What is salesforce”:- 1) customer relationship management software

2) help business manage their sales , reports on sales and activities in centralize place

3) it also provide tools to enhance customer engagement

Org:- is organization abrivated form basically it is an instance of salesforce application

2) it contains business data , security that have implemented on data , one org is independent of another org

3) data + application that work on the data

Types: - production org:- it contains full data of business

Development org:- is for development purpose and contains dummy data to check that actual working is correct as espected before deploying

SAND BOX:- copy of production org as we cannot directly change the production environment

All the change must be done in sandbox as the changes in original org result in malfunctioning

Basically two types of sandbox one with data and one without

1)[without data] a) developer & developer pro:- contains data but very less amount

2) [ with data] b) partial copy sandbox & full copy sandbox :- these contains copy of your production data where you can test your built functionalities

Enviroment :-

Instance where you can develop and debug

Governer limit:-

As salesforce is multitent eviroment is such that multiple tenets are access the same server so to solve the problem of NO one tenant wont create a monolopy of resources and all tent gets equal resource

For that purpose govner limit are imposed

**Question 2**

How would you refactor this?

for (Account accountObject : [SELECT Id, Description FROM Account])

{

Integer countOfEvents = [SELECT COUNT() FROM EVENT WHERE WhatId =: accountObject.Id];

if (countOfEvents &amp;amp;amp;gt; 0)

{

accountObject.Description = String.valueOf(countOfEvents);

}

update accountObject;

}

[/code]

**Answer 2**

Map<Id, Account> accountsMap = new Map<Id, Account>([SELECT Id FROM Account]);

Set<Id> accountsWithEvents = new Set<Id>();

Map<String, String> eventsPerAccount = new Map<String, String>();

List<Account> accountList = new List<Account>();

for (Event eventObject : [SELECT Id, WhatId FROM Event WHERE WhatId IN : accountsMap.keySet()])

{

accountsWithEvents.add(eventObject.WhatId);

}

for (AggregateResult aggregate : [SELECT COUNT(Id) theId, WhatId theWhatId FROM Event WHERE WhatId IN :accountsWithEvents GROUP BY WhatId])

{

eventsPerAccount.put(String.valueOf(aggregate.get('theWhatId')), String.valueOf(aggregate.get('theId')));

}

for (Account accountObject : [SELECT Id, Description FROM Account WHERE Id IN : eventsPerAccount.keySet()])

{

if (accountObject.Description != eventsPerAccount.get(String.valueOf(accountObject.Id)))

{

accountObject.Description = eventsPerAccount.get(String.valueOf(accountObject.Id));

accountList.add(accountObject);

}

}

if (accountList.size() > 0)

{

update accountList;

}

Types: - per-transcation limit

| **Description** | | **Synchronous Limit** | **Asynchronous Limit** | |
| --- | --- | --- | --- | --- |
| Total number of SOQL queries issued1 | | 100 | 200 | |
| Total number of records retrieved by SOQL queries | | 50,000 | 50,000 | |
| Total number of records retrieved by Database.getQueryLocator | | 10,000 | 10,000 | |
| Total number of SOSL queries issued | | 20 | 20 | |
| Total number of records retrieved by a single SOSL query | | 2,000 | 2,000 | |
| Total number of DML statements issued2 | | 150 | 150 | |
| Total number of records processed as a result of DML statements, Approval.process, or database.emptyRecycleBin | | 10,000 | 10,000 | |
| Total stack depth for any Apex invocation that recursively fires triggers due to insert, update, or delete statements3 | | 16 | 16 | |
| Total number of callouts (HTTP requests or web services calls) in a transaction | | 100 | 100 | |
| Maximum cumulative timeout for all callouts (HTTP requests or Web services calls) in a transaction | | 120 seconds | 120 seconds | |
| Maximum number of methods with the future annotation allowed per Apex invocation | | 50 | 0 in batch and future contexts; 50 in queueable context | |
| Total number of sendEmail methods allowed | | 10 | 10 | |
| Total heap size4 | | 6 MB | 12 MB | |
| The maximum number of asynchronous Apex method executions (batch Apex, future methods, Queueable Apex, and scheduled Apex) per a 24-hour period1,6 | 250,000 or the number of user licenses in your org multiplied by 200, whichever is greater | | |
| Number of synchronous concurrent transactions for long-running transactions that last longer than 5 seconds for each org.2 | 10 | | |
| Maximum number of Apex classes scheduled concurrently | 100. In Developer Edition orgs, the limit is 5. | | |
| Maximum number of batch Apex jobs in the Apex flex queue that are in Holding status | 100 | | |
| Maximum number of characters for a class | 1 million | | |
| Maximum number of characters for a trigger | 1 million | | |

Note:- In a SOQL query with parent-child relationship subqueries, each parent-child relationship counts as an extra query.

To get limit write:- Limits.getLimitAggregateQueries()

To check how many asynchronous Apex executions are available :--- OrgLimits.getAll()

RECORD TYPES

* Segregation of record based on picklist field values
* E.g. through record type we can check which page layout you a user want if fresher can have fresher page layout which contains fields that fresher need to fill to create

Expereice will have experience fields that need to create in experience record

* Question :- sergregate picklist based on deparement

These are some special picklists which are not available for record types.

* Opportunity Stage
* Case Status
* Solution Status
* Lead Status

Because these are exclusively used for sales processes, support process, lead processes and solution processes.

**FORMULA FIELD:-**

* It is readonly field which gets calculated in runtime from the expression we provide if the expression edited all the values will get recalculated
* Limit 4000 bytes

## **What can we do if the requirement for formula field is very complex and it exceeds character limit?**

**Answer :**

We can either divide the logic into multiple formula field and get the desired output in one formula field using the result of those other formula fields, or we can write trigger if it is very complicated.

* Long text area , encryption and description cannot be used in formula field
* ISPICKVAL is used for single picklist value and INCLUDES is used for multi-select picklist values
* ISNULL() and ISBLANK() have the same functionality, but ISBLANK() can be used for both numbers and text, but ISNULL() can be used only for numbers.

## **What are the return types for formula fields?**

* Checkbox
* Currency
* Date
* Date/Time
* Number
* Percent
* Text

## **cross object formula fields**

* It create on child object by refrence the field from child object
* A Formula that references a field on another object is known as a **Spanning Relationship**.
* **The limit of spanning relationships per object is 15**.

Validation rule and formula field and rollup summary

* Validation rules are used to validate the data , it fires when create new recod and edit a record
* User enter a wrong data error message will be thrown either at field or in bottom
* WONT PROVIDE A WAY TO STOP DELETE RECORD executes only on insert and update.
* We cannot ignore or avoid validataion rule but can stop it all together we can either make a toggle button or set it to bypass the certain profile

 Yes, we can use ISNEW() function in the validation rule to run the validation rules only for new records.

*  When ISNEW() returns true the new record is getting created, and when ISNEW() returns false, then the record is updated. Based on this condition, we can run validation rules only for new records
* Use only on update :- AND (NOT(isNEW(),ISCHANGED(City)))
* **Is there is any way through which validation rule is bypassed while doing upload through data loader  but not when user is creating record from user interface?**  
  Yes. Create a checkbox field as API upload and make this field hidden in page layout. Create a validation rule and in evaluation criteria first check if checkbox is false and then check other validation criteria.  
  Whenever user upload record through data loader, specify value for this checkbox as true in .csv file and then upload it to salesforce. While upload, validation rule will fire and will find checkbox value as true so it will not check other criteria and system will allow to upload records.
* Admin want to avoid deletetion of child record using point click

ANS:- **9. Admin wants to avoid the deletion of child records in master detail relationship. Is it possible to achieve this using point and click functionality?**  
Yes. First create a roll up summary field on parent which calculates the total count of child records. Now write a validation rule on parent object which checks if previous value of total count is less than new value. If yes, then display error message.  
Suppose field name is total\_count\_\_c in parent object then validation rule criteria will be:  
Priorvalue(total\_count\_\_c) <total\_count\_\_c  
When we delete the child record then roll up summary field value will get reduced by 1. System will update the parent record roll up summary field which will fire the validation rule and avoid user from deleting child record.

* Can we bypass validation Rules?  
  Yes -using custom Permission Set we can bypass validation Rules
* -https://unhandledsunshine.com/2018/12/06/use-custom-permissions-to-bypass-validation-rules-and-pass-unit-tests/

# Write a validation rule to bypass it for particular profile.

* NOT($Profile.Name == 'CI Agent') -> if true then false -> error will not occur , if false then true -> error occur

**RELATIONSHIPS:-**

* It is a 2 way communication between object
* Eg. A person object can have multiple address so storing in single object can result in scalability issue

Storing it in different object (master detail)

Eg. If we store the product and product history in single object then if we delete the product which people have buy the product want be able to find (lookup)

Types of relationship :-

* 1. Lookup relationship:- loosely coupled relationship

e.g:- event – lead

event – account

product – product history

case - asset

* Ownership – child record are not owned by parent record , when parent delete child will not affect
* Lookup field on child can be left empty
* Owd:- do not automatically inherit parent record sharing e.g access to parent does not allow access to child record
  1. Master detail:-

Ownership : - master record own the ownership of parent record

* 25 rollup summary fields
* Sharing and security setting of parent own by child
* Standard object can be in detail
* Cascade delete
* Roll up summary
* Can we convert master to lookup yes no rollup summary either copy the data to other field or if not necessary then delete it the directly convert to lookup
* We can convert lookup to master detail first fill all the foreign key fields then we can convert
  1. Many to many (junction object)
* 2 master one detail e.g:- one client can have many dual citizenship and one citizenship can have multiple clients
* Client >--- client citizenship ---< citizenship
* Speaker >---- session speaker ---< session
* Junction object is child object contains both data
* If we delete the junction object and then undelete it the relationship will convert to lookup
* -primary relationship - whichever field you create first will become primary relationship and the object become primary master object
* - now in m-d realationship the owner field gets deriverd from master object so,in case of junction the owner ship will be derived from primary master object
* - also the lookin field gets derived from primary master object
* - in case of security setting it will consider the security setting of both object
* e.g:- if you have permission of read on both object then only you can see the data
* Note- if master record delete then all the child record will also gets deleted
* what happen if we delete the juction object
* -yes we can delete (child) , when we undelete the m-d relation is converted to lookup
  1. Self relationship :-
* One object lookup relationship with itself

Consider a custom object called "Employee" with the following fields:

1. **Employee Name (Text)**
2. **Manager (Lookup to Employee object)**

In this example:

* The "Manager" field is a lookup relationship to the same "Employee" object.
* It allows each employee to be associated with another employee who is their manager.

For instance:

* **Employee A**
  + Employee Name: John Doe
  + Manager: (empty or null because John Doe is the top-level manager)
* **Employee B**
  + Employee Name: Jane Smith
  + Manager: John Doe (Jane Smith reports to John Doe)
* **Employee C**
  + Employee Name: Bob Johnson
  + Manager: Jane Smith (Bob Johnson reports to Jane Smith)

This creates a hierarchy or chain of relationships within the same "Employee" object, representing the reporting structure within an organization.

* 1. Hierarchical relationship:- created on user object use to determine who is user manager
* Manager is field in user
  1. External lookup :- it is used to create relationship with object that are outside the salesforce org

ROLLUP SUMMARY:-

* Read only field
* It is created in parent object in mdr , summarize the child data and show it in parent object
* Max,min,count,avg
* Gets calcutated when an child data is created or the reference field get edited
* 25 rollup summary
* We can specify the filter criteria which record to use for summary
* Rollup summary once created canot be delete we have to remove the master details relationship – to lookup

DUPLICATE & MATCHING RULE:-

Matching rule:- creteria by which it identify for duplicate record

Exact and fuzzy (thoda s change hai depend on percentage)

Duplicate rule:- prevent deuplication of record CREATE/UPDATE yeah block kr sakte yeah warning de sakte in case of duplicate .

* Report can be created on duplicate record as well

= record-level security – enforced sharing rule – un records ke sath compare kare jitne user ke pass access hai

--- bypass sharing rule – sab k sath compare karega sare records k sath but result list m vahe ayenge jinka user k pass access hai

= action :- allow or block and create report on duplicate record

= optional condition – konse record ko duplicate check k liye krna hai

FEED TRACKING && FEED HISTORY TRACKING

Feed tracking :- object must have activities as click (old value , new value, who changed)

--- all the 20 fields can be used for feed tracking

--- result will shown in chatter component

---- upto 45 days

Field history tracking :-

On object check field history tracking > in object select field history tracking > history object

* 18 moths + also related object field

Audit trails :- we can track what changes users and system admin have done in org can download the history of 60 days.

APPROVAL PROCESS:-

SECURITY MODEL:-

Profile vs role

Profile vs permission set

What is security mode

Auth vs authentication

Persiions set and permission set group

Owd

What is sharing rule

Sharing settings

Page layout ----- > page layout has many button and

Difference between workflow , process builder , flow

WORKFLOW:-

* + 1. Actions:- immediate and time dependent
    2. Conditions:- a) created ,created & edited , created & edited to subsequently meet creteria
    3. Recursive workflow :-does not work on created and edited to subsiqiently meet creteria
    4. Immediate :- 1) outbond , email alert , task , field update
    5. Time trigger doesnot cout minute and seconds
* Workflow 2.0 in short contains all the function in workflow(except outbond message) + provide extra features (11 features)
* Workflow is one-direction / where process builder is if/else condition
* Workflow is single decision

determine which order workflow rules run in. So there’s always a risk of one rule overwriting what another did. In Process Builder, we can determine the exact evaluation order of process’ criteria.

In Workflow, we can reference fields on the record’s parent. Process Builder, on the other hand, lets access the fields on any related record, no matter how far away that record is. You can reference fields on a parent record, grandparent record, or great-great-great-grandparent record twice removed.

* Note:- in workflow one rule cannot call another rule where as in process builder one process can call other process

* Triggering object should be rectangle

* What is a process?

= series of actions that get executed when the criteria get full field or event is trigger

* What is recursion ? Exact how it work?

=

* Explore the process builder error handlying

**How does a time-based workflow differ from a scheduled action in Process Builder?**

A time-based workflow will evaluate the record every time the specified time passes, whereas a scheduled action in Process Builder will only evaluate the record once, at the specified time.

* The process starts when

= on record change

= platform event message is received

= invoked by other process

* Questions

1. Email & notification is not send on already exist process builder of account when created hit cretia of new created and contact process builder is not working

Process builder:-

|  |  |  |  |
| --- | --- | --- | --- |
|  | workflow | Process builder | flow |
| definition | We can definie rule to perform perform action when provided cretria is met (automation tool) | Define sequence of action and evaluation criteria for record |  |
| Trigger events | Create update | record Create update  Invoker by another process    platform event message is received. | Create update  delete |
| Actions | 4 | 11 | 50+ |
| condtioon | if | ifelseif | ifelseif |
| dml | Create update record | Create update record | Create update delete record |
| relationship | Parent to child (how to actually perform this) | Parent to child  Child to parent | Parent to child  Child to parent |
|  |  |  | We can debug |
|  |  | Version control | Version control |
|  | Integration (outbond message) | NO | yes |
|  |  |  |  |

How to invoke a apex class using automation:-

Ans:- define a class must be public / global

* A method only single method with @invocable , static and should be public/global
* Most one input parameter with list type data type
* Return type should be list type