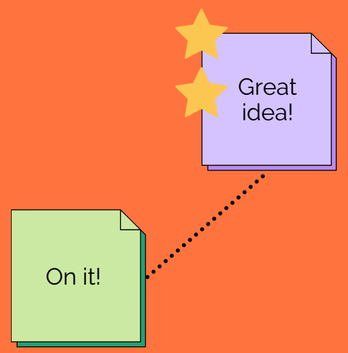
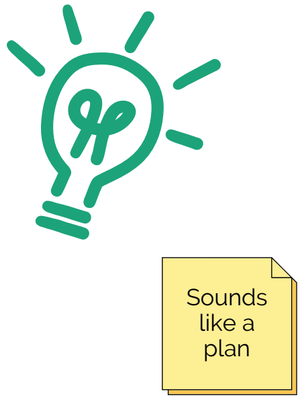
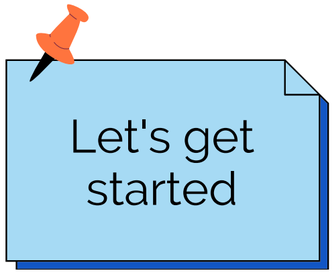
Salesforce Apex







Apex basic to Advanced

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Agenda

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Introduction

Apex is an object-oriented and strongly typed programming language developed by Salesforce for building Software as a Service (SaaS) and Customer Relationship Management (CRM). Apex helps developers to create third-party SaaS applications and add business logic to system events by providing back-end database support and client-server interfaces.

Apex helps developers to add business logic to the system events like button clicks, related record updates, and Visualforce pages. Apex has a similar syntax to Java.

Features of Apex Programming Language

- Apex is a case insensitive language.
- You can perform DML operations like INSERT, UPDATE, UPSERT, DELETE on sObject records using apex.
- You can query sObject records using SOQL(salesforce object query language) and SOSL(salesforce object search language) in apex.
- Allows you to create a unit test and execute them to verify the code coverage and efficiency of the code in apex.

Features of Apex Programming Language

- Apex executes in a multi-tenant environment, and Salesforce has defined some governor limits that prevent a user from controlling the shared resources. Any code that crosses the salesforce governor limit fails, an error shows up.
- Salesforce object can be used as a datatype in apex. For example

```
Account acc = new Account();
```

- here Account is a standard salesforce object.
- Apex automatically upgrades with every Salesforce release.

Apex Syntax

Variable Declaration:

```
contact con = new contact();
```

SOQL Query:

```
Account acc = [select id, name from Account Limit 1];
```

Loop Statement:

```
list<Account>listOfAccounts = [select id, name from account limit 100];
for(Account acc : listOfAccounts){}
```

Flow Control Statement:

```
list<Account>listOfAccounts = [select id, name from account limit 100];
if(listOfAccounts.size() >0){  }
```

DML statement:

Use Data Manipulation Language (DML) statements to insert, update, merge, delete, and restore data in Salesforce

- insert
- update
- upsert
- delete
- undelete
- merge

Data Type in Apex

Primitive:

Integer, Double, Long, Date, Date Time, String, ID, and Boolean are considered as primitive data types.All primitive data types are passed by value, not by reference.

Collections

- List
- Set
- Map

sObject:

This is a special data type in Salesforce. It is similar to a table in SQL and contains fields which are similar to columns in SQL.

Enums

Enum is an abstract data type that stores one value of a finite set of specified identifiers

Apex Access Specifier

Public:

This access specifier gives access to a class, method, variable to be used by an apex within a namespace.

Private

This access specifier gives access to a class, method, variable to be used locally or within the section of code, it is defined. All the technique, variables that do not have any access specifier defined have the default access specifier of private.

Protected

This access specifier gives access to a method, variable to be used by any inner classes within defining Apex class.

Global

This access specifier gives access to a class, method, variable to be used by an apex within a namespace as well as outside of the namespace. It is a best practice not to used global keyword until necessary.

Keywords in Apex

With sharing:

If a class is defined with this keyword, then all the sharing rules apply to the current user is enforced and if this keyword is absent, then code executes under system context.

```
public with sharing class MyApexClass{
// sharing rules enforced when code in this class execute
}
```

Without sharing:

If a class is defined with this keyword, then all the sharing rules apply to the current user is not enforced.

```
public without sharing class MyApexClass{
// sharing rules is not enforced when code in this class execute
}
```

Keywords in Apex

Static

A variable, Method is defined with the static keyword is initialized once and associated with the class. Static variables, methods can be called by class name directly without creating the instance of a class.

Final

A constant, Method is defined with the final keyword can't be overridden.

Return

Virtual

Abstract

Null

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Apex Governor Limits

Apex governor limits are the limits enforced by apex runtime engine to ensure that any runway apex code and processes don’t control the shared resources and don’t violate the processing for other users on the multitenant environment. These limits are verified against each apex transaction. Following are the governor limits defined by salesforce on each apex transaction:

Apex Governor Limits

Description	Limit
SOQL queries that can be done in a synchronous transaction	100
SOQL queries that can be done in an Asynchronous transaction	200
Records that can be retrieved by a SOQL query	50000
Records that can be retrieved by Database.getQueryLocator	10000
SOSL queries that can be done in an apex transaction	20
Records that can be retrieved by a SOSL query	2000
DML statements that can be done in an apex transaction	150
Records that can be processed as a result of a DML statement, Approval.process, or database.emptyRecycleBin	10000

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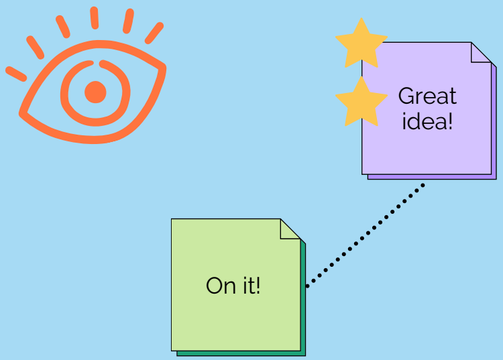
Salesforce



Apex

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