formula field is updated when any of the source fields change.
○ **Roll-Up Summary** [i]	A read-only field that displays the sum, minimum, or maximum value of a field in a related list or the record count of all records listed in a related list.
◉ **Lookup Relationship**	Creates a relationship that links this object to another object. The relationship field allows users to click on a lookup icon to select a value from a popup list. The other object is the source of the values in the list.
○ **Master-Detail Relationship**	Creates a special type of parent-child relationship between this object (the child, or "detail") and another object (the parent, or "master") where:
	• The relationship field is required on all detail records.

4.   Click on Next
5.   For field label related to: select "Work Order" object and click Next.
Note: Do not select other standard object with the same name for sake of ease copy the above and paste it.

Assignment
New Relationship

Step 2. Choose the related object   Step 2

                                                                    Previous | Next | Cancel

Select the other object to which this object is related.

Related To   WorkOrder   ∨

                                                                    Previous | Next | Cancel

6. Give Field Label as "Work Order ID" and click Next.

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Assignment
New Relationship

Step 3. Enter the label and name for the lookup field	Step 3 of 6

Previous | **Next** | Cancel

Field Label   WorkOrder ID   [i]

Field Name   WorkOrder_ID   [i]

Description

Help Text   [i]

7. Next -->Next -->Save &New.

ACTIVITY2:Manage your pick list values

1. From the setup page go to object manager
2. Search and Select Work Order object.
3. Go to fields & relationship , select Location field ,scroll down to values and click "New"

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Values

New | Reorder | Replace | Printable View | Chart Colors ▼

Delete Selected | Deactivate Selected | Replace Selected

Action	Values	API Name	Default	Chart Colors	Modified By
Edit | Del | Deactivate	Pune	Pune		Assigned dynamically	demo project 22/11/2023, 9:53 am
Edit | Del | Deactivate	Hyderabad	Hyderabad		Assigned dynamically	demo project 22/11/2023, 9:53 am

4. Add the below values:

   Nasik
   Warangal
   Nanded

5. Click Save.

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Add Picklist Values
Location

Add one or more picklist values below. Each value should be on its own line and it is used for both a value's label and API name.

If a value matches an inactive value's API name, that value is reactivated with its previous label.

If a value matches an inactive value's label but not the API name, a new value is created.

```
Nasik
Warangal
Nanded
```

Save   Cancel

ACTIVITY3:Manage your pick list values

Add following values to the respective fields in Work Order object:

Field	Values
Priority	High
Service Type	Hardware repair Troubleshoot/Debugging Lane-Management

ACTIVITY4: Creating Formula Field in Work Order Object

1. Repeatstep1and2mentionedinactivity1
2. Select Data type as "Formula" and click Next.
3. GiveFieldLabelandFieldNameas"Date"andselectformulareturntypeas"Date" And click next.

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4. Under Advanced Formula write down the formula and click "Check Syntax"

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Formula: Created Date

5. Next-->Next-->Save.

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ACTIVITY5: Creating Remaining fields for the respective objects

Now create there maining fields using the data types mentioned in the table.

Sl N o	Object Name	Field	
		Field Name	**Datatype**
1	Assignment	• Technician ID • Assignment Date • Completion Date	Lookup(Technician) Formula: return type : Date (Work Order_IDr.Datec) Formula: return type : Date IF(ISPICKVAL(Work Order_IDr.Statusc,'Resolved'), Work Order_IDr.LastModifiedDate , NULL)

Profiles

Profile defines what an use risible to door see in the Sales force Org

ACTIVITY1: Technician Profile

   1. Go to setup-->type profiles in quick find box -->click on profiles -->click on new profile.

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SETUP

Profiles

Profiles

Help for this Page

All Profiles ˅ Edit | Delete | Create New View

New Profile   A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other A

	Action	Profile Name ↑	User License	Custom
☐	Edit	Clone	Analytics Cloud Integration User	Analytics Cloud Integration User	☐
☐	Edit	Clone	Analytics Cloud Security User	Analytics Cloud Integration User	☐
☐	Edit	Clone	Authenticated Website	Authenticated Website	☐
☐	Edit	Clone	Authenticated Website	Authenticated Website	☐
☐	Edit	Del I...	B2B Reordering Portal Buyer Profile	External Apps Login	✓

2. .Select 'StandardPlatformUser' for existing profile and give 'Technician' for ProfileName and Click on Save.

Clone Profile

Enter the name of the new profile.

You must select an existing profile to clone from.

Existing Profile	Standard Platform User ⌄
User License	Salesforce Platform
Profile Name	

Save | Cancel

3. While still on the profile page, then click Edit.
4. Scroll down to Custom Object Permissions and Give Read only access permissions for Technician ,Work Order and Assignment objects and field access permission as shown below:

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Custom Object Permissions

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Assets	☐	☐	☐	☐	☐	☐
Asset Services	☐	☐	☐	☐	☐	☐
Assignments	☑	☐	☐	☐	☐	☐
Billings	☐	☐	☐	☐	☐	☐
Bookings	☐	☐	☐	☐	☐	☐
Candidates	☐	☐	☐	☐	☐	☐
Child object	☐	☐	☐	☐	☐	☐
Crews	☐	☐	☐	☐	☐	☐
Customer Orders	☐	☐	☐	☐	☐	☐
Employees	☐	☐	☐	☐	☐	☐
Employment Websites	☐	☐	☐	☐	☐	☐
Flights	☐	☐	☐	☐	☐	☐
Items	☐	☐	☐	☐	☐	☐
Jewel Customers	☐	☐	☐	☐	☐	☐
Job Applications	☐	☐	☐	☐	☐	☐
Lead Scoring Rules	☐	☐	☐	☐	☐	☐

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Leaves	☐	☐	☐	☐	☐	☐
Parent object 1	☐	☐	☐	☐	☐	☐
Parent object 2	☐	☐	☐	☐	☐	☐
Passengers	☐	☐	☐	☐	☐	☐
Positions	☐	☐	☐	☐	☐	☐
Prices	☐	☐	☐	☐	☐	☐
Projects	☐	☐	☐	☐	☐	☐
ProjectTasks	☐	☐	☐	☐	☐	☐
Reviews	☐	☐	☐	☐	☐	☐
Sessions	☐	☐	☐	☐	☐	☐
Students	☐	☐	☐	☐	☐	☐
StudentSessions	☐	☐	☐	☐	☐	☐
Technician	☑	☐	☐	☐	☐	☐
Trainers	☐	☐	☐	☐	☐	☐
WorkOrder	☑	☐	☐	☐	☐	☐

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5. Scroll down and Click on Save.
6. Nowfromtheprofiledetailpagescrolldowntocustomfieldlevelsecurityclickonviewnext to Work Order object.

Custom Field-Level Security			
Asset	[View]	Lead Scoring Rule	[View]
Asset Service	[View]	Leave	[View]
Assignment	[View]	Parent object 1	[View]
Billing	[View]	Parent object 2	[View]
Booking	[View]	Passenger	[View]
Candidate	[View]	Position	[View]
Child object	[View]	Price	[View]
Crew	[View]	Project	[View]
Customer Order	[View]	ProjectTask	[View]
Employee	[View]	Review	[View]
Employment Website	[View]	Sessions	[View]
Flight	[View]	Student	[View]
Item	[View]	StudentSession	[View]
Jewel Customer	[View]	Technician	[View]
Job Application	[View]	Trainer	[View]
Knowledge	[View]	WorkOrder	[View]

7.Click on Save.

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Users:

Users are defined as the employees of your organization

ACTIVITY1:Create User

1. Gotosetup-->typeusersinquickfindbox-->selectusers-->clickNewuser.
2. Fillinthefields
   1. FirstName:Elina
   2. LastName:Gilbert
   3. Alias:GiveaAliasName
   4. Emailid:GiveyourPersonalEmail id
   5. Username:Usernameshouldbeinthisform:text@text.text
   6. NickName:GiveaNickname
   7. Role:
   8. Userlicense:SalesforcePlatform
   9. Profiles:Technician

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3. Save

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Apex Trigger

ACTIVITY1: Create an Apex Class
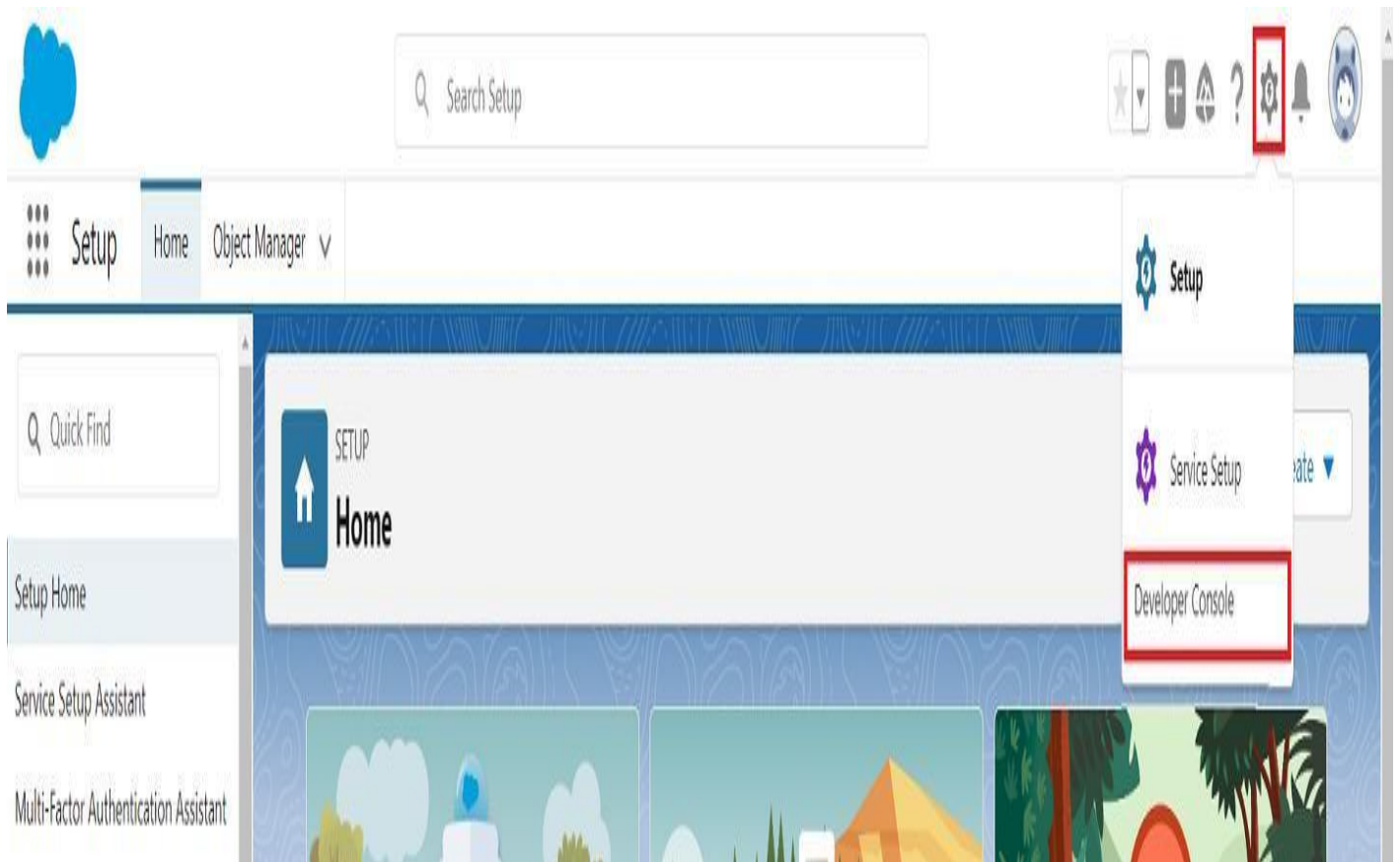
1. Go to Setup-->Click on the gear icon-->Select Developer Console.

2. Then we can see the Developer console .Click on the developer console and you will navigate to a new console window.

3. To create a new Apex Class follow the below steps:
Click on the file --> New --> Apex Class.

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| File ▾ | Edit ▾ | Debug ▾ | Test ▾ | Workspace ▾ | Help ▾ | < | > |

New	▸	Apex Class
Open	CTRL+O	Apex Trigger
Open Resource	CTRL+SHIFT+O	Visualforce Page
Open Lightning Resources	CTRL+SHIFT+A	Visualforce Component
Open Log	CTRL+G	Static Resource
Open Raw Log	CTRL+SHIFT+G	Lightning Application
Download Log	CTRL+ALT+G	Lightning Component
Save	CTRL+S	Lightning Interface
Save All	CTRL+SHIFT+S	Lightning Event
Delete	CTRL+DELETE	Lightning Tokens
Close	CTRL+/
Close All	CTRL+ALT+/
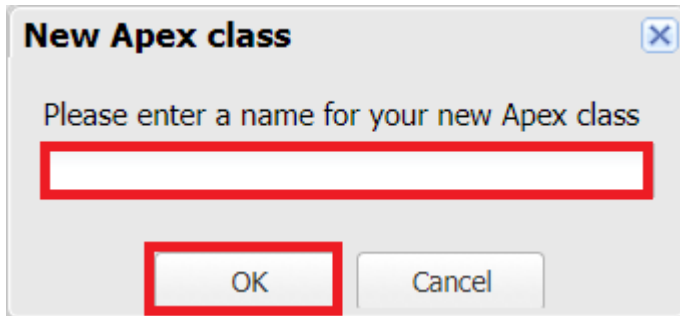
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4.Give the Apex Class name as "Work Order Class".

5. Click ok.

6. Now write the code logic here

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WorkOrderTrigger.apxt ⌧   **WorkOrderClass.apxc** ⌧

Code Coverage: None ▾ API Version 59 ▾   Go

```
1    public class WorkOrderClass {
2        public static void workOrder(List<WorkOrder_C> newListWorkOrder){
3            Map<Integer, List<String>> maptotech = new map<Integer,List<String>>();
4            integer num = 0;
5            List<WorkOrder__c> properWo = new List<WorkOrder_c>();
6            List<Assignment__c> lstAssignment = new List<Assignment__c>();
7            List<Technician__c> techniciantoAssignment = new List<Technician_c>();
8            for(WorkOrder_c iter : newListWorkOrder){
9                List<String> lststring = new List<string>();
10               If(iter.Service_Type__c != null && iter.Location__c != null ){
11                   num = num+1;
12                   properWo.add(iter);
13                   lststring.add(iter.Service_Type_c);
14                   lststring.add(iter.Location__c);
15
16                   maptotech.put(num,lststring);
17               }
18           }
19           Map<integer,Id> techId = new Map<integer,Id>();
20           Map<Id,Technician_c> allTechnician = new Map<Id,Technician_c>([SELECT Id, Name, Phone_c, Location_c, Skills_c, Availibility_c, Name_c, Email_c FROM Technician_c]);
21           integer num2 = 0;
22           For(Technician_c T : allTechnician.values()){
23               num2 = num2+1;
24               if(maptotech.get(num2) != null){
25                   List<string> valofmap = maptotech.get(num2);
26                   system.debug('error 1 ----> the maptotech is empty ---> ' + maptotech.get(num2));
27                   if(valofMap.contains(t.Skills_c) && ValofMap.contains(t.Location_c) && t.Availibility_c == 'Available'){
28                       techid.put(num2,t.Id);
29                   }
30               }
31
32           }
33           integer num3 = 0;
34           For(WorkOrder_c W : properWo){
```

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SourceCode:

```
publicclassWork OrderClass{
  public static void Work Order(List<Work OrderC> newListWork
    Order){
    Map<Integer,List<String>>maptotech=newmap<Integer,List<
    String>>(); integer num = 0;
    List<Work Orderc> properWo = new List<Work Orderc>();
    List<Assignmentc>          lstAssignment        =        new
    List<Assignmentc>();
    List<Technicianc>techniciantoAssignment=newList<Technici
    anc>(); for(Work Orderc iter : newListWork Order){
      List<String>  lststring  =  new  List<string>();
      If(iter.Service_Typec!=null&&iter.Locationc!=n
      ull){
        num        =        num+1;
        properWo.add(iter);
        lststring.add(iter.Service_Typec);
        lststring.add(iter.Locationc);

        maptotech.put(num,lststring);
      }
    }
    Map<integer,Id>techId=newMap<integer,Id>();
    Map<Id,Technicianc>allTechnician=newMap<Id,Technicianc>([SELECTId,Name,P
honec, Locationc, Skillsc,Availibilityc, Namec, Emailc FROMTechnicianc]);
    integernum2=0;
    For(TechniciancT:allTechnician.value
      s()){ num2 = num2+1;
      if(maptotech.get(num2)!=null){
        List<string>valofmap=maptotech.get(num2);
      system.debug('error 1 ----> the maptotech is empty ---> ' + maptotech.get(num2));
      if(valofMap.contains(t.Skillsc)&&ValofMap.contains(t.Locationc)&&t.Availibilityc=
      ='Available'){
        techid.put(num2,t.Id);
```

```
      }
      }


   }
   integernum3=0;
   For(Work
      OrdercW:properWo){   num3
      = num3 + 1;
      AssignmentcA=newAssignmentc();
      A.Work    Order_IDc    =    W.Id;
      A.Technician_IDc                =
      techid.get(num3);
      lstAssignment.add(A);
   }
   If(!lstAssignment.IsEmpty(
      )){ insert lstAssignment;
   }
  }
}
```

7. Save the code.(click on file--> Save)

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ACTIVITY2:Create an Apex Trigger

1. To create a new Apex Class follow the below steps:
Click on the file-->New-->Apex Class.
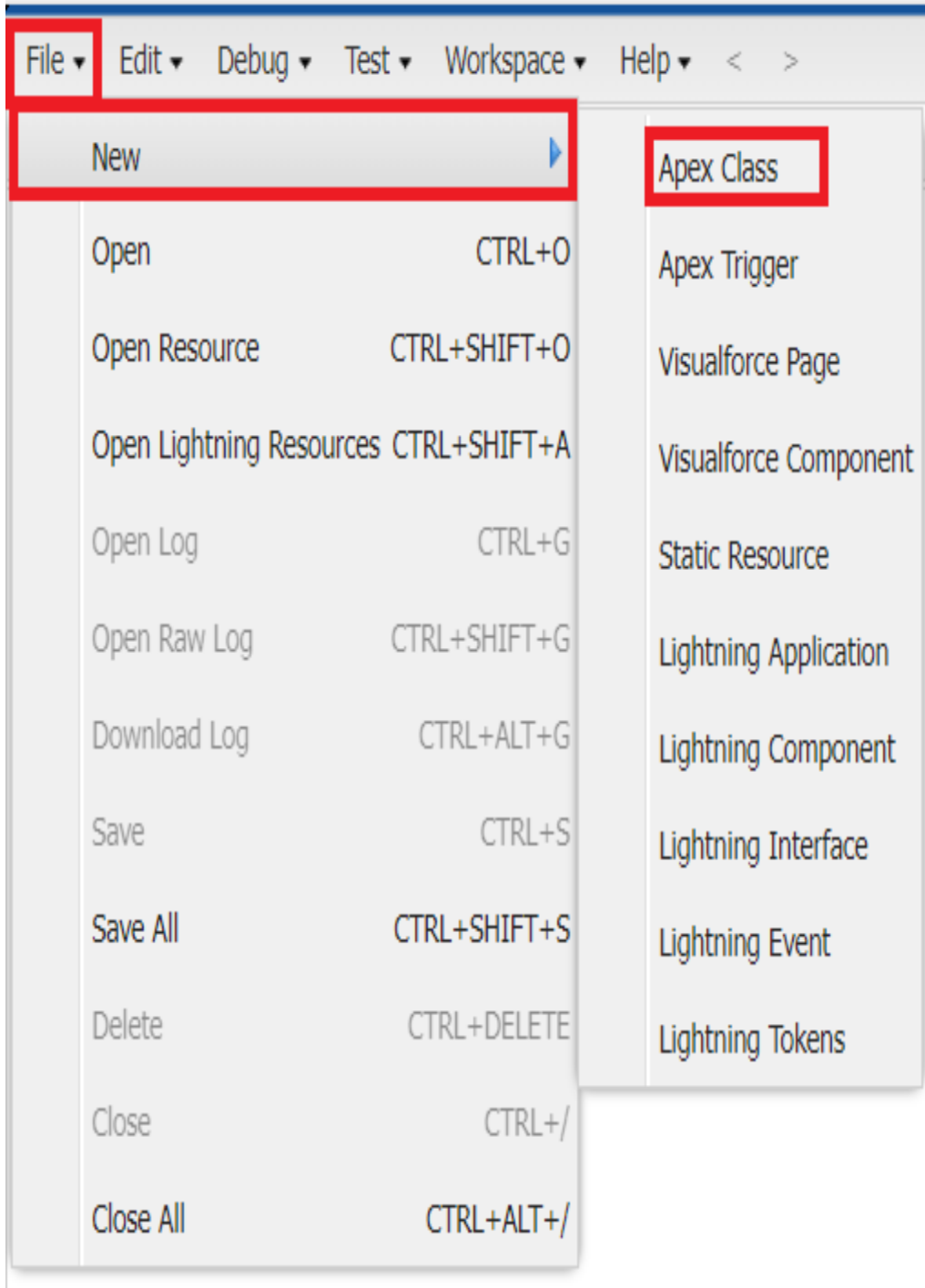
2. Give the Apex Trigger name as "Work Order Trigger", and select "Work Order___c" from The drop down for s Object.

3. Click Submit.
4. Now write the code logic here

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SourceCode:
```
trigger Work OrderTrigger on Work Order__c(afterinsert){
    if(trigger.isafter && trigger.isinsert){
        Work OrderClass.Work Order(trigger.new);
    }
}
```

5.   Save the code.(click on file-->Save)

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ACTIVITY3: Create an Apex Class

1.Go to Setup-->Click on the gear icon-->Select Developer Console.

2. ThenwecanseetheDeveloperconsole.Clickonthedeveloperconsoleandyouwill navigate to a new console window.

3. To create a new Apex Class follow the below steps:
   Click on the file --> New --> Apex Class.

4. Give the Apex Class name as "Assigning Email".

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New Apex class   ✕

Please enter a name for your new Apex class

[   ]

OK   Cancel
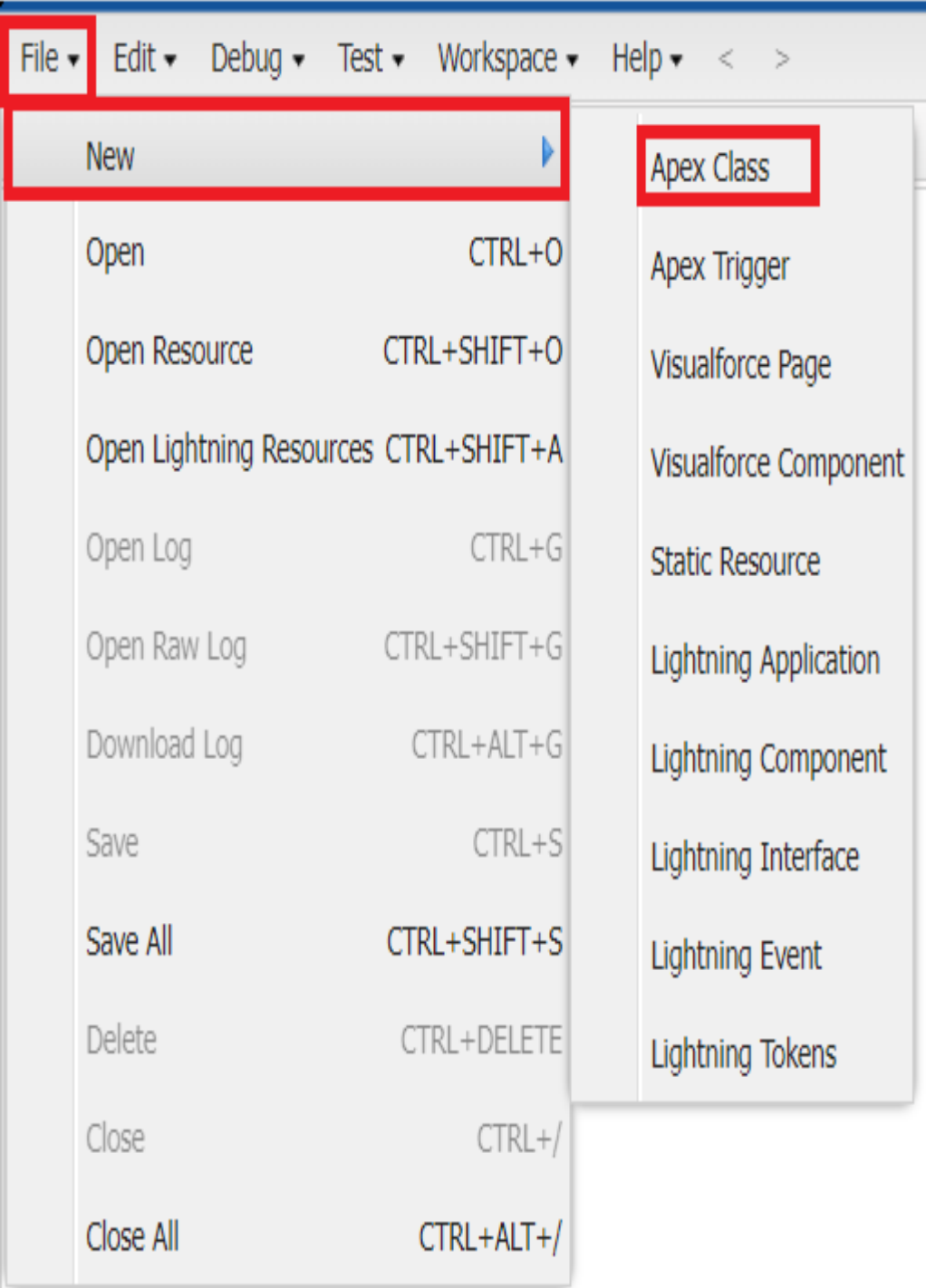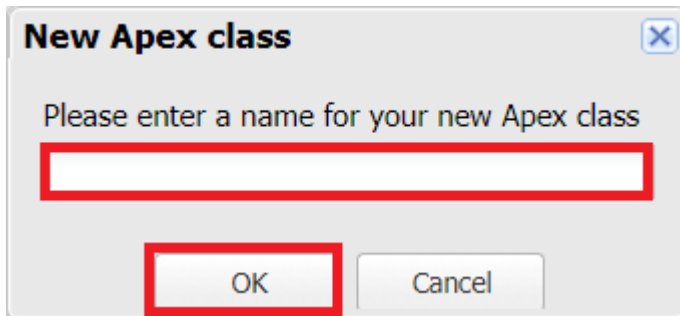
4. Click ok.
5. Now write the code logic here

```
File ▾  Edit ▾  Debug ▾  Test ▾  Workspace ▾  Help ▾   <  >
AssigningEmail.apxc
Code Coverage: None ▾  API Version: 59 ▾

1   public class AssigningEmail {
2       public static void sendEmailmsg(List<Assignment__c> assRec){
3           List<messaging.SingleEmailMessage> myVar = new List<messaging.SingleEmailMessage>();
4           Map<id,Technician__c> tecnicians = new Map<id,Technician__c>([SELECT Id, Phone__c, Location__c, Skills__c, Name__c, Email__c, Availibility__c, Name FROM Technician__c]);
5           try{
6               for(Assignment__c con : assRec){
7                   if(con.Technician_ID__c != null){
8                       messaging.SingleEmailMessage mail = new messaging.SingleEmailMessage();
9                       List<String> sendTo = new List<String>();
10                      sendTo.add(tecnicians.Get(con.Technician_ID__c).Email__c);
11                      mail.setToAddresses(sendTo);
12                      string subject = ' email sub';
13                      mail.setSubject(subject);
14                      string body = 'email body ';
15                      mail.setHTMLbody(body);
16                      myVar.add(mail);
17                  }
18              }
19              Messaging.sendEmail(myvar);
20          }
21          catch(exception e){
22              system.debug('Error -----> ' + e.getMessage());
23          }
24      }
25
26  }
```

Field Service Work Order Optimization

SourceCode:

```
publicclassAssigningEmail{
  public    static    void    sendEmailmsg(List<Assignmentc>    assRec){
    List<messaging.SingleEmailMessage>myVar=newList<messaging.SingleEma
    ilMessage>();
    Map<id,Technicianc>tecnicians=newMap<id,Technicianc>([SELECTId,Phonec,Locati
onc, Skillsc, Namec, Emailc, Availibilityc, Name FROM Technicianc]);
    try{
      for(Assignmentc    con    :
        assRec){
        if(con.Technician_IDc!=nu
        ll){
          messaging.SingleEmailMessagemail=newmessaging.SingleEmailMessa
          ge();    List<String>    sendTo    =    new    List<String>();
          sendTo.add(tecnicians.Get(con.Technician_IDc).Emailc);
          mail.setToAddresses(sendTo);
          stringsubject='Work        OrderAssignment';
          mail.setSubject(subject);
          stringbody='ThefollowingWork
          Orderhasbeenassignedtoyou'; mail.setHTMLbody(body);
          myVar.add(mail);
        }
      }
      Messaging.sendEmail(myvar);
    }
    catch(exceptione){
      system.debug('Error >'+ e.getMessage());
    }
  }
}
```

SourceCode:

```
publicclassAssigningEmail{
  public    static    void    sendEmailmsg(List<Assignmentc>    assRec){
    List<messaging.SingleEmailMessage>myVar=newList<messaging.SingleEma
    ilMessage>();
    Map<id,Technicianc>tecnicians=newMap<id,Technicianc>([SELECTId,Phonec,Locati
onc, Skillsc, Name c, Email c, Availibilityc, Name FROM Technicianc]);
    try{
```

```
    for(Assignmentc    con    :
      assRec){
      if(con.Technician_IDc!=nu
      ll){
        messaging.SingleEmailMessagemail=newmessaging.SingleEmailMessa
        ge();    List<String>    sendTo    =    new    List<String>();
        sendTo.add(tecnicians.Get(con.Technician_IDc).Emailc);
        mail.setToAddresses(sendTo);
        stringsubject='Work        OrderAssignment';
        mail.setSubject(subject);
        stringbody='ThefollowingWork
        Orderhasbeenassignedtoyou'; mail.setHTMLbody(body);
        myVar.add(mail);
      }
    }
    Messaging.sendEmail(myvar);
  }
  catch(exceptione){
    system.debug('Error >'+ e.getMessage());
  }
 }
}
```
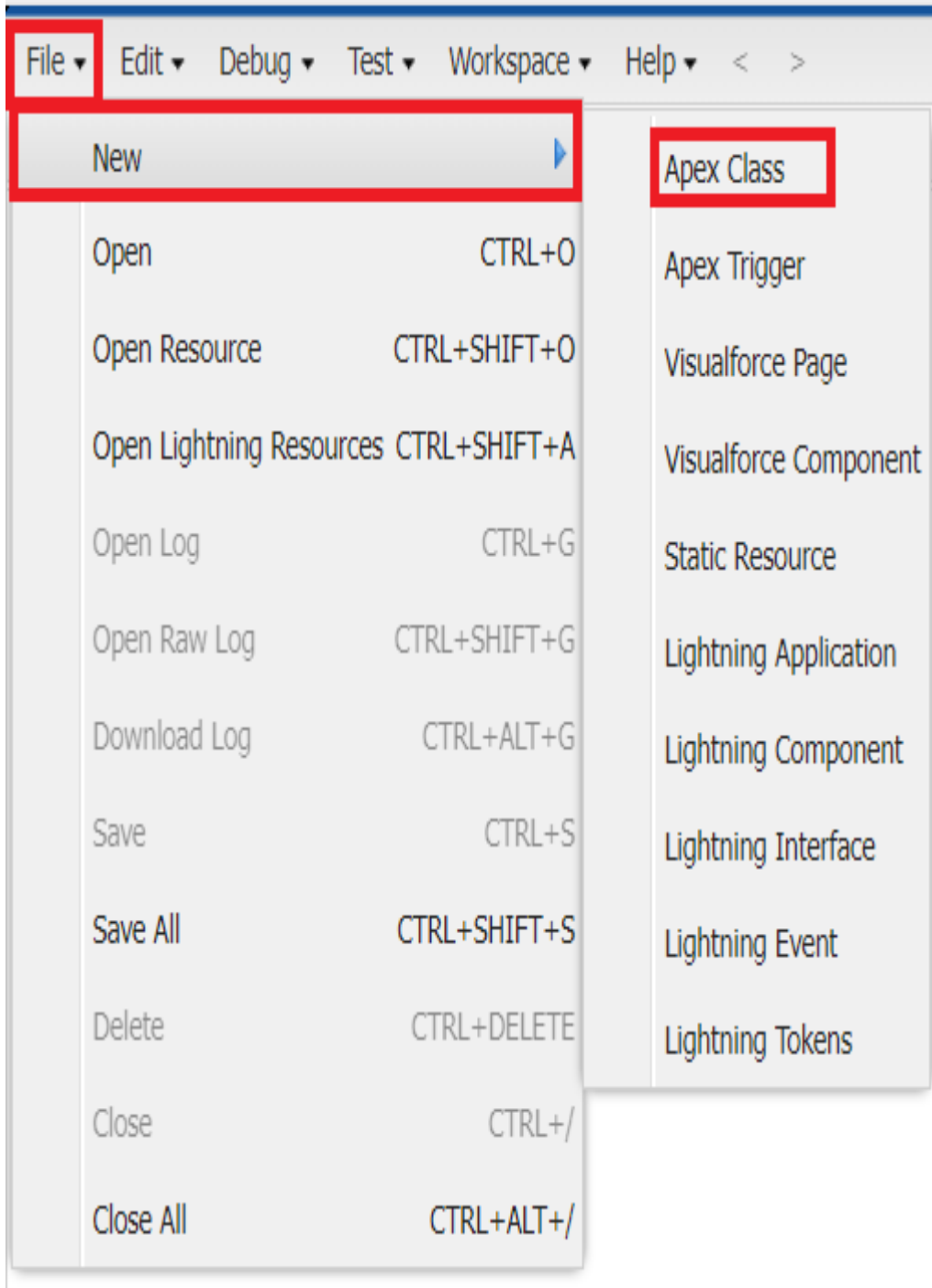
6. Save the code.(click on file--> Save)

Field Service Work Order Optimization

ACTIVITY4: Create an Apex Trigger

To create a new Apex Class follow the below steps:

1. Click on the file-->New-->Apex Class.

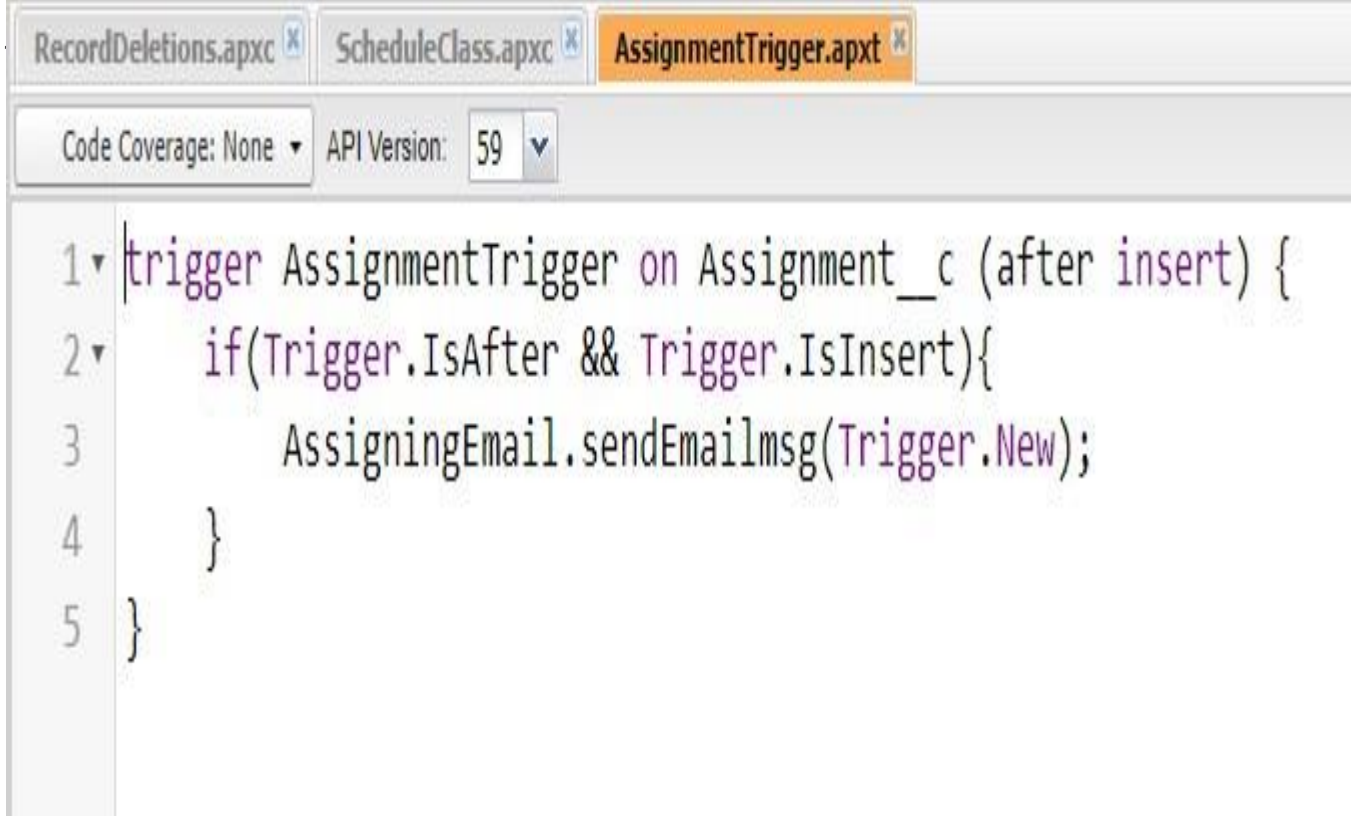2. GivetheApexTriggernameas"AssignmentTrigger",andselect"Assignment__c" from the Drop down for s Object.

3. Click Submit.

4. Now write the code logic here

Field Service Work Order Optimization

ACTIVITY5: Create an Apex Class

Source Code:

trigger Assignment Trigger on Assignment

_____c(afterinsert){

  if(Trigger.IsAfter && Trigger.IsInsert){

    Assigning Email .send Email msg(Trigger.New);

  }
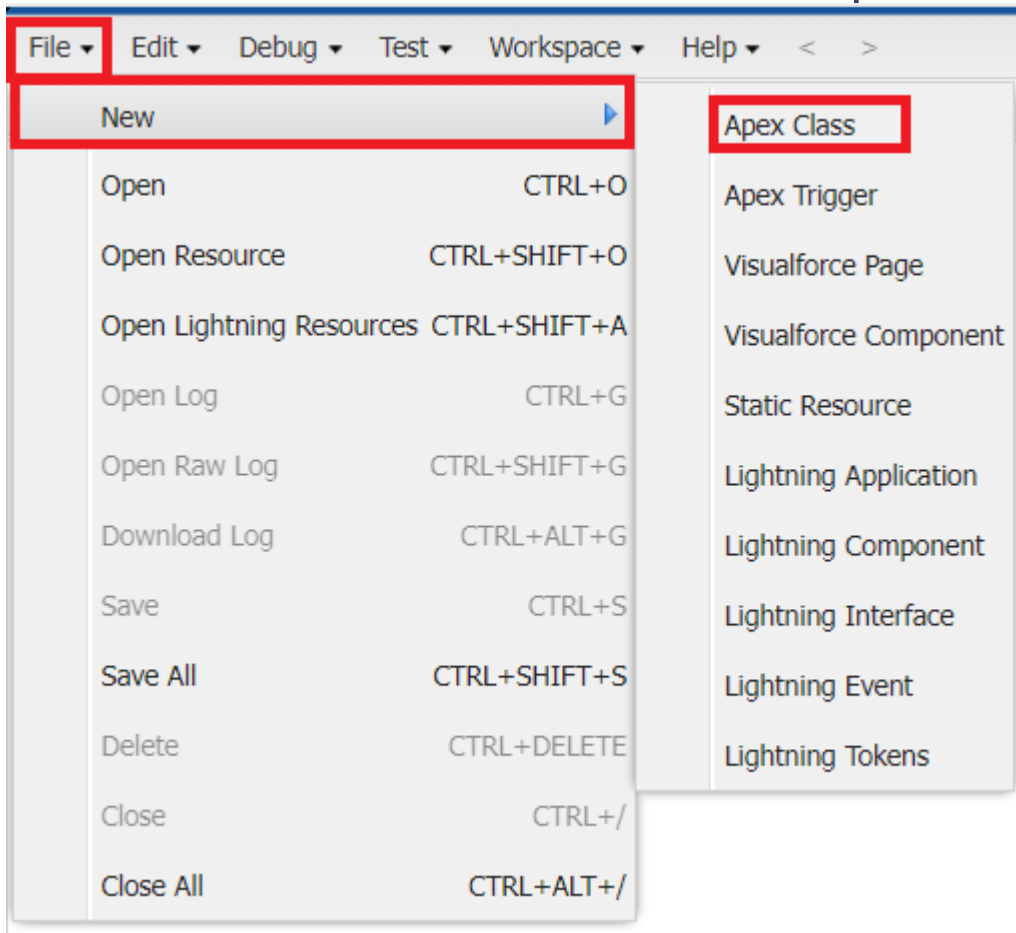
}

5. Save the code.(click on file-->Save)

.

Field Service Work Order Optimization

2. Then we can see the Developer console .Click on the developer console and you will navigate to a new console window.
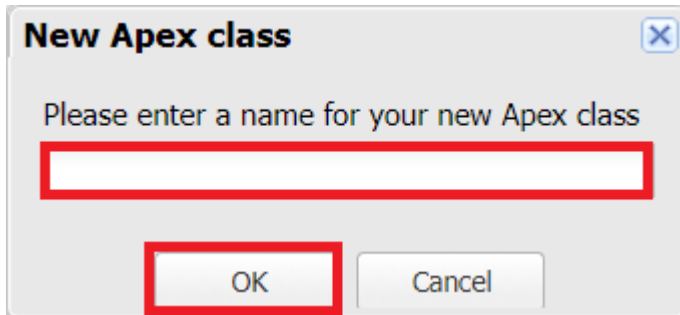
3. To create a new Apex Class follow the below steps:

Click on the file --> New --> Apex Class.

Field Service Work Order Optimization

4.Give the Apex Class name as "Completion Mail".
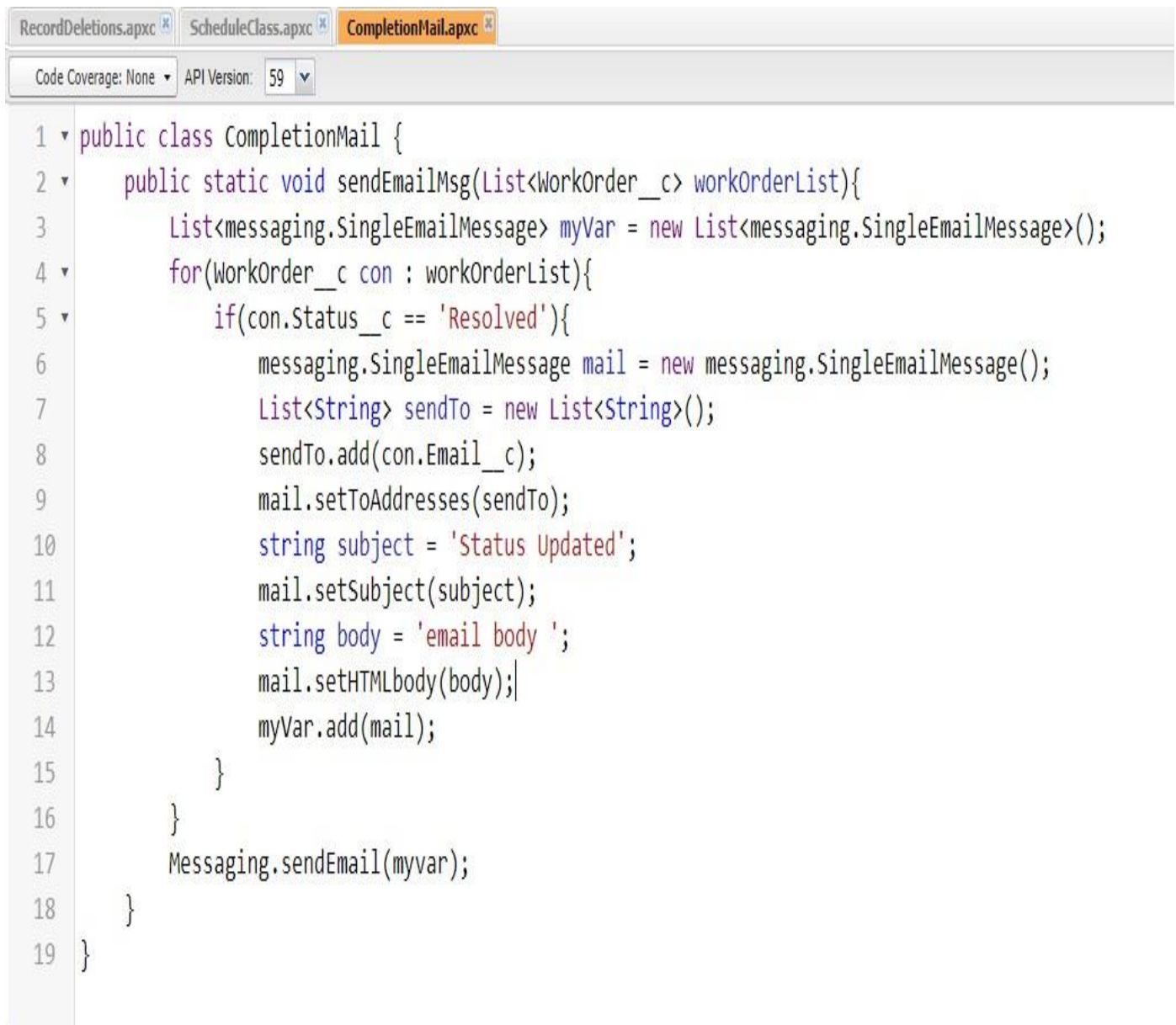
New Apex class ☒

Please enter a name for your new Apex class

[   ]

OK   Cancel

5. Click ok.
6. Now write the code logic here

RecordDeletions.apxc ☒ ScheduleClass.apxc ☒ **CompletionMail.apxc** ☒

Code Coverage: None ▾ API Version: 59 ▾

```apex
1  public class CompletionMail {
2      public static void sendEmailMsg(List<WorkOrder__c> workOrderList){
3          List<messaging.SingleEmailMessage> myVar = new List<messaging.SingleEmailMessage>();
4          for(WorkOrder__c con : workOrderList){
5              if(con.Status__c == 'Resolved'){
6                  messaging.SingleEmailMessage mail = new messaging.SingleEmailMessage();
7                  List<String> sendTo = new List<String>();
8                  sendTo.add(con.Email__c);
9                  mail.setToAddresses(sendTo);
10                 string subject = 'Status Updated';
11                 mail.setSubject(subject);
12                 string body = 'email body ';
13                 mail.setHTMLbody(body);
14                 myVar.add(mail);
15             }
16         }
17         Messaging.sendEmail(myvar);
18     }
19 }
```

Source Code:

```
Public class Completion Mail {
   public static void sendEmailMsg(List<Work Order__c>Work
      OrderList){ List<messaging.SingleEmailMessage> myVar = new
List<messaging.SingleEmailMessage>();
      for(Work Order_ccon:Work
      OrderList){
         if(con.Status__c=='Resolved'){
            messaging.SingleEmailMessagemail=newmessaging.SingleEmailMessage();
            List<String> sendTo = new List<String>();
            sendTo.add(con.Email__c);
            mail.setToAddresses(sendTo);
            stringsubject='StatusUpdated';
            mail.setSubject(subject);
            stringbody='emailbody';
            mail.setHTMLbody(body)
            ; myVar.add(mail);
         }
      }
      Messaging .send Email(my var);
   }
}
```
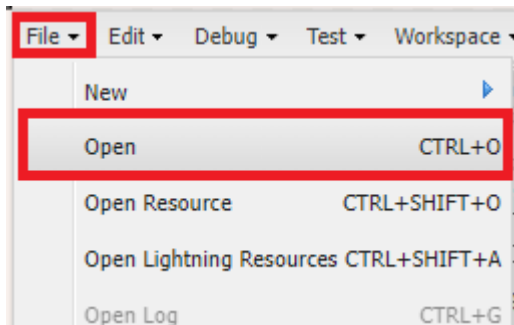
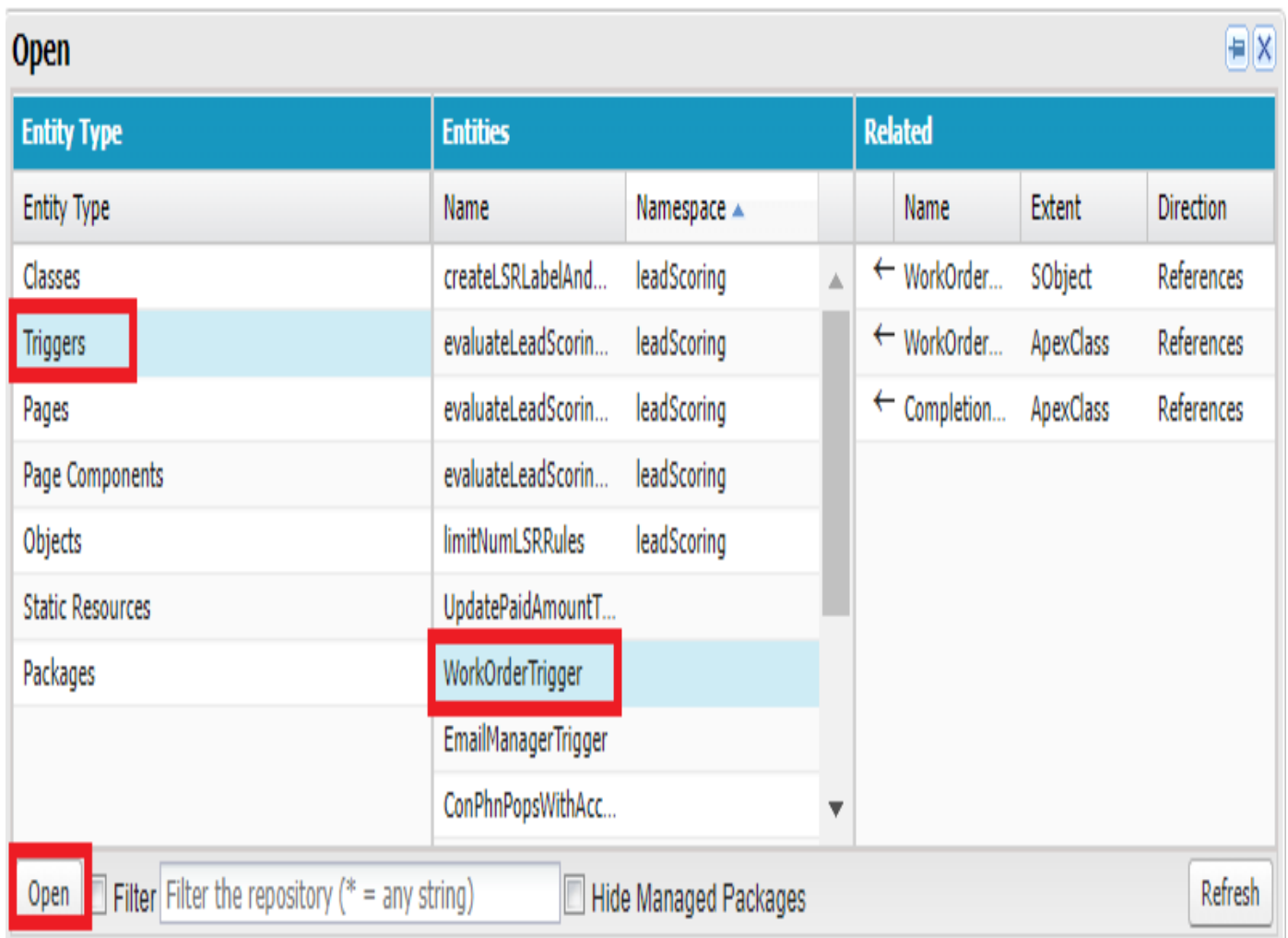7. Save the code.(click on file--> Save)

Field Service Work Order Optimization

ACTIVITY6: Create an Apex Trigger

1. Click on the file --> Open.

2. A popup window opens click on Triggers , then select "Work Order Trigger" and click
3. on "Open"

4. Now write the code logic here.

```
RecordDeletions.apxc   ScheduleClass.apxc   CompletionMail.apxc   WorkOrderTrigger.apxt

Code Coverage: None ▾   API Version: 59 ▾

1▾ trigger WorkOrderTrigger on WorkOrder__c (after insert, after update) {
2▾     if(Trigger.IsAfter && Trigger.IsInsert){
3          WorkOrderClass.workOrder(trigger.new);
4      }
5▾     if(Trigger.IsAfter && Trigger.IsUpdate){
6          CompletionMail.sendEmailMsg(Trigger.New);
7      }
8  }
```

```
Work OrderClass.Work Order(trigger.new);
    }
   if(Trigger .Is After && Trigger .Is Update){ Completion Mail .
     send Email Msg(Trigger .New);
    }
}
```

5. Save the code.(click on file-->Save)

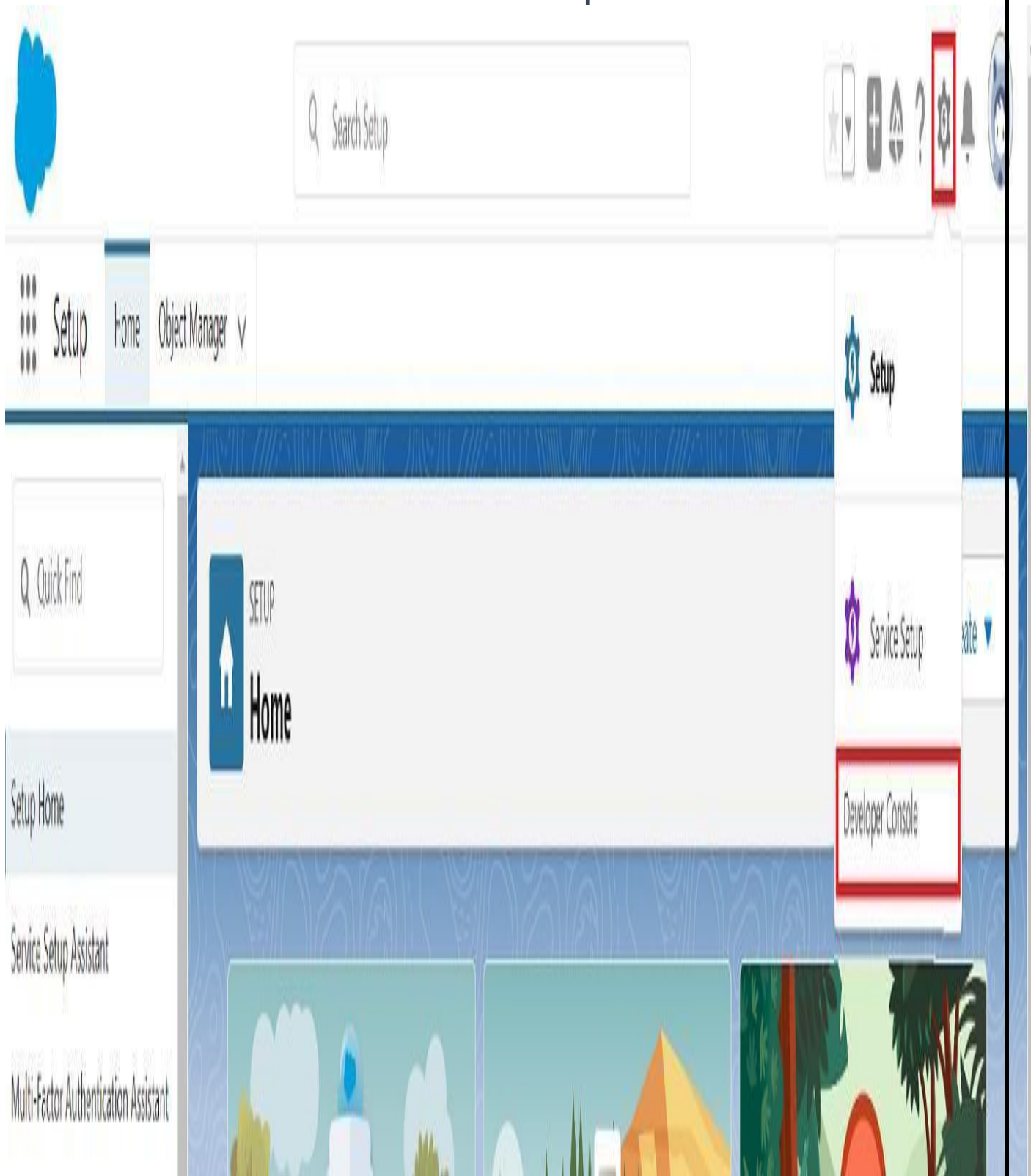ACTIVITY7:Create an A synchronous Apex Class

Create an Apex Class to Delete all the Work Order records which meets the following criteriaL

1. Completeddateshouldbemorethan30days.
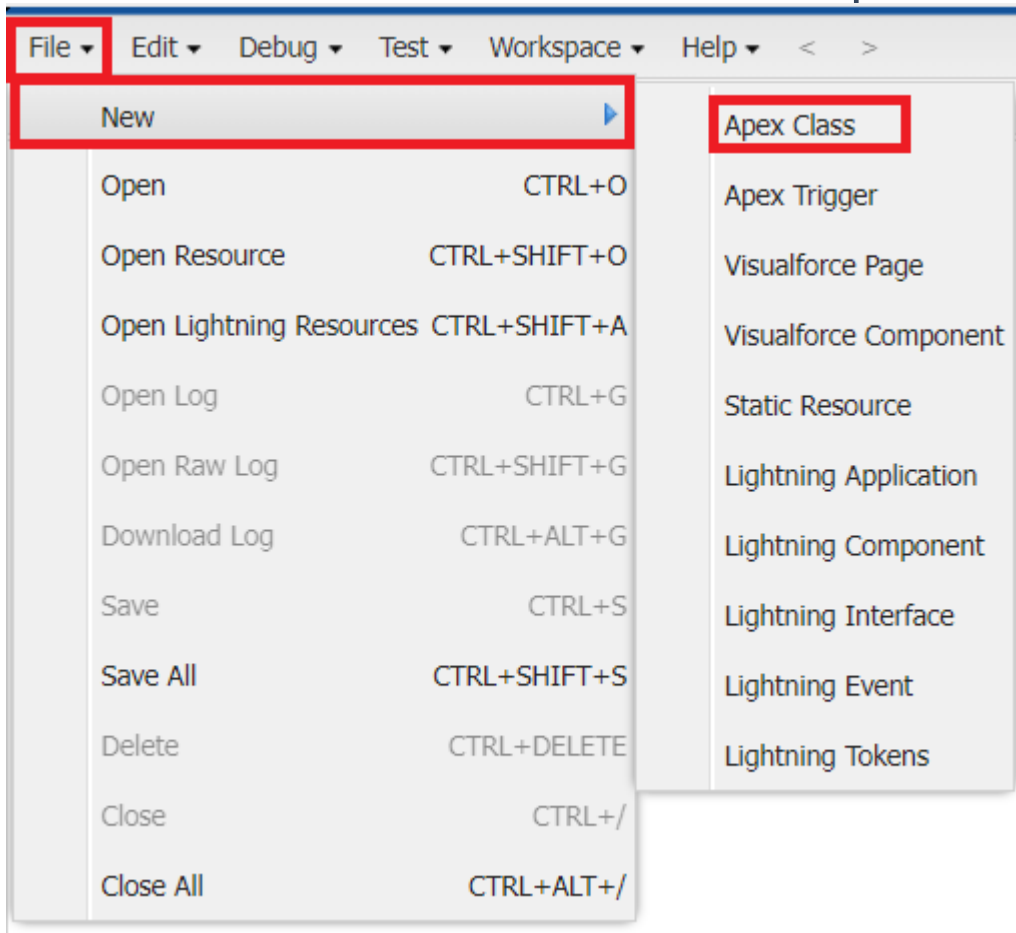2. Status should be 'Resolved'.

Create an Apex Class

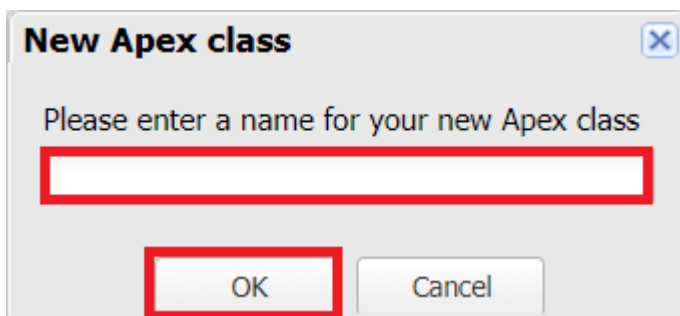1. Go to Setup -->Click on the gear icon-->Select Developer Console.

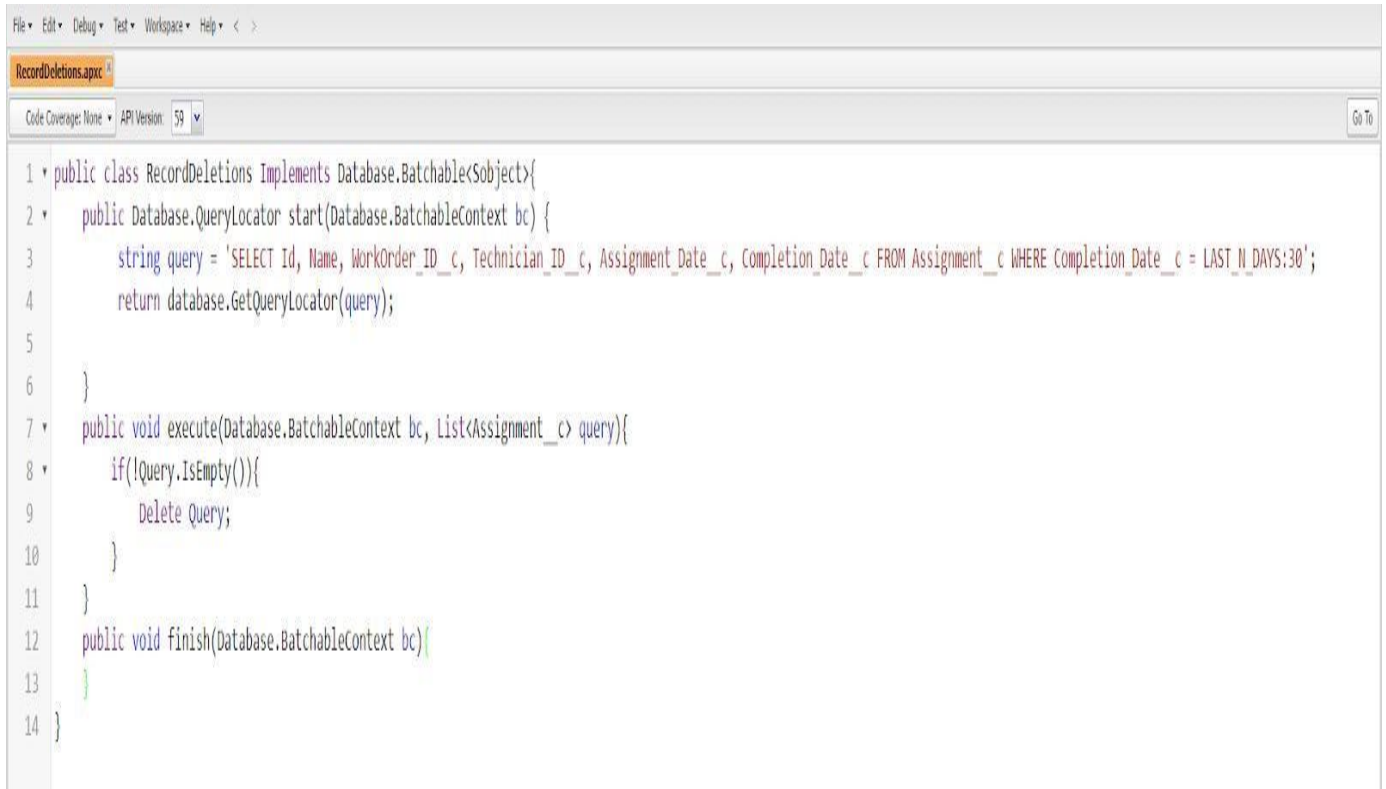# Field Service Work Order Optimization

Field Service Work Order Optimization

4.   Give the Apex Class name as "Record Deletion".

5.Click ok.
6.Now write the code logic here

Field Service Work Order Optimization

RecordDeletions.apxc

Code Coverage: None ▾   API Version: 59 ▾   Go To

```
1   public class RecordDeletions Implements Database.Batchable<Sobject>{
2       public Database.QueryLocator start(Database.BatchableContext bc) {
3           string query = 'SELECT Id, Name, WorkOrder_ID__c, Technician_ID__c, Assignment_Date__c, Completion_Date__c FROM Assignment__c WHERE Completion_Date__c = LAST_N_DAYS:30';
4           return database.GetQueryLocator(query);
5
6       }
7       public void execute(Database.BatchableContext bc, List<Assignment__c> query){
8           if(!Query.IsEmpty()){
9               Delete Query;
10          }
11      }
12      public void finish(Database.BatchableContext bc){
13      }
14  }
```

Field Service Work Order Optimization

Source Code:

```
publicclassRecordDeletionsImplementsDatabase.Batchable<Sobject>{
    public Database.QueryLocator start(Database.BatchableContext bc) {
        string query = 'SELECT Id, Name, Work Order_ID_____c,
        Technician_ID____c, Assignment_Date__c, Completion_Date___c   FROM
        Assignment_____cWHERE Completion_Date___c              =
        LAST_N_DAYS:30';
         return data base. Get Query Locator (query);
    }
    public  void  execute(Data  base  .Batch  able  Context  b  c,  List<Assignment
                                                       c>query){
        if(!Query .Is Empty()){
           Delete Query;
        }
    }
    Public void finish (Data base . Batch able Con text b c){
    }
}
```

7. Save the code.(click on file-->Save)
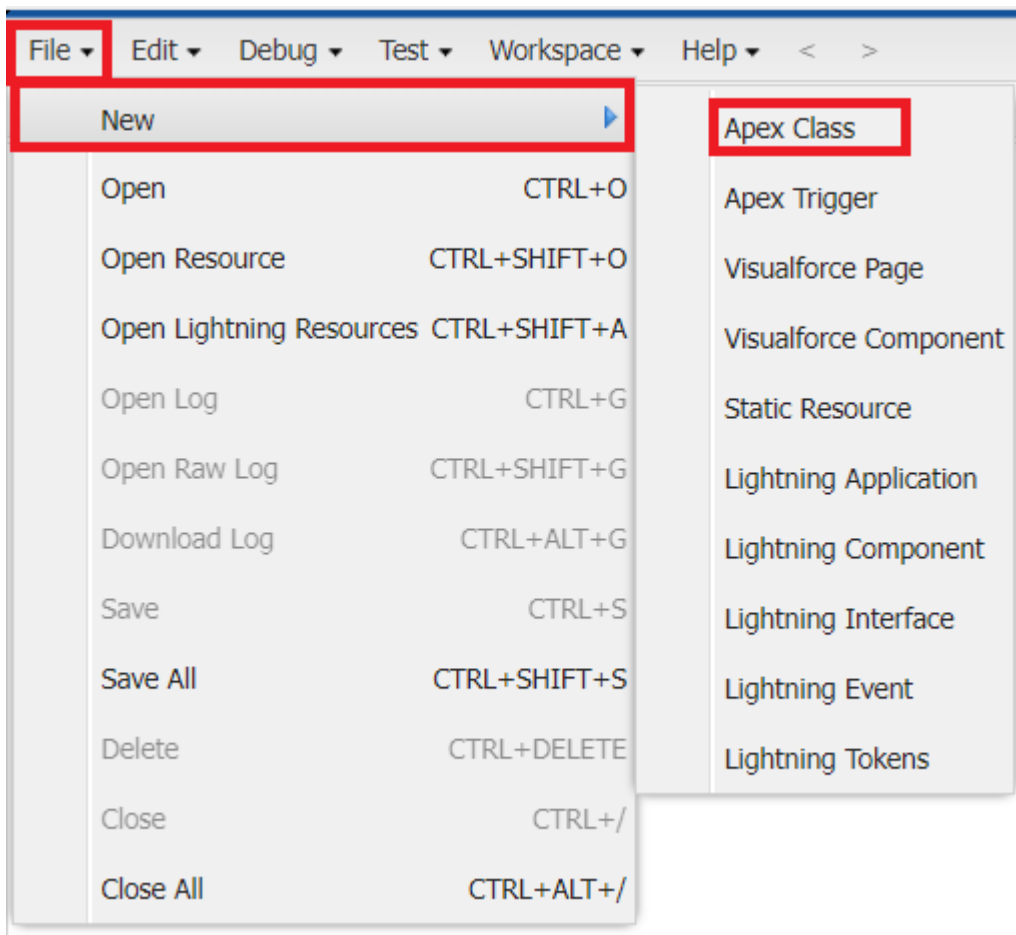
.

Field Service Work Order Optimization

ACTIVITY8:Create an Apex Schedule Class

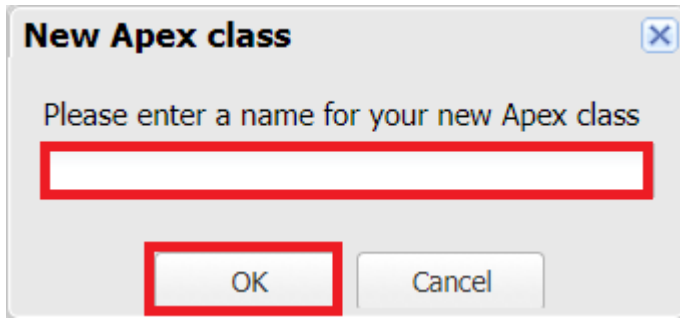1. Go to Setup-->Click on the gear icon-->Select Developer Console.
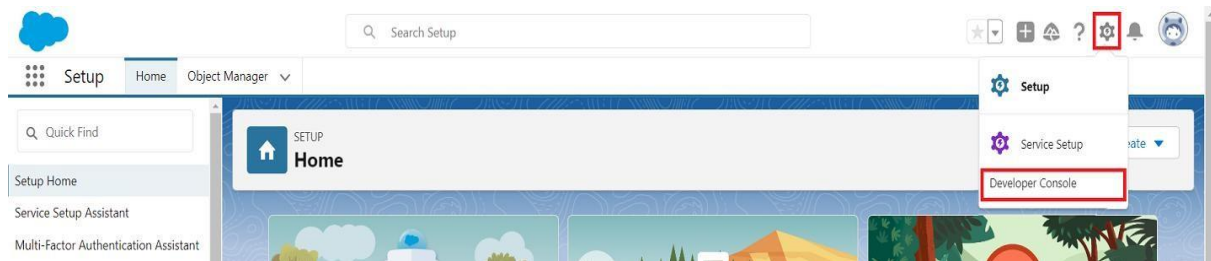
2. Then we can see the Developer console .Click on the developer console and you will navigate to a new console window.
3. To create a new Apex Class follow the below
steps: Click on the file --> New --> Apex Class.

4. Give the Apex Class name as "Schedule Class".

5. Click ok.
6. Now write the code logic here

Field Service Work Order Optimization

```
RecordDeletions.apxc    ScheduleClass.apxt

Code Coverage: None ▼  API Version: 59 ▼

1▼ global class ScheduleClass implements Schedulable {

2▼     global void execute(SchedulableContext SC) {

3          RecordDeletions delrec = new RecordDeletions();

4          database.executeBatch(delrec, 200);

5      }

6 }
```

Source Code:

```
Global class Schedule Class implements Schedulable{
  global void execute(Schedulable Context SC) {
    Record Deletions delrec =new Record Deletions(); data base
    .execute Batch(delrec, 200);
  }
```

}

7. Save the code.(click on file? Save)

Field Service Work Order Optimization

ACTIVITY9: Createa Schedule Apex

1. Schedule the Apex class:
2. From the Setup page search for "Apex Classes" in quick search.
3. Click on "Schedule Apex" as shown below.

4. Click on Schedule Apex and enter the Job name.

a.   Job Name : Delete Assignment Schedule
b.   Apex Class : Schedule Class(from clicking on lookup icon)
c.   Frequency :Monthly
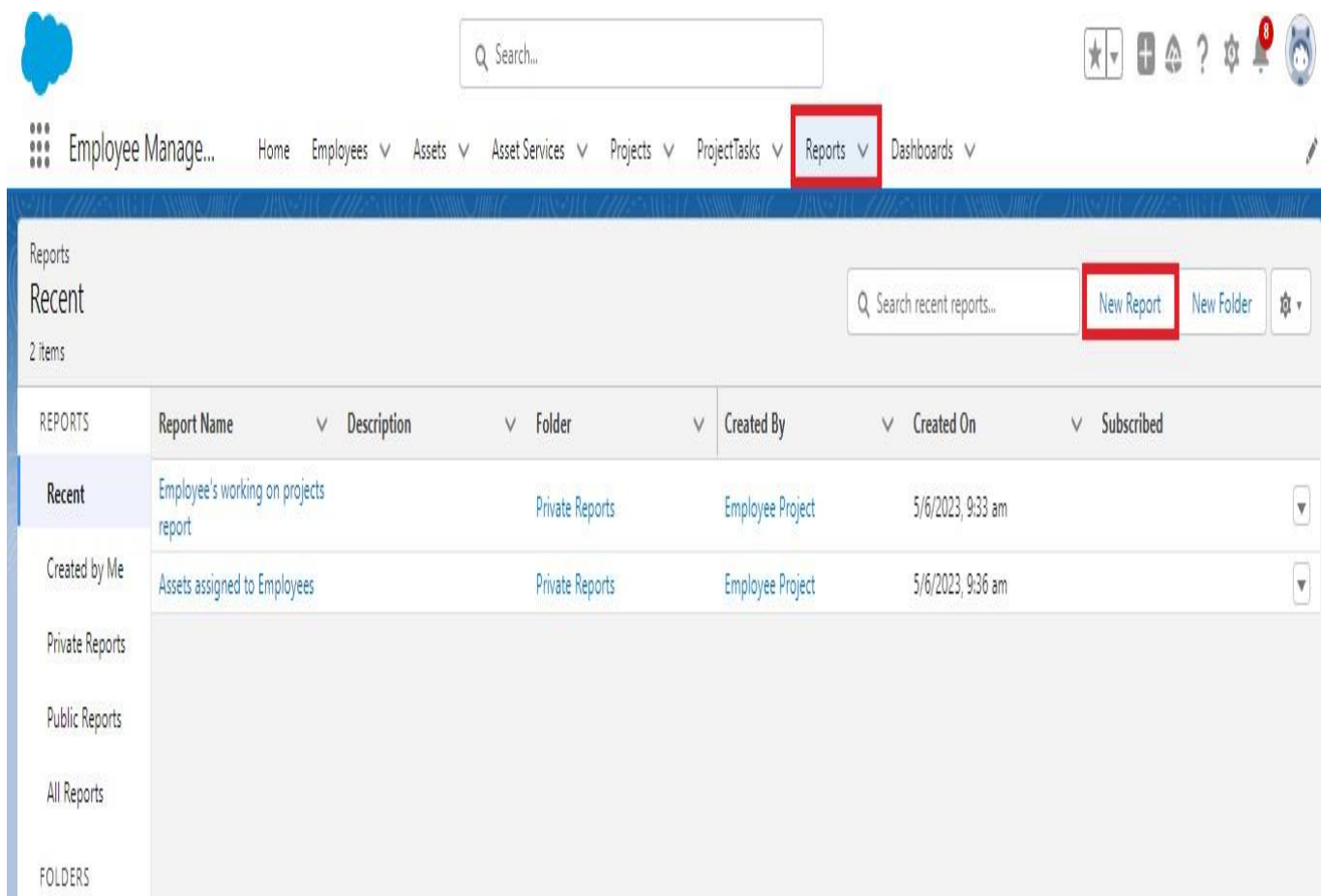   d.   Preferred Start Time :Select any time

5. Click Save.

Field Service Work Order Optimization

Reports & Dashboards

Sales force Reports and Dashboards are powerful tools that empower users to visualize and analyze data within the Sales force platform. They play a crucial role in providing insights, monitoring performance, and making informed business decisions.

ACTIVITY1:Report

1. Go to the app-->click on the reports tab
2. Click New Report.

3.Select report type from category or from report type panel or from search panel -->click on start report.

Field Service Work Order Optimization

Create Report

Category	Select a Report Type	Details ⊠

Category

- Recently Used
- **All** 1
- Accounts & Contacts
- Opportunities
- Customer Support Reports
- Leads
- Campaigns
- Activities
- Contracts and Orders
- Price Books, Products and Assets
- Administrative Reports

Select a Report Type

🔍 assignment   2   ⊗

Report Type Name	Category	
Assignments	Standard	▼
Assignments with WorkOrder ID 3	Standard	▼
Assignments with Technician ID	Standard	▼

Details

Assignments with WorkOrder ID
Standard Report Type
4

Start Report ▼

ⓘ Details   ☰ Fields (32)

Created By You
No Reports Yet

Created By Others
No Reports Yet

Objects Used in Report Type

🗑 Owner

WorkOrder

Field Service Work Order Optimization

4.   Customize your report
   - Add fields from left pane as shown below
   - Grouped by Work Order ID

5. Save or run it.

Note: Reports may get varied from the above pictures as the data might be different.

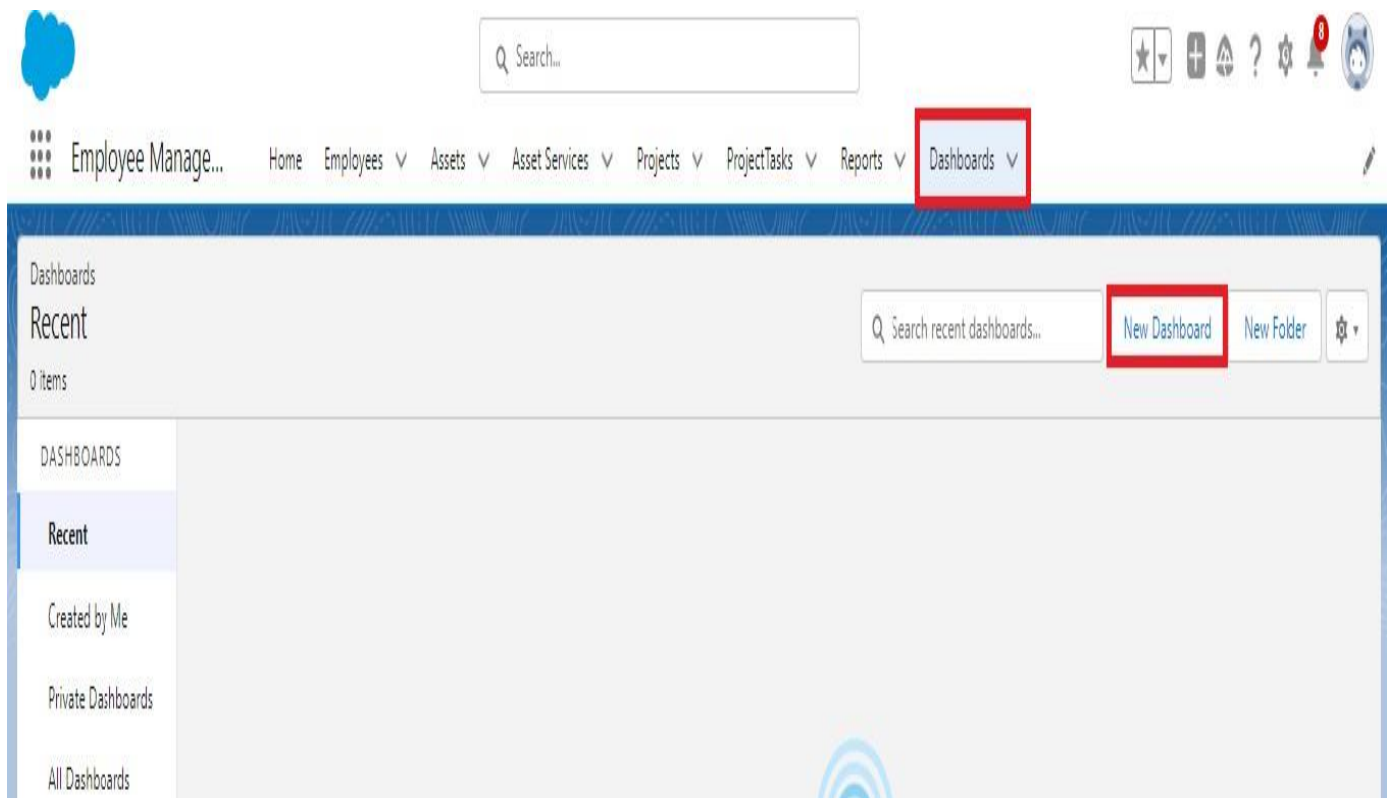# Field Service Work Order Optimization

ACTIVITY2:CreateReports

1. Create are port with report type :"Work Orders Status Reports".
2. Create are port with report type:"Technician and Assignment Details Reports".

Field Service Work Order Optimization

ACTIVITY3: Dashboard

1.Go to the app -->click on the Dashboards tabs.

2. Give a Name and click on Create.

Field Service Work Order Optimization

New Dashboard

*Name

Dashboard 1

Description

Folder

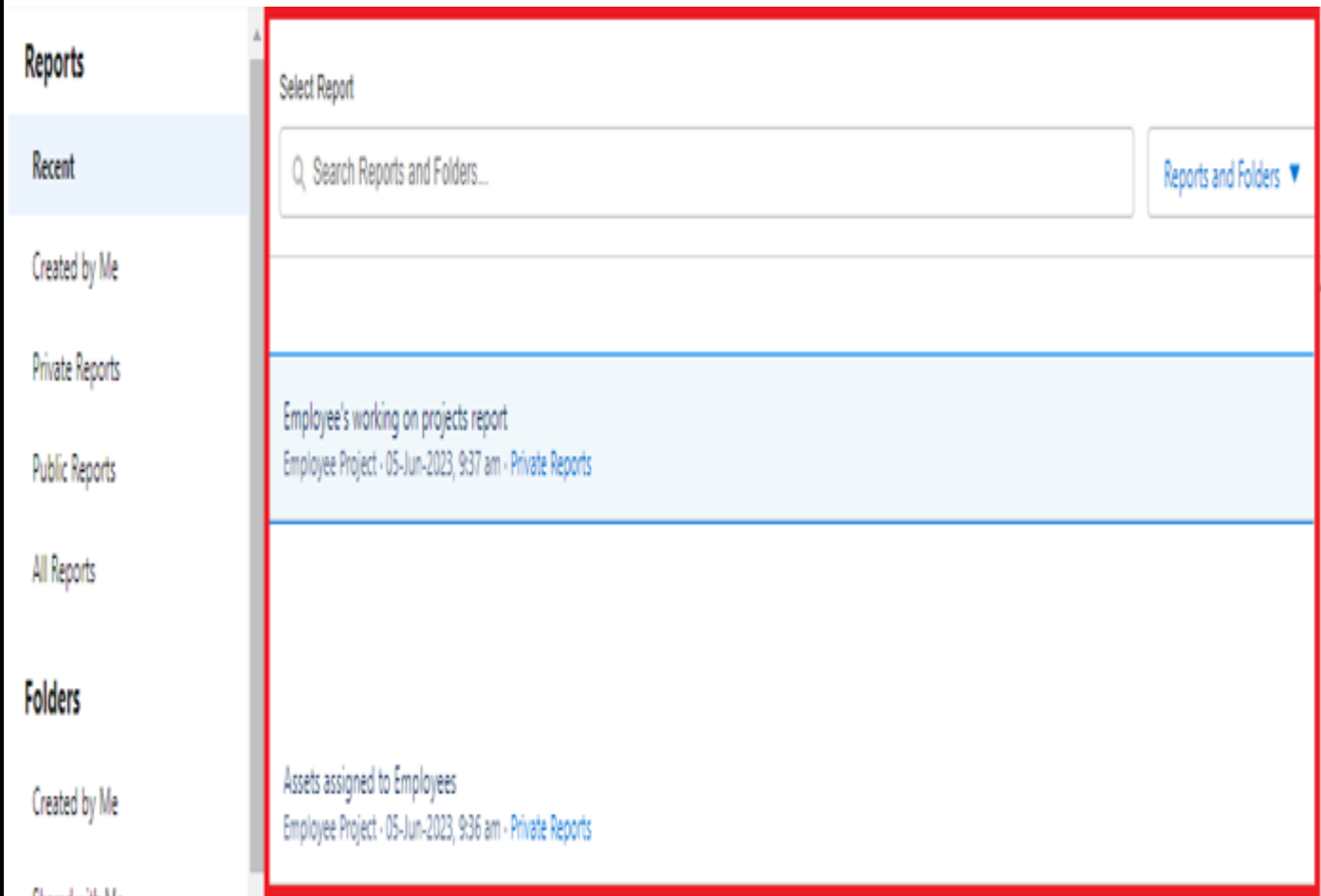Private Dashboards   Select Folder

Cancel   **Create**

3. Select add component.

Employee Manage....   Home   Employees ∨   Assets ∨   Asset Services ∨   Projects ∨   ProjectTasks ∨   Reports ∨   Dashboards ∨

Dashboard 1   **+ Component**   + Filter   Save ∨   Done

Field Service Work Order Optimization

4SelectaReportwhichwehavecreatedinthepreviousactivitiesandclickon select

6. Click Add then click on Save and then click on Done.

ACTIVITY4:Create Dashboards

Create another Dashboard as wed is cussed in activity 3which shows the details of completed Work Order status in a vertical bar graph.