**Q: What is ‘Append’ and ‘Append To’ privilege in MSCRM? Give one example of it?**  
Ans: ‘Append’ and ‘Append To’ priviledges works together. ‘Append To’ priviledge will allow other entities to get attached with the entity. ‘Append’ priviledge will allow the entity to attach the records to the entity with ‘Append To’ privildege.

Let us understand this with simple example:  
Let us say that you want to attach a note to a case then note entity should have ‘Append’ access right and case entity should have ‘Append To’ access right.

Let us take one more example to understand this. Suppose you have two custom entities called ‘TestCustomEntity1’ and ‘TestCustomEntity2’. You want to attach the ‘TestCustomeEntity2’ records to ‘TestCustomEntity1’records. For this you need to have ‘Append’ access right on ‘TestCustomEntity1’ entity and ‘Append To’ access right on ‘TestCustomEntity2’.  
Now guess will I be able to attach the records? Answer is “NO” because we need to create a 1:N relationship between ‘TestCustomEntity1’ and ‘TestCustomEntity2’.  
Now the user who has above mentioned access right in his security role will only be able to add ‘TestCustomEntity2’ records to ‘TestCustomEntity1’.

**Q. How to create a Custom Entity record using SDK?**  
Ans: Using Dynamic Entity.

**Q. How to join two table using Query Expression?**  
Ans: Using Linked entity. You should always try to minimize the number of SWS calls that we make in the database. Often during code review it is explored that the number of Microsoft CRM web-service could have been reduced by making use of the Linked-entity concept. So we should always look for the opportunity to minimize the effort.

**Q. Can we modify the name of Root Business Unit?**  
Ans: No; We will have to re-install MSCRM.

**Q. Suppose if I have 20 user license and I have created 20users. What will happen if I create 21st User?**  
Ans: The 21st User will get created in MSCRM but that user will be in disabled state.

**Q. What are the maximum number of tabs allowed on a Microsoft Dynamics CRM 4.0 form?**  
Ans: 8

**Q. How to enable/disable the form assistant? How to make sure the form assitant is expanded/cllapsed on a form?**  
Ans: Navigate to Customization >> Open the Entity >> Open Forms and Views >> Open Form >> Select Form Properties >> Open Display Tab >> Check/Uncheck the “Enable the Form Assistant” and “Expanded by Default”.

**Q: What is CRM Service of MSCRM?**  
Ans: CRM Service is the main web service and it exposes Six methods such that you can write your code against CRM entities. To perform operation other than the six operations (six methods provided by mscrm) we will have to use the Execute method.

**Q: What is Metadata service of MSCRM.**  
Ans: Dictionary meaning of the word METADATA is data about data and similarly the metadata holds the information about MSCRM means the information about the entity and attribute e.g. Display name, platform name, size of the attribute, datatype of attribute etc. If we want to access any information about any entity (Dynamic or system) we will have to make use of the Metadata service. In the database we can find the metadata table and name of these table begins with keyword Metadata.

**Q: What is discovery Service?**  
Ans: The Discovery service is a global service that helps the caller to detemine the correct organization and URL. Microsoft CRM server may include several servers. Each server might be dedicated to multiple organization. Each of these servers will have dedicated web-service URL for faster operations. Internally the Microsoft CRM server allocation may change so the discovery service directs the request to its corresponding web-server for further processing.  
In short the Discovery service responsibility is to find the ‘CRM Service’ and ‘Metadata Service’ urls.

The discovery service returns the list of organization URLs that the current-requester (current user) belongs to. During the Outlook client configuration discovery service shows he list of organization the current-user belongs to.

This web-service is used to create authentication ticket in case of Windows live authentication.

**Q. Suppose I want to migrate an Microsoft CRM implementation from one environment to other environment. Let us assume that there a published workflow for account entity. Now in normal usage there will be few accounts-records for which the workflow will be waiting/Waiting for Resource/Failed/Succeded state. So what should be our strategy for the migration. What will happen to the records which are in waiting state and what will happen to the records which are in-progress?**

**Q. Suppose there is a plug-in registered for account entity. When a user submits a request (e.g. account creation etc.) to the web-server then what will happen in the server?**  
Ans – The plug-in will get loaded into the memory and will perform the operation it is needed to do.

**Q. Now what will happen if 100 users will submit the request to the web-server? The plug-in code will get loaded into the memory for 100 times?**  
Ans – Answer is NO. Noticable point over here is that the Microsoft CRM is a mananged application and runs under .Net framework. So whenever the first request arrives at the web-server the plug-in code is loaded into the memory and will perform its operation and susequently the same plug-in code will serve the process for other user as well. So this way it saves the amount of time required to load the plug-in into the memory. If the plug-in code is not being used for long then the Garbage collector will identify it and will sweep the plug-in out from the memory.

**Q. How to add/remove columns in an entity lookup window.**  
Ans – Go to Settings >> Customization >> Select the entity >> Click ‘Forms and Views in the Left Nav Pane” >> Double click the ‘Entity Lookup View’ >> Dialog box appears that contains the Add/Remove and Sorting options for a lookup view.

**Q. How to Debug the java script that we write for some validation on entity pages.**  
Ans – Following are the steps that are needed to be followed:  
1. Enable the Debugging in the Internet Explorer – Goto Tools >> Internet Options (wizard will appear >> Click the ‘Advanced Tab’ >> Under Browsing Section uncheck the ‘Disable script debutting’ checkbox >> Click OK.  
2. Edit the java script code of the Entity Page that you want to debug.  
3. Put the statement ‘debugger;’ above the line where you want do the debugging. e.g. suppose my java-script show ‘Hello World’ message and i want to debug this then following is the way I am going to add script:  
debugger;  
alert(‘Hello World’)  
4. Save and Publish corresponding customization.  
5. Perform the operation that would trigger the java script written by you  
6. Debugger dialog box will appear and select appropriate debugger (Visual Studio new or existing instance)  
And you may start debugging from the ‘Debugger’ statement of your javasript.

Q: What are the new type of workflows introduced in MS CRM2013.  
**Answer:** a.Action.  b.Business Process workflow.  
  
Q. What is the Business Rules in Ms CRM?  
  
Q. Business Rules,JavaScript Method which one trigger the first?  
**Answer:** javascript method is clientside program and syncronous and business rules are asynchronous process so javascrit execute first.  
  
Q. What is the realtime workflow ?  
  
Q. Realtime workflow trigger first or plugin will trigger first?  
 **Answer: B**y default plugin will trigger first.  
  
Q. How should is change execution order between synchronous workflow and Plugin?  
 **Answer**: we have tool synchronous event order in ToolBox by using we can able to update Rank of workflow.

**1.What is the difference between Role Based and Object Based Security Model in MSCRM?**  
      Code based security is entirely coded in the application itself. Role based security uses one of the authentication/authorization mechanisms of the application server. The fundamental concept in role-based security is that of privilege, defined at design time, on a system-wide basis. Each user has a set of privileges (there are well over a hundred privileges) that are enabled for that user. However, Policies and Roles grant privileges and simplify the process.  
       The other form of security applies to individual instances of objects. There is a fundamental difference between an access right and a privilege: an access right is a right granted to a user on an object), but a privilege is a right granted to a user on a class of objects. Access rights apply only after privileges have taken effect. In other words, if a user does not have the privilege to read accounts, the user will not be able to read any account, whether or not it has been shared.  
  
**2.Difference between Find and Advanced Find? Which one is faster and why?**  
        Find perform a search on an attribute for which it is defined. Advanced Find perform search on the conditions and the attributes for which user customizes or runs it. Normal Find in faster as it looks for one attributes and matches with that and returns the result whereas Advanced Find searches for all the attributes and conditions while parsing through the records.  
         Find is applicable on only active records and it finds only on 2 or 3 column which we have defined in the find view and even it returns any those column which is there in the view but advanced find is applicable to all the records and it finds all the columns and even it returns all the column and filter criteria can be on any column and most important - find filters on just one condition but advanced find filters on multiple condition at one time.. Find is faster than Advanced Find.  
  
**3.Difference between CRM Discovery Service and CRM Metadata service?**  
         CRM service - when we need ORG related information like ORG name, Properties, CRM service path for this ORG -- then we use CRM discovery service. This is only to get the ORG related information Metadata service - we use this when we need to interact with the CRM records – create, update or delete anything-- it is very specific to the CRM records. When we need to interact with the CRM entity and attribute - like create an entity (not record) or attribute -- add a value to pick list-- retrieve the pick list value retrieve the entity properties-- attribute property and all we need Meta data service.  
  
**4.Difference between Plug-in and Workflows?**  
         Requirement Plug-in Workflow Needs a synchronous action to happen before or after an event occurs. The same piece of logic will be executed for different events and possibly on different entities. The logic needs to be executed while offline. Needs elevation of privileges (impersonation) Needs to execute on events other than assign, create, update, set state The process/logic may take a long time to complete or will be a persistent process (multiple long running steps). Need an asynchronous action. End users will need to modify the process logic Child sub processes will be triggered.  
  
**5.Whenever you install MSCRM what all databases get created?**  
     MSCRM\_Config and MSCRM\_orgname.  
  
**6.Whenever you install MSCRM what all user groups get created in Active Directory?**  
      User Group All Microsoft CRM. This group is updated automatically as users are added and removed from Microsoft CRM. ReportingGroupA group contains all users within Microsoft CRM. This group is updated as users are added to Microsoft CRM. Users in this group have read-only access to the filtered views in the Microsoft CRM database. PrivUserGroupPrivileged Microsoft CRM user group for special administrative functions.  SQLAccessGroupA group that contains Microsoft CRM ASP.NET account and other service accounts. Members in this group have full access to the Microsoft CRM database and this group is used by the Microsoft CRM platform layer. End users should never be added to this group.  
  
**7.What is 'Append' and 'Append To' privilege in MSCRM? Give one example of it?**  
       'Append' and 'Append To' priviledges works together. 'Append To' privilege will allow other entities to get attached with the entity. 'Append' privilege will allow the entity to attach the records to the entity with 'Append To' privilege. Let us understand this with simple example: Let us say that you want to attach a note to a case then note entity should have 'Append' access right and case entity should have 'Append To' access right.Let us take one more example to understand this. Suppose you have two custom entities called 'TestCustomEntity1' and 'TestCustomEntity2'. You want to attach the 'TestCustomeEntity2' records to 'TestCustomEntity1'records. For this you need to have 'Append' access right on 'TestCustomEntity1' entity and 'Append To' access right on 'TestCustomEntity2'.Now guess will I be able to attach the records? Answer is " NO" because we need to create a 1:N relationship between 'TestCustomEntity1' and 'TestCustomEntity2'. Now the user who has above mentioned access right in his security role will only be able to add 'TestCustomEntity2' records to 'TestCustomEntity1'.  
  
**8.How to create a Custom Entity record using SDK?**  
Using Dynamic Entity in CRM 4.0 and Entity in 2011.  
  
**9.How to join two table using Query Expression?**  
         Using Linked entity. You should always try to minimize the number of SWS calls that we make in the database. Often during code review it is explored that the number of Microsoft CRM web-service could have been reduced by making use of the Linked-entity concept. So we should always look for the opportunity to minimize the effort.  
  
**10.Can we modify the name of Root Business Unit?**  
      No, we will have to re-install MSCRM.  
  
**11.Suppose if I have 20 user license and I have created 20users. What will happen if I create 21st User?**  
      The 21st User will get created in MSCRM but that user will be in disabled state.  
  
**12.How to enable/disable the form assistant? How to make sure the form assistant is expanded/collapsed on a form?**  
      Navigate to Customization >> Open the Entity >> Open Forms and Views >> Open Form >> Select Form Properties >> Open Display Tab >> Check/Uncheck the “Enable the Form Assistant" and “Expanded by Default".  
  
**13.What was your role in the MSCRM implementation project that you have worked on?**  
        You should be honest while giving answer to this question and should give a brief overview of the project and your role. This is very important question because the answers of this question will trigger so many questions. You should highlight the key skills you have; this way you will divert the attention of the interviewer to your key skills and try not to expose the area in which you are less confident.  
  
**14.What was the most challenging task you have faced till now?**  
          Here you should give answer that exhibits your positive attitude. E.g. for a technical consultant it may be something like ... “I was new to the support and during this experience i faced challenging issue related to plug-in that improved my debugging skills. Email-to-case plug-in was really difficult as we had to take care of so many conditions. I have learnt one thing during my previous assignment and that is 'Never give-up'".  
  
**15.How is CRM changing and what does the business owner need to be aware of?**  
       At the heart of CRM is the benefit of having the customer record at the center of the data universe rather than multiple galaxies of transactions held in separate, transaction-specific apps. So the innovation lies in new and improved visibility for putting information to use in intelligent decision making. Companies that used to serve 100 are serving 10,000, and with this kind of scaling, better top-level tools and custom dashboards are where I see CRM continuing to morph and advance.  
  
**16.Who are the newcomers to the CRM landscape?**  
It is such a hot area right now, there are literally hundreds. But two I have been following are Zoho and HighRise. Both are niche vendors that have garnered great contact lists with their other products and created relatively simple implementations for their clients and others. They both illustrate the fact that CRM is no longer esoteric — it is going mainstream, which is a great thing for business, particularly customer service and data security.  
  
**Q: What exactly should I be expecting CRM to do for me?**  
This is an important question, as there are many misconceptions about software and CRM in particular. Besides some fundamentals, like data security and access and ease of use, CRM will primarily help you do what you do anyway, but move it to the next level. If your main focus is customer service, CRM will help you monitor, deliver, and measure your effectiveness. If your goal is a flat organization where the right hand knows immediately what the left hand is doing, CRM will help you be informed about the customer’s world and not just what relates to your department or team.  
  
**Q: What are your expectations for CRM in the next five years?**  
First, I expect CRM to become much more commonplace. Players like Zoho and 37signals (Highrise) are knocking down barriers to entry. I also expect to see some consolidation. I think the bigger players, like Sales Force, Microsoft, and SAP, will buy up some of their smaller rivals to build into their suites and migrate their user bases. As long as the acquiring provider keeps the connections intact during the migration and meets a similar price point, it will be a win-win. I also think we’ll be seeing more mobile-friendly applications, like Sales-force’s Visual-force and NetSuite’s iPhone, to maximize data access and timeliness.  
  
**Q: What are the most common mistakes you see companies make with CRM?**  
Many organizations use Outlook BCM or Excel for managing their contacts, which offer no planning or setup process — just create a column or type in a field and get started. This causes problems when information is related and the flexible aspects of the previous solution are overlooked. There are real benefits that won’t happen without understanding the new vernacular; the specific way the new solution describes the data. For example, an “account” in Sales-force may not be the same as an “account” in High-rise. In fact, it might have another name altogether, such as “company.” Understanding how the particular vendor uses “leads” or “opportunities” will help to avoid a great deal of frustration.  
  
**Q: What advantages might CRM have for specific verticals?**  
The answer to this question is not if but how much. Since CRM helps you do what you do better, if you are in a professional services company with long sales cycles, project terms, and frequent interactions and touch points, CRM will be exponentially more valuable to you. So service businesses, like lawyers, consultants, and accountants, are ripe for CRM but often have a technological aversion and a strong status quo to maintain.  
  
**Q: Does CRM fall more to sales or marketing in most organizations?**  
In my experience, marketing is somewhat of a new concept in CRM. Sales are definitely involved, but most often it is operations leading the charge.  
 **Q: How many Web Services are in MSCRM?**  
1.    Deployment Web Service  
Using this service we can  
·         Create or import organizations  
·         Enable and Disable organizations  
·         Add deployment administrators  
·         Configure IFD and Claims-based authentication  
  
2. Discovery Web service  
Using this service we can  
·         Identify the organization information available in a deployment  
  
3. IOrganization Service  
·         In CRM 4.0 we had the CrmService & CrmMetadataService to access data & metadata.  
·         In CRM 2011, These are combined in single IOrganization service endpoint that includes both data and metadata  
  
**Q: What was the size of the implementation?**  
The number of user-licenses.  
  
**Q: Suppose I want to migrate Microsoft CRM implementation from one environment to other environment. Let us assume that there a published workflow for account entity. Now in normal usage there will be few accounts-records for which the workflow will be waiting/Waiting for Resource/Failed/Succeeded state. So what should be our strategy for the migration? What will happen to the records which are in waiting state and what will happen to the records which are in-progress?**  
  
**Q: Suppose there is a plug-in registered for account entity. When a user submits a request (e.g. account creation etc.) to the web-server then what will happen in the server?**  
The plug-in will get loaded into the memory and will perform the operation it is needed to do.  
  
**Q: Now what will happen if 100 users will submit the request to the web-server? The plug-in code will get loaded into the memory for 100 times?**  
Answer is NO. Noticeable point over here is that the Microsoft CRM is a managed application and runs under .Net framework. So whenever the first request arrives at the web-server the plug-in code is loaded into the memory and will perform its operation and subsequently the same plug-in code will serve the process for other user as well. So this way it saves the amount of time required to load the plug-in into the memory. If the plug-in code is not being used for long then the Garbage collector will identify it and will sweep the plug-in out from the memory.  
  
**Q: How to add/remove columns in an entity lookup window?**  
Go to Settings >> Customization >> Select the entity >> Click ‘Forms and Views in the Left Nav Pane” >> Double click the ‘Entity Lookup View’ >> Dialog box appears that contains the Add/Remove and Sorting options for a lookup view.  
  
**Q: How to debug the java script that we write for some validation on entity pages?**  
Following are the steps that are needed to be followed:  
·          Enable the Debugging in the Internet Explorer – Go to Tools >> Internet Options (wizard will appear >> Click the ‘Advanced Tab’ >> Under Browsing Section uncheck the ‘Disable script debugging’ checkbox >> Click OK.  
·         Edit the java script code of the Entity Page that you want to debug.  
·         Put the statement ‘debugger;’ above the line where you want to do the debugging.  
  
e.g. suppose my java-script show ‘Hello World’ message and i want to debug this then following is the way I am going to add script:  
debugger;  
alert(‘Hello World’)  
·         Save and Publish corresponding customization.  
·         Perform the operation that would trigger the java script written by you  
·         Debugger dialog box will appear and select appropriate debugger (Visual Studio new or existing instance)  
  
**Q: What are basic security permissions at domain level?**  
 (priv reporting group, privUser group, SQL Reporting group… total 5 groups availble google it.)  
  
**Q: For plugin deployment, Difference between GAC, Database, Disk deployments?**  
  
                  GAC Deployment  
1. Does not support CRM 2011 online deployments  
2. You can refer external DLL assemblies used in Plugin only if they are registered in GAC  
  
Database Deployment  
1. Supports CRM online 2011 deployment  
2. You can refer external DLL assemblies used in Plugin only if they are registered in GAC  
  
Disk deployments  
1. Does not support CRM 2011 online deployments  
2. You can refer external DLL assemblies from the disk and from GAC  
  
 **Calling Dynamic Entities (knowledge on Moniker, Input Parameters, Output Parameters, and Meta Services)?**  
  
 **Difference between GUID and Key, Lookup and String?**  
  
 **Knowledge on Java Script and SOAP web services, most important how to call XmlHttpRequest?**  
  
**Q: How many numbers of tabs available in MS CRM Entity Form?**  
Officially max 8 tabs, unofficially we can do plenty (It’s not recommended by Microsoft CRM)  
  
**Q:  When do we register a plugin in child pipeline? Give examples?**  
Quote can be created in 2 ways, through the home screen OR the opportunity screen. If you create it from the latter, it will run on the child pipeline and you will find that your plugin will not work.  
  
 Q: **What is early binding and late binding. How is it used in CRM?**  
Early Binding:  
Compiler bind the objects to methods at the compile time. This is called early binding or static binding. Function overloading is example for early binding.  
  
Late Binding:  
Compiler bind the objects to methods at the runtime. This is called late binding or dynamic binding. Function overriding is example for late binding.  
  
 Q: **What is PrinciplalObjectAccess table why is it used?**  
The POA table is used to provide access to specific records for CRM users, and each record in the POA table represents one CRM object that is    related to one CRM user.  Records created in the POA table come from one of four ways:  
·         Share reassigned records with original owner:  CRM System Settings  
o    If this is set to Yes, then records would be added to the POA table whenever an assign takes place.  These records will have a value in the AccessRightsMask colum of the POA table.  
·         Direct sharing:  Actions – Sharing  
o    When users explicitly share a record to another user, a record would be created in the POA table.  These records will have a value in the AccessRightsMask colum of the POA table.  
·         Reparent Setting:  Relationship Behavior  
o    Each entity has relationships with other entities (ex. Account to Case).  By default, the Reparent option is set to Cascade All.  With this setting, sub records would be shared to the owner of the parent record.  For example:  Let’s say that User1 owns Account1.  User2 has access to Account1 and creates a case underneath Account1.  With the out of the box Reparent options, a record would be created in the POA table that would give User1 access to the newly created case.  These records will have a value in the InheritedAccessRightsMask colum of the POA table.  
·         Indirect Sharing: When sharing occurs through a direct share, assignment, or parenting, if the relationship is set up to cascade the share to child records, additional records will be created in the POA table in order to give proper permissions to the new user for the relevant child records.  These records will have a value in the InheritedAccessRightsMask colum of the POA table.  
  
 Q: **What is the use of stringmap table?**  
stringmap table used to store picklist value in ms crm.  
  
**How do you set a recurring activity in CRM?**  
  
 Q: **When can infinite loop occur in a plugin? How do you avoid infinite loops in plugin code?**  
Using InDepth of the context we can get the loop number.  
  
 **How do you avoid sql deadlock?**  
  
Q:  **How many types of relationships are available in crm?**  
  
3 types  
1: N  
N: 1  
N: N  
  
**Q: What is the difference when the ownership is user vs. organization for a custom entity?**  
Organization-owned entities typically contain data involving something that belongs to or that can be viewed by the whole organization. Organization-owned entities cannot be assigned or shared. For example, products are owned by the organization.  
User-owned entities are associated with a user. User-owned entities typically contain data that relates to customers, such as accounts or contacts. Security can be defined according the business unit for the user.  
  
Q:  **What are filtered views?**  
SQL database views, called "filtered views," are provided with the Microsoft CRM database to enable access to business data according to the user's Microsoft CRM security role. When a user runs a report that obtains data from filtered views, the user's Microsoft CRM security role determines the data to be included in the report. Data in filtered views is restricted at three levels: the organization, the business unit, and the owner. Filtered views exist for all Microsoft CRM business objects (entities).  
  
Your reports should not read data directly from the Microsoft CRM database tables. Instead, use the filtered views. The following sample SQL code returns all columns from the filtered view for an Account entity:  
SELECT \* FROM dbo.FilteredAccount  
  
**Q: If you delete a record from UI, what happens in database? Can you bring the record back?OR, what is deletion service? Can you change its schedule?**  
In Microsoft Dynamics CRM, deleting an entity by using the Web application or through SDK Web service calls usually results in a "soft delete" where the entity is not immediately deleted from the database. Instead, the entity is marked for deletion later. The platform marks the entity for deletion by setting the entity's DeletionStateCode attribute to 2. Entities with a DeletionStateCode attribute set to 2 are filtered out from all data views in the Web application and are not accessible using the SDK.  
These marked entities are physically deleted from the database by the Deletion Service. The Deletion Service is an asynchronous operation that is based on a table named ScaleGroupOrganizationMaintenanceJobs in the MSCRM\_CONFIG database of Microsoft Dynamics CRM. By default, the frequency of the Deletion Service job execution is set to once a day. You can use the Scale Group Job Editor tool to change the execution frequency of the Deletion Service. You can find the tool on the Web at http://code.msdn.microsoft.com/ScaleGroupJobEditor.  
  
 **How is LINQ used in CRM 2011?**  
  
**How would you automatically create cases from?**  
  
**Q: Can you call a plugin using JavaScript?**  
You can accomplish this by creating a custom entity you want to use as a trigger.  You attach your plugin to that entity either at the create message or the update message (requires you to have one record created that you update).  
Now, in Jscript, when you want to call the entity all you have to do is call the update or create for that custom entity (depending on which message you attached your plugin to).  This way you can fire your plugin from anywhere you can access jscript.  
  
 Q: **In what circumstances are dialogs useful?**  
Dialogs are the synchronous/interactive processes in Microsoft Dynamics CRM 2011 and Microsoft Dynamics CRM Online that collect and process information by using step-by-step scripts to direct users through a process. For example, you can create dialogs to act as a guide for your service representatives for case resolution and case escalation. Similarly, you can create dialogs for standardizing sales processes such as opportunity qualification and lead scoring.  
Every time you run a dialog in Microsoft Dynamics CRM, a ProcessSession (dialog session) record is created. The dialog session stores the session log about the dialog process that was run.  
  
**What limitations does the sandbox have on plugins in the cloud?**  
  
**How do you configure SharePoint to work with CRM 2011?**  
  
**Q: When would you use a pre validation plugin and when would you use a post validation plugin?**  
Pre-validation:- Stage in the pipeline for plug-ins that are to execute before the main system operation. Plug-ins registered in this stage may execute outside the database transaction.  
  
Pre-operation:- Stage in the pipeline for plug-ins that are to execute before the main system operation. Plug-ins registered in this stage are executed within the database transaction.  
  
Post-operation:- Stage in the pipeline for plug-ins which are to execute after the main operation. Plug-ins registered in this stage are executed within the database transaction.  
  
Post-operation:- Stage in the pipeline for plug-ins which are to execute after the main operation. Plug-ins registered in this stage may execute outside the database transaction. This stage only supports Microsoft Dynamics CRM 4.0 based plug-ins.  
  
**Q: Why use images with plugins?**  
Answer: Images are a way to pass the image of the record that is currently being worked upon prior or after the action has been performed. In general it could be said, it is the image of the record as is available in the SQL backend.  
  
Two types of Images are supported, Pre-Image and Post Image.  
  
In case of Pre-image, you get the image of the record as is stored in the SQL database before the CRM Platform action has been performed.  
Post Image, returns the image of the record after the CRM Platform action has been performed.  
  
**How would you Auto number functionality to CRM?**  
  
 Q: **Explain how solutions work, managed and unmanaged?**  
Unmanaged Solutions  
All solutions start out as Unmanaged.  When it is in the unmanaged state, you can add, remove, update, test any of the components of the solution.  You can delete components of your unmanaged solutions, while leaving it available for use in the rest of the system.   Some on the MS CRM dev team have likened this to your 'source' code of your system.  The great thing about an Unmanaged Solution is that during development, you can create restrictions (like 'not customizable') on the components as they evolve.  
Managed Solutions  
When your unmanaged solution is ready for the show, you simply export it to 'Managed'.   You could think of this as 'compiling' you code.   You set the restrictions (i.e. prevent customizations on certain components) and the end user lives by those rules.  But remember, they can still customize the components of the solution that are unrestricted.  You cannot add or remove components of a solution, even if the component is unmanaged.  
Once you have packaged the Managed Solution, it can be installed into another organization.  They can also be deployed across multiple deployment types (Online, Partner Hosted, On-Premise) and all CRM Clients (web, Outlook, Mobile Express, and Offline via Outlook Client).  
  
Q:  **How do you debug a plugin?**  
  by enabling plugin profiler.  
  
**Q: What does the CRM asynchronous service do?**  
The asynchronous service executes long-running operations independent of the main Microsoft Dynamics CRM system process. This results in improved overall system performance and improved scalability.  
The asynchronous service features a managed queue for the execution of asynchronous registered plug-ins, workflows, and operations such as bulk mail, bulk import, and campaign activity propagation. These operations are registered with the asynchronous service and executed later when the service processes its queue. All workflows are executed by the asynchronous service.  
  
**Q: What is an Email-Router?**  
 Ans: Microsoft Dynamics CRM E-mail Router is a software component that creates an interface between a Microsoft Dynamics CRM deployment and the organization's messaging system. The E-mail Router routes qualified email messages to the Microsoft Dynamics CRM system as email activities and fully integrates with different messaging systems, such as Microsoft Exchange Server, Microsoft Exchange Online, POP3, and SMTP. The E-mail Router includes the functionality for sending email through any desired SMTP provider and for receiving email from Microsoft Exchange Server or from a POP3 server. Additionally, the Forward Mailbox feature remains available.

In Dynamics CRM 2013, when you create a new entity you can define the entities**"Ownership”** by choosing **“Ownership”** option.  
  
So what does it mean? Entities, can be owned by  
  
**1.Organization**  
**2.User or a Team**  
 **Organization owned entity**

* Records of “Organization owned entity” can be viewed by the whole organization
* Records cannot be shared or Assigned
* The security roles for organization-owned entities have two access levels: None and Organization

i.e., You cannot define “Access levels” like (User level, Business unit level, Parent: Child Business unit level)  
  
**User or a Team owned entity**

* Records of “User or a Team owned entity” can be limited to users or teams, so that you restrict data access to authorized users
* The user-owned or team-owned entities have five access levels: None, User level, Business unit level, Parent: Child Business unit level, Organization.

**1) Scenario**: If there are two business process flows A and B for entity E1

 A is assigned to Administrator

 B is for system customizer

 I have two users user1 and user2

 User1 is administrator

 User2 got two roles 1) Administrator and 2) System Customizer

 Which business process flow will be applied to User2

 Ans: As User2 got two roles, the role with highest privileges will override the role with less privileges.

 So business process flow A will be available for User2 as Administrator got more privileges than System  customizer.

**2) Maximum number of processes, stages, and steps in business process flow's?**

To ensure acceptable performance and the usability of the user interface, there are some limitations you  need to be aware of when you plan to use business process flows:

    There can be no more than 10 activated business process flow processes per entity.

    Each process can contain no more than 30 stages.

    Multi-entity processes can contain no more than five entities.

**3) Scenario:**I am trying to create multiple records in a single call, Can I create multiple records on single call? If its possible then whats the best approach? How can we identify which record is related to which request? What happens when error occours on a request in between executions of requests?

 Yes we can create multiple records in single go.

 We can use ExecuteMultipleRequest class in order to to execute multiple requests in a single web call.

 Execution will continue een if one request fails, we can set ContinueOnError property to true to indicate that continue with executions of requests even when some request fails in between.

 We set ReturnResponses  to true in order to avaide latency time of execution and make our call efficient.

 Following is an example from microsoft site.  https://msdn.microsoft.com/en-us/library/jj863631.aspx

Code:

requestWithResults = new ExecuteMultipleRequest()

{

// Assign settings that define execution behavior: continue on error, return responses.

Settings = new ExecuteMultipleSettings()

{

ContinueOnError = false,

ReturnResponses = true

},

// Create an empty organization request collection.

Requests = new OrganizationRequestCollection()

};

      
We create multiple requests and assign target entities individually to prepare request collection.

Code:

// Create several (local, in memory) entities in a collection.

EntityCollection input = GetCollectionOfEntitiesToCreate();

// Add a CreateRequest for each entity to the request collection.

foreach (var entity in input.Entities)

{

CreateRequest createRequest = new CreateRequest { Target = entity };

requestWithResults.Requests.Add(createRequest);

}

Once the requests are prepared then we execute those requests and store responses in to ExecuteMultipleResponce Object

Code:

// Execute all the requests in the request collection using a single web method call.

ExecuteMultipleResponse responseWithResults =

(ExecuteMultipleResponse)\_serviceProxy.Execute(requestWithResults);

Now the question is how do we know which result is related to which request?

We will loop though all the response items in ExecuteMultipeResponse object and the check the RequestIndex of each response item

in order to map it with particular request as shown below, if there is an error particular request that can also be identified using Fault property

Code:

// Display the results returned in the responses.

foreach (var responseItem in responseWithResults.Responses)

{

// A valid response.

if (responseItem.Response != null)

DisplayResponse(requestWithResults.Requests[responseItem.RequestIndex], responseItem.Response);

// An error has occurred.

else if (responseItem.Fault != null)

DisplayFault(requestWithResults.Requests[responseItem.RequestIndex],

responseItem.RequestIndex, responseItem.Fault);

}

**Difference between Secure / Unsecure Configuration of Plugin Registration tool in CRM 2011**

As you all know the plugin registration tool in CRM 2011 contains Secure and Unsecure configuration sections as shown below.

Following are the two key differences found between these two configuration settings.

|  |  |
| --- | --- |
| Unsecure Configuration of  Plugin Registration tool in CRM 2011 | Secure Configuration of Plugin  Registration tool in CRM 2011 |
| Unsecure configuration information could be read by any user in CRM. Remember its *public* information (Eg: Parameter strings to be used in plugin could be supplied here) | The Secure Configuration information could be read only by CRM Administrators.(Eg: Restricted data from normal user could be supplied here) |
| Imagine that you include a plugin, plugin steps and activate them in a solution. Later solution was exported as Managed Solution to another environment. In this scenario, the supplied Unsecure configuration values would be available in the new environment. | Imagine that you include a plugin, plugin steps and activate them in a solution. Later solution was exported as Managed Solution to another environment. In this scenario, the supplied Secure configuration  information would *NOT*be available in the new environment. The simple  reason behind this is to provide more security to the contents of Secure Configuration. |

Pitfall:

Consider a scenario that you have developed a plugin and certain parameter strings are designed to supply to the plugin in such a way that it is required to run the plugin smoothly. If you supply these parameter strings under secure configuration then the plugin will work fine only for the CRM Administrators. The simple reason is secure configuration can only be read by a CRM Administrator. So if the user is not a CRM administrator then the plugin would try to read  but it would fail just because its under the secure configuration. All public information should be supplied via Unsecure configuration section. So please remember these tips when you supply the secure and unsecure configuration via Plugin Registration tool.

Also, you could have given the privilege of reading secure config.  
In roles, it is available in Customization -> Sdk Message Processing Step Secure Configuration

**How to set execution order of plugins**

ANS:   When we use plugins in MS Dynamics CRM, sometimes we may need to use more than one plugins with common trigger event. In order to handle this scenario, we have a property in Plugin Registration tool. It’s called 'Execution Order'. So the plugins which share same trigger event could be assigned with a Execution order. Execution Order numbering starts from one. Even if all the plugins share the common trigger event, the Plugin with Execution order 1 would be executed first and then the rest. Hence we could decide this order according to our requirement.

            For Instance,

            Imagine that we have two plugins

            1. Plugin: Assign Owner

            2. Plugin: Calc

            Both of these must be fired when we create a contact and also as Pre-Operational.

            But as per our requirement we decide that Plugin 'Assign Owner' should be executed first and then 'Calc'

            So it could be done while defining the step.  
  
  
**Is Javascript Multi Threadeed ot its single threaded?**  
  
Javascript is single threaded and event driven.  
  
**is Sqlconnection,Sql Command thread safe?**  
  
No They are not thread safe.  
  
**Is Session thread safe?**  
  
Yes session in Asp.Net is thread safe  
  
read more about thread safety in ASP.NET [Here](http://blogs.msdn.com/b/benchr/archive/2008/09/03/does-asp-net-magically-handle-thread-safety-for-you.aspx)  
  
**In Javascript whats difference between (=, ==, ===) ?**  
  
 *Single equal symbol* is to assign value to variable  
  
*Double equal symbol* is to compare two values  
  
*Three equal symbols* means *equality without type coercion*  
  
***example****: var A=1; var B=1;  A==B  is true*  
 *Var A = 1;  A==1 is true*  
 *A===false  is false because they are of different  type.*  
  
  
**I am using singleton pattern and found that two objects are created , how is it possible?**  
  
If you have multiple worker processes configured then not all of the requests are handled by the same process and thus not the same singleton. so  if multiple singleton are handling requests then obviously multiple objects will be created.