SOSL QUERIES

SOSL ----> Salesforce Object Search Language

By using SOSL Queries, we can search for the required content in all the fields inside the salesforce object.

We can search for the content in multiple objects at a time.

If the search content is found in any of the record, it will return the record back to the calling environment.

SOSL Queries should be prepared by using "FIND Statement".

Syntax:

```
FIND 'searchcontent*' IN ALL FIELDS RETURNING

        ObjectName1(<Field1>, <Field2>, <Field3>,....,<FieldN>),

        ObjectName2(<Field1>, <Field2>, <Field3>,....,<FieldN>),

        ObjectName3(<Field1>, <Field2>, <Field3>,....,<FieldN>),

                        .....

                        .....

        ObjectName20(<Field1>, <Field2>, <Field3>,....,<FieldN>)
```

Governor Limits

1. We can have maximum of 20 SOSL Queries within a single transaction.

2. Each SOSL query can search for the content in maximum of 20 objects.

3. Each SOSL Query can return maximum of 2,000 records.

4. DML Operations cannot be performed on the SOSL Query results.

Best Practices

1. Avoid using SOSL queries inside the FOR Loop. i.e. we have to write the SOSL query outside the FOR Loop.

2. Avoid using SOSL queries within the triggers which may cause performance issues.

Ways to invoke SOSL Queries

Salesforce provides the below 2 ways to invoke SOSL Queries.

1. By using "Query Editor".

2. By using "Apex Programming".

Use Case: Write an SOSL Query to Search for the content "test" in Account, Contact, Lead, Opportunity, Position and Candidate Objects.

```
FIND {test*} IN ALL FIELDS RETURNING

        Account(Id, Name, Rating, industry, annualrevenue, phone, fax Limit 5),

        Contact(Id, FirstName, LastName, Title, Phone, Fax, Email Limit 50),

        Lead(Id, FirstName, LastName, Title, Company, Status,Rating, Industry Limit 20),
        Opportunity(Id, Name, CloseDate, Amount, StageName Limit 100),

        Position__C(Id, Name, Location__c, Position_status__c,

            Maximum_budget__c, milestone_date__C Limit 500),

        Candidate__C(ID, Name, Location__c, Current_ctc__c, Notice_period__C,

                                Email_id__C, Contact_Number__C Limit 400)
```

Note: While Searching the Content, we can use the below Search Groups.

1. IN ALL FIELDS
2. IN TEXT FIELDS
3. IN EMAIL FIELDS
4. IN PHONE FIELDS

Note: To prevent the search inside a particular object, we have to disable the "Allow Search" checkbox in the object settings.

Apex provides 2 types of SOSL Queries.

1. **Static SOSL Queries**: In this approach, the SOSL Query should be always static. i.e., while preparing the Query, we have to specify all the objects information.

We cannot add the objects to the Static SOSL query at runtime.

Static SOSL Query should be always enclosed with Square Braces.

Syntax: [SOSL Query]

Static SOSL Queries will execute automatically by default which returns the results in the form of "List<List<SObject>>".

Syntax: List<List<SObject>> <refName> = [SOSL Query];

2. **Dynamic SOSL Query**: In this approach, we can prepare the SOSL Query, by adding the objects at runtime. i.e., we can include the objects in which text is to be searched at runtime.

Dynamic SOSL Query should be always enclosed with Single Quote. i.e., we have to store in a String variable.

Syntax: String <dynamicSOSL> = 'SOSL Query';

We have to invoke the dynamic SOSL query manually by using "Search.Query()" method, which returns the result in the form of "List<List<SObject>>".

Syntax: List<List<SObject>> <refName> = Search.Query('SOSL Query');

Use Case: Write an apex program, to search for the specified content in multiple Salesforce objects and represent the records on the debug log file.

Class Code

```
public class GlobalSearchUtility

{

   // Static SOSL Query

        Public static void SearchRecords()
```

```
{
     List<List<SObject>> lstRecords = [FIND 'test*' IN ALL FIELDS RETURNING
               Account(Id, Name, Rating, Industry, AnnualRevenue, Phone, Fax Limit 5),
               Lead(ID, FirstName, LastName, Title, Company, Status, Phone, Fax Limit 4),
               Opportunity(Id, Name, Amount, CloseDate, StageName, Probability),
               Case(Id, CaseNumber, Status, Priority, Origin, Reason, Subject),
               Position__c(Id, Name, Location__C, Position_status__c, milestone_date__c)];

   if(! lstRecords.isEmpty())
   {
      List<Account> lstAccounts = (List<Account>) lstRecords.Get(0);
      List<Lead> lstLeads = (List<Lead>) lstRecords.Get(1);
      List<Opportunity> lstOppty = (List<Opportunity>) lstRecords.Get(2);
      List<Case> lstCases = (List<Case>) lstRecords[3];
      List<Position__C> lstPositions = (List<Position__c>) lstRecords[4];

      System.debug('Number of Account Records.....: '+ lstAccounts.Size());
               for(Account acc : lstAccounts)
         {
            System.debug('Account Record is....: '+ acc);
         }

      System.debug('-------------------------------------------');
      System.debug('Number of Lead Records.......: '+ lstLeads.size());
               for(Lead ldRecord : lstLeads)
         {
            System.debug('Lead Record is....: '+ ldrecord);
         }

      System.debug('-------------------------------------------');
      System.debug('Number of Opportunity Records ......: '+ lstOppty.Size());
               for(Opportunity oppty : lstOppty)
         {
            System.debug('Opportunity Record is...: '+ oppty);
```

```
          }

        System.debug('------------------------------------------');
        System.debug('Number of Case Records .......: '+ lstCases.Size());
              for(Case csRecord : lstCases)
          {
             System.debug('Case Record is.....: '+ csRecord);
          }

        System.debug('-----------------------------------------');
        System.debug('Number of Position Records......: '+ lstPositions.size());
              for(Position__c pos : lstPositions)
          {
             System.debug('Position Record is....: '+ pos);
          }
      }
    }

    // Dynamic SOSL Query
    Public static void SearchDynamicRecords(String searchText)
    {
      if(searchText != Null && searchText != '')
      {
        String dynamicSOSLQuery = 'FIND '+'  \'  ' + searchText + '*'+ ' \' '+ ' IN ALL FIELDS
RETURNING ' +
          'Account(Id, Name, Rating, Industry, AnnualRevenue, Phone, Fax Limit 5),' +
        'Lead(ID, FirstName, LastName, Title, Company, Status, Phone, Fax Limit 5),'+
        'Opportunity(Id, Name, Amount, CloseDate, StageName, Probability),'+
        'Case(Id, CaseNumber, Status, Priority, Origin, Reason, Subject),' +
        'Position__c(Id, Name, Location__C, Position_status__c, milestone_date__c)';

        List<List<SObject>> lstRecords =     Search.query(dynamicSOSLQuery);

        if(! lstRecords.isEmpty())
```

```
{
    List<Account> lstAccounts =        (List<Account>) lstRecords.Get(0);
    List<Lead> lstLeads = (List<Lead>) lstRecords.Get(1);
    List<Opportunity> lstOppty = (List<Opportunity>) lstRecords.Get(2);
    List<Case> lstCases = (List<Case>) lstRecords[3];
    List<Position__C> lstPositions = (List<Position__c>) lstRecords[4];

    System.debug('Number of Account Records.....: '+ lstAccounts.Size());
        for(Account acc : lstAccounts)
        {
            System.debug('Account Record is....: '+ acc);
        }

    System.debug('------------------------------------------');
    System.debug('Number of Lead Records.......: '+ lstLeads.size());
        for(Lead ldRecord : lstLeads)
        {
            System.debug('Lead Record is....: '+ ldrecord);
        }

    System.debug('------------------------------------------');
    System.debug('Number of Opportunity Records ......: '+ lstOppty.Size());
        for(Opportunity oppty : lstOppty)
        {
            System.debug('Opportunity Record is...: '+ oppty);
        }

    System.debug('-------------------------------------------');
    System.debug('Number of Case Records .......: '+ lstCases.Size());
        for(Case csRecord : lstCases)
        {
            System.debug('Case Record is.....: '+ csRecord);
        }
```

```
                System.debug('-------------------------------------------');
                System.debug('Number of Position Records......: '+ lstPositions.size());
                    for(Position__c pos : lstPositions)
                    {
                        System.debug('Position Record is....: '+ pos);
                    }
            }
        }
    }
}
```

Execution

```
// Static SOSL
                    GlobalSearchUtility.SearchRecords();
// Dynamic SOSL
GlobalSearchUtility.SearchDynamicRecords('sam');
```