



# **Cloud & Smarter Infrastructure Professional Certification Program**

Study Guide Series

Exam C2010-653 - IBM TRIRIGA  
Application Platform V10.2 Application  
Consultant

<b>Purpose of Exam Objectives .....</b>	<b>3</b>
<b>High-level Exam Objectives .....</b>	<b>4</b>
<b>Detailed Exam Objectives.....</b>	<b>8</b>
<b>Section 1 - Application Building.....</b>	<b>8</b>
<b>Section 2 - Application Presentation .....</b>	<b>23</b>
<b>Section 3 - Application Workflow.....</b>	<b>34</b>
<b>Section 4 - Utilities .....</b>	<b>42</b>
<b>Section 5 - Application Administration .....</b>	<b>46</b>
<b>Next Steps.....</b>	<b>49</b>

## **Purpose of Exam Objectives**

When an exam is being developed, the Subject Matter Experts work together to define the role the certified individual will fill. They define all of the tasks and knowledge that an individual would need to have in order to successfully implement the product. This creates the foundation for the objectives and measurement criteria, which are the basis for the certification exam.

The Tivoli Certification item writers use these objectives to develop the questions that they write and which will appear on the exam.

It is recommended that you review these objectives. Do you know how to complete the task in the objective? Do you know why that task needs to be done? Do you know what will happen if you do it incorrectly? If you are not familiar with a task, then go through the objective and perform that task in your own environment. Read more information on the task. If there is an objective on a task there is about a 95% chance that you WILL see a question about it on the actual exam.

After you have reviewed the objectives and completed your own research, then take the assessment exam. While the assessment exam will not tell you which question you answered incorrectly, it will tell you how you did by section. This will give you a good indication as to whether you are ready to take the actual exam or if you need to further review the materials.

Note: This is the high-level list of objectives. As you review these objectives, click for a more detailed level of how to perform the task.

## High-level Exam Objectives

Section 1 - Application Building	
1.1	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a module using the Data Modeler tool so that business objects can now be created under the new module.</u>
1.2	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a module is created, create a business object by using the Data Modeler tool so that fields, data sections, forms, and a state family can now be created for the new business object.</u>
1.3	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object exists, find/add a field to the business object by using the Data Modeler tool so that the field is available in the creation and modification of records of that business object type.</u>
1.4	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a list by using the Lists tool so that a new list is now available for selection by a list field.</u>
1.5	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a custom field in Business Object so that data is accepted in accordance with stated requirements.</u>
1.6	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a module is created, a business object is created, and there are fields defined for this business object, create a publish name using the Data Modeler tool so that the business object may be published successfully.</u>
1.7	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been created, create a state family in Data Modeler so that the records of that business object type conform to a lifecycle consistent with business requirements.</u>
1.8	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, an applicable module, business object, and state transition saved; create a new sub action to perform the specified logic when the state transition is triggered.</u>
1.9	<u>Given the IBM TRIRIGA application and platform are installed and the user has an application builder license, create an association between two business objects so that an association has been created between two business objects and may be used during the creation of record level associations.</u>
1.10	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a module is created, a business object is created, create a smart section by using the Data Modeler tool so that the business object may reference data from an associated business object.</u>

1.11	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been created, and a published name defined, and the business object remains in a Created or a Revision In Progress state, publish the business object in Data Modeler so that forms and subsequently records, may be created and so that records can reflect any changes made in the newly published version of the business object.</u>
1.12	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license and an association has been created, add a Locator field so that the field creates an association to that record.</u>
1.13	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a list is created, modify an existing list using the Lists tool so that any previously configured list fields linking to a modified list will display the updated list data.</u>
1.14	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and one or more forms published, create a query so that a set of records may be returned to fulfill a specific business requirement.</u>
1.15	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license and the extended formula agent has been started; create an extended formula field so that the system will trigger the calculation whenever one of the inputs changes.</u>
1.16	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license and an association has been created between two business objects, create an association filter on a query so that data returned by that query is filtered based on criteria define in business case.</u>
1.17	<u>Given that IBM TRIRIGA application and platform are installed, the user has access to Report Manager, a report is created with fields selected to display, create one or more field filter so that you may filter the result set of the report based on a pre-specified value or a user defined value at runtime of the report.</u>
<b>Section 2 - Application Presentation</b>	
2.1	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and a form created to support the business object, create a tab on the form and sort it in the manner desired for record presentation so that after publishing the form the new tab and/or tab order will be available throughout the application.</u>
2.2	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, an applicable module, business object, form, and tab exist; create and sort form sections so that a new form section has been created and/or the sections are sorted in the desired order.</u>
2.3	<u>Given that TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, and one or more form sections are created, create a section action so that this is available as a live action button for the end user at runtime.</u>

2.4	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, configure an on change event within a form so that on change events can trigger application related processes as required when data is modified in a field.</u>
2.5	<u>Given that IBM TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, one or more form sections are created, and one or more fields of type Form Action are created, configure an on-click event for a Form Action field so that this is available as an action button for the end user at runtime.</u>
2.6	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and a form created to support the business object, modify the label or name of the form so that after publishing the form the new label and/or name will be available throughout the application.</u>
2.7	<u>Given that IBM TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, import the state transition family into the form so that the form can operate through its designed state transition life cycle at runtime.</u>
2.8	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object, form, and any necessary queries have been published/created, create navigation items and collections to be available for menus and/or portals to enable a user to them.</u>
2.9	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, and the applicable Portal exists; customize a portal so that the desired portal has been customized.</u>
<b>Section 3 - Application Workflow</b>	
3.1	<u>Given a completed functional design document, explain different workflow types so that the determination can be made on the type of workflow to be used.</u>
3.2	<u>Given a functional TRIRIGA system and a properly configured user for, create a workflow so that the desired logic is performed.</u>
3.3	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, review the design of helper objects so that the user is able to perform repeatable processes without the need to design new objects.</u>
3.4	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a workflow with instance logging turned on so that each time the workflow is run a history or instance of the workflow is saved for investigative purposes.</u>
<b>Section 4 - Utilities</b>	
4.1	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create an Object Migration Package in the Object Migration tool so that configurations can be ported from one environment to another.</u>

4.2	<u>Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object and form has been published, create a data integrator input file so that data can be loaded or updated within the TRIRIGA system.</u>
4.3	<u>Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, and the target object and fields of the DI file exist, import the DI file so that the specified DI file is processed and records are created or modified.</u>
4.4	<u>Given that IBM TRIRIGA application and platform are installed, the user has access to the Document Manager, and proper permissions on the target folder to create a document record, import a document from your local file system so that the document is available for use in the TRIRIGA system.</u>
<b>Section 5 - Application Administration</b>	
5.1	<u>Given that IBM TRIRIGA application and platform are installed, user with adequate security to access the Security Manager tool, configure a security group so that security group members have the desired level of access on a form's sections and actions.</u>
5.2	<u>Given that IBM TRIRIGA application and platform are installed, the user is a part of the Admin group, and the user has access to Admin Console, use the Cache Manager to clear cache for various platform components.</u>
5.3	<u>Given that IBM TRIRIGA application and platform are installed, the user has admin console access, monitor workflow from within the admin console so that Admin console user can utilize the admin console to monitor a variety of workflow activities which can be critical in evaluating workflow issues.</u>
5.4	<u>Given that IBM TRIRIGA application and platform are installed, the user is a part of the Admin group, and the user has access to Admin Console, use the Platform Logging tool to enable debug logging for parts of or all platform functionality.</u>

## Detailed Exam Objectives

### Section 1 - Application Building

- 1.1. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a module using the Data Modeler tool so that business objects can now be created under the new module.**

SUBTASK(S):

- 1.1.1. Open the Data Modeler tool.
- 1.1.2. Click New.
- 1.1.3. Select New Module.
- 1.1.4. Enter a name for the module based upon the recommendations in the Application Building for IBM TRIRIGA Application Platform.
- 1.1.5. Select Hierarchical option depending on requirements.
  - 1.1.5.1. Select Show Quantity if required.
- 1.1.6. Save module.

- 1.2. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a module is created, create a business object by using the Data Modeler tool so that fields, data sections, forms, and a state family can now be created for the new business object.**

SUBTASK(S):

- 1.2.1. Open the Data Modeler tool.
- 1.2.2. Hover over the Object Browser to expose the list of modules.
- 1.2.3. Click the folder for the module you wish to work with.
- 1.2.4. Click New.
- 1.2.5. Select New Business Object.
- 1.2.6. Enter a name for the module based upon the recommendations in the Application Building for IBM TRIRIGA Application Platform.
- 1.2.7. Select business object type depending on requirements.
  - 1.2.7.1. Select Stand Alone, Embedded, Link, or Externally Managed
- 1.2.8. Select Has Staging Table option depending on requirements.
- 1.2.9. Select Has Calendar option depending on requirements.
- 1.2.10. Select Audit Actions option depending on requirements.
- 1.2.11. Select Audit Access option depending on requirements.
- 1.2.12. Select Audit type depending on requirements.
  - 1.2.12.1. Select No Audit, Audit Interactive Data, or Audit All Data.
- 1.2.13. Select Require Explanation option depending on requirements.
- 1.2.14. Select Show Single Tab option depending on requirements.
- 1.2.15. Select Approval History option depending on requirements.
- 1.2.16. Click Save BO.

- 1.3. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object exists, find/add a field to the business object by using the Data Modeler tool so that the field is available in the creation and modification of records of that business object type.**

**SUBTASK(S):**

- 1.3.1. Open the Data Modeler tool.
- 1.3.2. Hover over the Object Browser on the left.
- 1.3.3. Select module folder and business object of the BO to be modified.
- 1.3.4. If the business object is Published then click Revise BO.
- 1.3.5. If the field to be added already exists on another business object then:
  - 1.3.5.1. Click the Find link on the Field List panel (note: if the Field List panel is not available then select View and Field List to display).
  - 1.3.5.2. Use the filters at the top of the Field Search panel to find a list of field matches. For example, type the name of the field in the Name box and click Search.
  - 1.3.5.3. From the returned list of matching fields in the bottom of the Field Search panel box, check the selection box next to the field(s) to be added.
  - 1.3.5.4. Click the Accept link at the top of the Field List panel.
- 1.3.6. If the field to be added does not exist on another business object then:
  - 1.3.6.1. Click the Add link at the top of the Field List panel (note: if the Field List panel is not available then select View and Field List to display).
  - 1.3.6.2. In the Field Properties panel select the Field Type and then type a name and field. (note: Name should be named in accordance with the recommendations listed in the Application Building for IBM TRIRIGA Application Platform guide.)
  - 1.3.6.3. In the Field Properties panel modify any of the remaining optional settings in accordance with the requirements for the field to be added.
  - 1.3.6.4. Click Save Field.

- 1.4. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a list by using the Lists tool so that a new list is now available for selection by a list field.**

**SUBTASK(S):**

- 1.4.1. Open the Lists tool.
- 1.4.2. Click New.
- 1.4.3. Give list a name.
- 1.4.4. Set the language.
- 1.4.5. Select the module.
- 1.4.6. Check Dependent list check box if applicable.
- 1.4.7. Select Source Type.

- 1.4.8. Click OK to save.
- 1.4.9. Select the newly created list.
- 1.4.10. Add entries to list in Value field.
- 1.4.11. Click Save Entries after entering all fields.
- 1.4.12. If desired to sort the list items
  - 1.4.12.1. Click Sort Entries.
  - 1.4.12.2. Click up or down arrows next to entries to move them up or down one position.
  - 1.4.12.3. Click Save Sequence when satisfied with the order.

**1.5. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a custom field in Business Object so that data is accepted in accordance with stated requirements.**

**SUBTASK(S):**

- 1.5.1. Open the Data Modeler tool.
- 1.5.2. Hover over the Object Browser Bar.
- 1.5.3. Click on the Folder Icon of the Module containing the business object you wish to work in.
- 1.5.4. Click on the Name of the business object you wish to work in.
- 1.5.5. If business object is in Published status, Click Revise.
- 1.5.6. If the Field List pane is not visible click on View and then Field List.
- 1.5.7. In the Field List pane, click Add
- 1.5.8. The Field Properties pane will display with mostly blank details.
- 1.5.9. Select the required Field Type from the drop-down list.
- 1.5.10. Enter a Name in accordance with the Application Building for IBM TRIRIGA Application Platform guide.
- 1.5.11. Enter a Label for the field.
- 1.5.12. Enter a description of the field, if desired.
- 1.5.13. Enter a Purpose, if desired.
- 1.5.14. Select the Required check box, if the field is to be required. (Note: if this parameter is selected at the business object level, all forms using this field will have this field as required)
- 1.5.15. Check the Do Not Auto-Populate check box unless auto-populate is required.
- 1.5.16. Select Results Column check box if required.
- 1.5.17. Select Mobile Field check box, if required.
- 1.5.18. Select Staging table Field check box, if required.
- 1.5.19. Select Ready Only check Box, if required. (Note: if this parameter is selected at the business object level, all forms using this field will have this field as read only)
- 1.5.20. Enter a Default Value if required.
- 1.5.21. Select a validation method, if desired.
- 1.5.22. Enter a size for the field.
- 1.5.23. Set any additional parameters as required.

#### 1.5.24. Click Save Field

**1.6. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a module is created, a business object is created, and there are fields defined for this business object, create a publish name using the Data Modeler tool so that the business object may be published successfully.**

#### SUBTASK(S):

- 1.6.1. Open the Data Modeler tool.
- 1.6.2. Hover over the Object Browser to expose the list of modules.
- 1.6.3. Click the folder for the module where your business object is located in.
- 1.6.4. Click the title of the business object you wish to work with.
- 1.6.5. Click Tools.
- 1.6.6. Select BO Mapping.
- 1.6.7. In the Name row, click Find.
- 1.6.8. In the Section Name list, select the section where the field you wish to work with is created.
- 1.6.9. In the Field Name list, select the field for your business object mapping depending on requirements.
- 1.6.10. Click Ok.
- 1.6.11. If required, in the Name row, click Add to add additional fields to your business object mapping depending on requirements.
  - 1.6.11.1. Select the type of delimiter for your business object mapping in the drop-down list.
  - 1.6.11.2. Repeat steps above to select a field for the business object mapping.
- 1.6.12. Click Save Mapping.

**1.7. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been created, create a state family in Data Modeler so that the records of that business object type conform to a lifecycle consistent with business requirements.**

#### SUBTASK(S):

- 1.7.1. Open the Data Modeler tool.
- 1.7.2. Hover over the Object Browser on the left.
- 1.7.3. Select Module folder and business object of the BO to be modified.
- 1.7.4. If the business object is not the first created (and therefore not the Base business object) then the state family will be inherited from the Base Business Object and no creation is required.
- 1.7.5. If the business object is the first created or the state family was previously deleted then:
  - 1.7.5.1. Click the Tools link and the BO State Transition drop-down item.

- 1.7.5.2. From the State Transitions tool add states by clicking the Add State link.
  - 1.7.5.2.1. Name the state and click Apply to display the state changes.
- 1.7.5.3. From the State Transitions tool add transitions (actions) by selecting on the originating state, click on the Add Transition link and then click on the destination state.
  - 1.7.5.3.1. Provide the transition a name (Action) and Label.
  - 1.7.5.3.2. Select the remaining options in accordance with business requirements (i.e. check the Default Display option if the action needs to be visible to the end user viewing the record from that state.)
  - 1.7.5.3.3. Click the Apply link to display the transition changes
- 1.7.5.4. Once all desired states and transitions are in place click the Save link to commit the changes to the state family. (Note: the Save link will do a state family validation and failure to conform to state family rules will result in the entire state family rolling back to the last saved valid state family if there was one or back to a null state family if there has not been a valid saved state family).
- 1.7.5.5. Sub Action may be added by clicking on the transition needing a sub action then clicking on the Add Sub Action link.
- 1.7.5.6. Click Save to commit the entire state family.

**1.8. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, an applicable module, business object, and state transition saved; create a new sub action to perform the specified logic when the state transition is triggered.**

**SUBTASK(S):**

- 1.8.1. Open the Data Modeler tool.
- 1.8.2. Select the desired business object
- 1.8.3. Select Tools link and then BO State Transition in the drop-down menu.
- 1.8.4. Click on the desired state transition to select it.
- 1.8.5. Click on the Add Sub Action link in the Transition Properties window.
- 1.8.6. Type in the desired label in the label box.
- 1.8.7. If desired select a workflow to be executed by this sub action.
- 1.8.8. If desired place a check in the Log check box.
- 1.8.9. Click Ok.
- 1.8.10. If it is desired for the sub action to set field(s) value(s).
  - 1.8.10.1. Click on the rectangular portion of the state transition to select the sub action.
  - 1.8.10.2. Click Open.
  - 1.8.10.3. Click Add.
  - 1.8.10.4. Place a check next to the desired field(s).
  - 1.8.10.5. Enter the desired value in the Constant Value column for each field.

1.8.11. Click Save to commit the State Family.

**1.9. Given the IBM TRIRIGA application and platform are installed and the user has an application builder license, create an association between two business objects so that an association has been created between two business objects and may be used during the creation of record level associations.**

SUBTASK(S):

- 1.9.1. Business object level associations can be created in either the Data Modeler or the Association Manager.
- 1.9.2. Create the forward and reverse associations from the source business objects perspective.
  - 1.9.2.1. If using Data Modeler
    - 1.9.2.1.1. Open the Data Modeler tool.
    - 1.9.2.1.2. Hover over the Object Browser Bar.
    - 1.9.2.1.3. Click on the Folder Icon of the source Module containing the business object you wish to work in.
    - 1.9.2.1.4. Click on the Name of the source business object you wish to work in.
    - 1.9.2.1.5. At the top of the Data Modeler window, Click New.
    - 1.9.2.1.6. From the resulting popup, select New Association
    - 1.9.2.1.7. In the Association Properties pane, the Module and Business Object should be pre-populated with the information of the module and business object you are working within.
  - 1.9.2.2. If using the Association Manager
    - 1.9.2.2.1. Open the Association Manager tool
    - 1.9.2.2.2. Click on the radio button for the module containing the business object you wish to work in.
    - 1.9.2.2.3. Click Add
    - 1.9.2.2.4. In the pop-up window select the Source business object in the Business Object drop-down.
  - 1.9.2.3. Click the drop-down field arrow next to the field labeled Association.
  - 1.9.2.4. Select an appropriate association string.
    - 1.9.2.4.1. This is the forward association string from the source to the target
  - 1.9.2.5. Click the drop-down field arrow next to the field labeled Associate Module.
  - 1.9.2.6. Select the target module.
  - 1.9.2.7. Click the drop-down field arrow next to the field labeled Associate Business Object.
  - 1.9.2.8. Select the target business object that is to be referenced.
  - 1.9.2.9. Click the drop-down field arrow next to the field labeled Reverse Association.

- 1.9.2.10. Select an appropriate association string.
  - 1.9.2.10.1. This is the reverse association string from the source to the target.
- 1.9.2.11. Click Save Association.
- 1.9.3. Create the forward and reverse associations from the target business object's perspective
  - 1.9.3.1. If using Data Modeler
    - 1.9.3.1.1. Hover over the Object Browser Bar
    - 1.9.3.1.2. Click on the Folder Icon of the target module previously selected.
    - 1.9.3.1.3. Click on the Name of the target business object previously selected.
    - 1.9.3.1.4. At the top of the Data Modeler window, Click New.
    - 1.9.3.1.5. From the resulting popup, select New Association
    - 1.9.3.1.6. In the Association Properties pane, the module and business object should be pre-populated with the information of the module and business object you are working within.
  - 1.9.3.2. If using the Association Manager
    - 1.9.3.2.1. Open the Association Manager tool.
    - 1.9.3.2.2. Click on the radio button for the module containing the business object you wish to work in.
    - 1.9.3.2.3. Click Add
    - 1.9.3.2.4. In the pop-up window select the source business object in the Business Object drop-down.
  - 1.9.3.3. Click the drop-down field arrow next to the field labeled Association.
  - 1.9.3.4. Select an appropriate association string.
    - 1.9.3.4.1. This is the forward association string from the target to the source.
    - 1.9.3.4.2. It should match the string picked as the reverse association string from the source to the target business object.
  - 1.9.3.5. Click the drop-down field arrow next to the field labeled Associate Module.
  - 1.9.3.6. Select the module of the source business object.
  - 1.9.3.7. Click the drop-down field arrow next to the field labeled Associate Business Object.
  - 1.9.3.8. Click on the name of the source business object.
  - 1.9.3.9. Click the drop-down field arrow next to the field labeled Reverse Association.
    - 1.9.3.9.1. This is the reverse association string from the target to the source.
    - 1.9.3.9.2. It should match the string picked as the forward association string from the source to the target.
  - 1.9.3.10. Click Save Association.

**1.10. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a module is created, a business object is created, create a smart section by using the Data Modeler tool so that the business object may reference data from an associated business object.**

SUBTASK(S):

- 1.10.1. Open the Data Modeler tool.
- 1.10.2. Hover over the Object Browser to expose the list of modules.
- 1.10.3. Click the folder for the module where your business object is located in.
- 1.10.4. Click the title of the business object you wish to work with.
- 1.10.5. Click New.
- 1.10.6. Select New Association.
- 1.10.7. Select the association string you wish to use from the Association drop-down list.
- 1.10.8. Select the module for the business object you wish to create the smart section for from the Associate Module drop-down list.
- 1.10.9. Select the business object you wish to create the smart section for from the Associate Business Object drop-down list.
- 1.10.10. Select the reverse association string you wish to use from the Reverse Association drop-down list.
- 1.10.11. Select Dependent Flag depending on requirements.
- 1.10.12. Click Save Association.
- 1.10.13. Click Create Section.
- 1.10.14. In the Section Name field, enter a name for the smart section.
- 1.10.15. In the Section Label field, enter a label for the smart section.
- 1.10.16. In the Temporary Association list, select the Temporary Association for your smart section depending on requirements.
- 1.10.17. Select the scope of smart associations depending on requirements.
  - 1.10.17.1. Select Associate One Record or Associate Multiple Records.
- 1.10.18. If Associate Multiple Records was selected, select Vertical Section depending on requirements.
- 1.10.19. Select Dependent depending on requirements.
- 1.10.20. If Dependent was not selected, select the reference type
  - 1.10.20.1. Select Reference Only or Reference With Modify depending on requirements.
- 1.10.21. In the workflow to Initialize Record row, select a workflow from the search prompt depending on requirements.
- 1.10.22. Select Used By DataConnect depending on requirements.
- 1.10.23. Select Values Required depending on requirements.
- 1.10.24. In the Field List section, click the down arrow to expose the field list section.
- 1.10.25. Select one or more fields depending on requirements.
- 1.10.26. Click OK.
- 1.10.27. Click Save Section.

**1.11. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been created, and a published name defined, and the business object remains in a Created or a Revision In Progress state, publish the business object in Data Modeler so that forms and subsequently records, may be created and so that records can reflect any changes made in the newly published version of the business object.**

**SUBTASK(S):**

- 1.11.1. Open the Data Modeler tool.
- 1.11.2. Hover over the Object Browser on the left.
- 1.11.3. Select module folder and business object of the BO to be published.
- 1.11.4. Click on the Publish BO link. (Note: if there is not a Publish BO link available then it may be accessed through the Tools drop-down link as long as the BO is in a Created or Revision In Progress state.)
- 1.11.5. Once the Publish BO link is clicked the business object will pass through a Pending Publication state. This state may be visible in the Business Object Properties panel if the screen is refreshed or the business object is immediately reselected.
- 1.11.6. Once the Publish BO process has completed a screen refresh or reselection of the business object will display a Published state. Additionally, once published the Publish BO links are replaced with Revise BO links. Clicking the Revise BO link will move the business object back into an editable state so that fields, state family, smart sections, etc. may be modified. Modifications made in the Revision In Progress state are stored in the data modeler but the application behavior is not modified until the business object is published again.

**1.12. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license and an association has been created, add a Locator field so that the field creates an association to that record.**

**SUBTASK(S):**

- 1.12.1. Open the Data Modeler tool.
- 1.12.2. Hover over the Object Browser Bar.
- 1.12.3. Click on the Folder Icon of the Module containing the business object you wish to work in.
- 1.12.4. Click on the name of the business object you wish to work in.
- 1.12.5. Ensure the business object is in a non published state.
- 1.12.6. In the Field List Pane, Click Add.
- 1.12.7. The Field Properties pane will display with mostly blank details.
- 1.12.8. Select the Field Type of Text from the drop-down list.
- 1.12.9. Enter a name in accordance with Application Building for IBM TRIRIGA Application Platform guide.

- 1.12.10. Enter a Label for the field.
- 1.12.11. Enter a description of the field, if desired.
- 1.12.12. Enter a Purpose, if desired.
- 1.12.13. Select the Required Check box, if the field is to be required. (Note: if this parameter is selected at the business object level, all forms using this field will have this field as required)
- 1.12.14. Select Do Not auto-populate unless required.
- 1.12.15. Select Results Column check Box if required.
- 1.12.16. Select Mobile Field check box, if required.
- 1.12.17. Select Staging table Field check box, if required.
- 1.12.18. Enter a size for the field.
- 1.12.19. Click the Check Box next to the Parameter labeled Locator Field..
- 1.12.20. A new parameter appears, (Locator Module).
- 1.12.21. Click the arrow next to the drop-down list.
- 1.12.22. Select the module that contains the business object you wish to create the Locator field reference too.
- 1.12.23. A New set of parameters appear, select a business object from the drop-down list labeled Business Object Name..
- 1.12.24. Select the appropriate Association string.
- 1.12.25. Click the arrow next to the drop-down list labeled Locator Field.
- 1.12.26. Select the field name to be mapped.
- 1.12.27. Click OK
- 1.12.28. Click Save Field.
- 1.12.29. If Additional fields from the target business Object are required to be mapped.
  - 1.12.29.1. Click the field name from the Field List pane.
  - 1.12.29.2. In the Field Properties pane, scroll towards the bottom, to the Locate Using parameter.
  - 1.12.29.3. Click the Hyperlink labeled Edit Mapping.
  - 1.12.29.4. In the Locator Mapping pane, select the Magnifying glass next to the field being mapped too.
  - 1.12.29.5. In the resulting popup, select the field the data is coming from.
  - 1.12.29.6. Repeat as necessary for all additional required fields.
- 1.12.30. Click Save Field.
- 1.12.31. Ensure business object is published in order to install the changes.

**1.13. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, a list is created, modify an existing list using the Lists tool so that any previously configured list fields linking to a modified list will display the updated list data.**

**SUBTASK(S):**

- 1.13.1. Open the Lists tool.
- 1.13.2. If necessary, select the filter criteria by clicking on one or more items in the Filter By section.

- 1.13.3. Select the list you wish to work with in the section underneath the Manage By drop-down.
- 1.13.4. If removal of a list is necessary, click Delete List.
- 1.13.5. Enter in a new value in the Value field depending on requirements and type Enter to create an additional value entry.
- 1.13.6. Repeat step 5 for any additional new list values you wish to add to the list.
- 1.13.7. Click Save Entries to commit the new values to the list.
- 1.13.8. Select on one or more existing list values you wish to delete depending on requirements and select Delete Entries.
- 1.13.9. If you wish to sort the list values alphabetically, click Sort List.
- 1.13.10. If you wish to sort the list values manually, click the up or down arrows to change the sort sequence for one or more list values depending on requirements.
- 1.13.11. Click Save Sequence.
- 1.13.12. If you wish to edit the label, description, type, system list parameter, and/or module assignment, click View/Edit List.
  - 1.13.12.1. Modify values for label, description, type, system list parameter, and/or module assignment.
  - 1.13.12.2. Click OK.
- 1.13.13. If you wish to edit the translated versions per list value, click Label List.
  - 1.13.13.1. Select a language from the Select Language drop-down list.
  - 1.13.13.2. Modify one or more list values in the Label field beside each list value.
  - 1.13.13.3. Click Save.
- 1.13.14. Click OK

**1.14. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and one or more forms published, create a query so that a set of records may be returned to fulfill a specific business requirement.**

**SUBTASK(S):**

- 1.14.1. Open the Report Manager tool.
- 1.14.2. Select on the System Reports tab. (This same process could be used in the creation of a My Reports report or a Community report.)
- 1.14.3. Click on the New link.
- 1.14.4. On the pop-up complete the name in accordance with the Application Building for IBM TRIRIGA Application Platform guide.
- 1.14.5. Complete the optional ID, Header, Tag, and Description fields as needed.
- 1.14.6. In the Type field use the selector to choose the desired query type from the drop-down. (Note: Report/Query will be addressed here in this breakdown.)
- 1.14.7. When choosing between Report and Query, Query should be selected if the results are to be used solely by the system to support functionality (i.e. a filter for a selection icon).

- 1.14.8. Select Data Scope in accordance with business requirements
- 1.14.9. Select the Show As Community Report check box if it is the query should also be available from the Community tab.
- 1.14.10. On the Business Objects sub-tab click the Add Business Object link.
- 1.14.11. On the Business Object popup select the Module, Business Object(s) and Form(s) that the query should return records for and click OK to commit. (Note: a business object must be selected before choosing a specific form, and a single form must be selected if the query is to be set as an editable query.)
- 1.14.12. Optional: With a business object selected on the Business Objects sub tab additional business objects can be added with the same Add Business Object link. This time on the popup, Specify the Module, Business Object(s) and choose the connecting association in the Associated Options drop-down. (Note: the Show only Associations defined in Data Modeler check box allows the user to limit selection options in the drop-down to only valid business object level associations.) Still in the popup checking the Primary Associated Business Object designates the newly added business object as the primary associated object. (Note: the system will automatically designate it if it is the first additional object added.)
- 1.14.13. Designate the Random Result Count, Fixed Column Count, Result Size and Prompt Before Query selections as required per business requirements.
- 1.14.14. If a single form was designated on the Business Objects sub tab, then the Editable selection criteria will be available. Set as required. If set to yes set the State filter to the appropriate state.
- 1.14.15. On the Related Reports sub tab use the Add link to add reports that should be accessible to the user when the query is rendered.
- 1.14.16. On the Security sub tab, use the Add link to identify security groups with permission to run the report. (Note: if no security group is added then all security groups will have view access.)
- 1.14.17. On the Columns tab, select the business object that fields should be added from. Then in the Columns section select the check box of each field that should be rendered on the report. Repeat for each associated business object with fields to display.
- 1.14.18. In the Display Columns section, modify the order and field labels as required.
- 1.14.19. Width % can be set as desired, however leaving blank will allow the system to adapt the column widths as necessary.
- 1.14.20. Check the Editable box for each field that is to be designated as changeable when the query is rendered by an individual with adequate security access. (Note: this option is only available if Editable was selected on the General tab.)
- 1.14.21. On the Order & Group tab select fields on the left and then move them to the right with the blue arrows to designate Group By and Order By criteria for rendering the query.

- 1.14.22. For number fields check the sum check box at the bottom if numeric sums (totals) should be rendered on the query.
- 1.14.23. Add field filters to the query (objective to follow).
- 1.14.24. Add association filters to the query (objective to follow).
- 1.14.25. On the Advanced tab, use the Import State Actions button to set state family actions that should be available when the query is rendered. (Note: only applicable if the query is designated as editable.)
- 1.14.26. In the Actions section click Add to set other actions that should be available when the report is to be rendered.
- 1.14.27. Click the Save or the Save & Close button to commit the query.

**1.15. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license and the extended formula agent has been started; create an extended formula field so that the system will trigger the calculation whenever one of the inputs changes.**

**SUBTASK(S):**

- 1.15.1. Find or Create a new number field on the desired business object BO.
  - 1.15.1.1. NOTE: See task Find/add a field to a BO for details on adding a field to a business object.
- 1.15.2. Select the Formula check box to indicate the field is a formula field.
- 1.15.3. Select the radio button for Extended.
- 1.15.4. Click Enter link under the Extended radio button.
- 1.15.5. Set the Inputs.
  - 1.15.5.1. Click Add on the Inputs section.
  - 1.15.5.2. Name the input.
    - 1.15.5.2.1. NOTE: the name is what will be used in the formula section.
  - 1.15.5.3. Set the Input Type drop-down to Field or Query.
  - 1.15.5.4. If Query:
    - 1.15.5.4.1. Set the Assign as drop-down to either Total or Values.
    - 1.15.5.4.2. Click Select.
    - 1.15.5.4.3. In the Pick Element window select and expand the module of the desired query.
    - 1.15.5.4.4. Click the plus next to the query name to show the available fields.
    - 1.15.5.4.5. Select the desired field.
  - 1.15.5.5. If Field:
    - 1.15.5.5.1. Click Select.
    - 1.15.5.5.2. Click the plus next to the desired section.
    - 1.15.5.5.3. Click the desired field.
- 1.15.6. Repeat the above step for each desired Input.
- 1.15.7. Set the formula.
  - 1.15.7.1. Use the names of the inputs created above.

- 1.15.7.1.1. NOTE: These are case sensitive so they must match exactly.
- 1.15.7.2. Use any of the System or User Defined Formulas or basic mathematical operators.
- 1.15.8. Click Ok to save and exit the Extended Formula Window.
- 1.15.9. Click on Save field.
- 1.15.10. Publish the business object.

**1.16. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license and an association has been created between two business objects, create an association filter on a query so that data returned by that query is filtered based on criteria define in business case.**

SUBTASK(S):

- 1.16.1. Open the Report Manager tool.
- 1.16.2. Click on the System Reports tab.
- 1.16.3. Enter the name of the query you will be amending in the Name runtime filter. Click Apply filters.
- 1.16.4. Click on the Query name to open.
- 1.16.5. Click on the Advanced tab.
- 1.16.6. In the Association Filters section bar click the Add action.
- 1.16.7. Select the Module. If it necessary to include all modules, select -Any-
- 1.16.8. Select the business object, if it is necessary to include all business objects in the selected module, select All.
- 1.16.9. From the drop-down box, select the Association Type. (NOTE: this is the association type from the perspective of the known object to the object type of the query.).
- 1.16.10. To restrict query results to those with the specified association type on the context record, select No in the Reverse Association.
  - 1.16.10.1. To allow records with the association type on either end of the association, select Yes. (Note: Use a reverse association ONLY when absolutely functionally necessary. Selected Yes may return more records, and take much more time to process).
- 1.16.11. Specify the Filter Type to use to filter the result of the query for which the association is defined.
  - 1.16.11.1. Select Record
    - 1.16.11.1.1. Enter the required criteria in the Record/Query Field.
  - 1.16.11.2. Or Select Query.
    - 1.16.11.2.1. Click the Magnifying glass.
    - 1.16.11.2.2. Find the query required to be used as a filter.
    - 1.16.11.2.3. Click the radio button next to it.
    - 1.16.11.2.4. Click OK.
  - 1.16.11.3. Or system keyword such as \$\$USERID\$\$.

- 1.16.12. Click OK.
- 1.16.13. Click Save on the report/query.

**1.17. Given that IBM TRIRIGA application and platform are installed, the user has access to Report Manager, a report is created with fields selected to display, create one or more field filter so that you may filter the result set of the report based on a pre-specified value or a user defined value at runtime of the report.**

**SUBTASK(S):**

- 1.17.1. Open the Report Manager tool.
- 1.17.2. Select a tab section where the report you wish to modify exists.
  - 1.17.2.1. Select the My Reports, Community, System Reports, or Administration tab.
- 1.17.3. If necessary, filter the result set of report templates by entering a search string in one or more of the columns and type Enter to start the filter process.
- 1.17.4. Click the hyperlinked text on the report template you wish to modify.
- 1.17.5. Click the Filters tab.
- 1.17.6. If you wish to define a pre-determined field filter, click the check box in the System column next to one or more fields in the Columns section, depending on requirements.
  - 1.17.6.1. In the System Filter Columns section, select the Join Operation to define the filter criteria for more than one field filter, depending on requirements.
  - 1.17.6.2. Modify the label for the field filter depending on requirements.
  - 1.17.6.3. Select the field operator depending on requirements.
  - 1.17.6.4. Enter the field value for your filter depending on requirements.
  - 1.17.6.5. Repeat steps a-d for all additional pre-defined field filters you wish to create.
- 1.17.7. If you wish to define a dynamic user defined runtime field filter, click the check box in the User column next to one or more fields in the Columns section, depending on requirements.
  - 1.17.7.1. In the User Filter Columns section, modify the label for the field filter depending on requirements.
  - 1.17.7.2. Select the field operator depending on requirements.
  - 1.17.7.3. Repeat above steps for all additional user defined runtime field filters you wish to create.
- 1.17.8. Click Save or Save & Close.

## Section 2 - Application Presentation

**2.1. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and a form created to support the business object, create a tab on the form and sort it in the manner desired for record presentation so that after publishing the form the new tab and/or tab order will be available throughout the application.**

### SUBTASK(S):

- 2.1.1. Open the Form Builder tool.
- 2.1.2. Select module containing the form from the Module panel on the left.
- 2.1.3. Click on the Name of the form to be modified.
- 2.1.4. If the form is in a Published state, then click the Revise link to make it editable.
- 2.1.5. In order to work with the tabs, the form itself must be selected. This is done by clicking on the form name in the Navigation panel. (Note: if the Navigation panel is not visible, it can be accessed by clicking View and then the Navigation drop-down choice. Once selected the form name should be highlighted in the Navigation panel.)
- 2.1.6. Click the Add Tab link to create a new tab.
- 2.1.7. In the Properties window designate the desired Name, Label, Tab Information and Instruction to be displayed.
- 2.1.8. Check the Visible box if the tab should default to visible when security permissions exist for a new record.
- 2.1.9. Type in a value for the Access Key if the user should have an access key stroke available to jump the navigation to the tab from another tab when the record is displayed.
- 2.1.10. Use the Style Class to designate alternate style classes for the tab label rendering. (Note: leaving the selection blank designates the default style class.)
- 2.1.11. If the tab is going to be a Custom Url tab, then check the Custom check box and then type in the Url to be rendered on the tab when the record is displayed.
- 2.1.12. Click the Apply link to commit the new tab.
- 2.1.13. Click the Sort Tab button to modify the order the tabs should be rendered on the records.
- 2.1.14. In the Properties box, use the arrows in the Order column to adjust the tab sequence. Once the desired order is set, click the Apply link to commit the new order.
- 2.1.15. Add sections, fields, actions, etc. as required.
- 2.1.16. Once all modifications are complete, click the Publish link to enable the use of the new form throughout the system.

**2.2. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, an applicable module,**

**business object, form, and tab exist; create and sort form sections so that a new form section has been created and/or the sections are sorted in the desired order.**

SUBTASK(S):

- 2.2.1. Open the Form Builder tool.
- 2.2.2. Open the desired Form.
  - 2.2.2.1. Ensure that it is not in the published state.
- 2.2.3. Select the tab where the desired section is to be created or sorted.
- 2.2.4. If Creating a New section on the Form.
  - 2.2.4.1. Click Add Section.
    - 2.2.4.2. Select the type in the type drop-down box as appropriate for the section contents.
      - 2.2.4.2.1. Select Form Section for a section to place fields or buttons.
        - 2.2.4.2.1.1. Enter a value for Name.
        - 2.2.4.2.1.2. Enter a value for Label.
        - 2.2.4.2.1.3. Set the other properties for the section as appropriate.
        - 2.2.4.2.1.4. Click Apply to save the section.
      - 2.2.4.2.2. Select Smart Section for a smart section.
        - 2.2.4.2.2.1. NOTE: A Smart Section can also be added by selecting it in the Components window when on a tab and then clicking Add.
        - 2.2.4.2.2.2. Select the appropriate Smart Section from the Data Section drop-down menu.
        - 2.2.4.2.2.3. Enter a value for Name or keep default.
        - 2.2.4.2.2.4. Enter a value for Label or keep default.
        - 2.2.4.2.2.5. Set the remaining section attributes as appropriate.
        - 2.2.4.2.2.6. Click Apply to save the section.
      - 2.2.4.2.3. Select Multi-tab section to add a section that can contain other sections.
        - 2.2.4.2.3.1. NOTE: A tab section will behave just like a form tab in that it will allow you to add form sections to it.
        - 2.2.4.2.3.2. Enter a value for Name.
        - 2.2.4.2.3.3. Enter a value for Label.
        - 2.2.4.2.3.4. Set the remaining section attributes as appropriate.
        - 2.2.4.2.3.5. Click Apply to save the section.
      - 2.2.4.2.4. Select Query section for a section that displays the results of a specified query.
        - 2.2.4.2.4.1. Enter a value for Name.
        - 2.2.4.2.4.2. Enter a value for Label.

- 2.2.4.2.4.3. Click on the Query picker to set the query that will be displayed in the section
- 2.2.4.2.4.3.1. Select the module where the query is located in the Module drop-down box.
- 2.2.4.2.4.3.2. Select the radio button next to the desired query.
- 2.2.4.2.4.3.3. Click OK
- 2.2.4.2.4.3.4. Set the remaining attributes in the Properties window as appropriate
- 2.2.4.2.4.3.5. If it is desired for the query section to refresh automatically, select the Auto Refresh property.
  - .2.4.2.4.3.5.1. Enter the number of seconds the platform should wait between automatic refreshes of the query section in the Refresh Time in secs. box.
- 2.2.4.2.4.3.6. If a workflow needs to run against records selected on the find action.
  - .2.4.2.4.3.6.1. Click the workflow picker.
  - .2.4.2.4.3.6.2. Select the radio button next to the desired workflow.
  - .2.4.2.4.3.6.3. Click OK.
- 2.2.4.2.4.3.7. Select the name of the association this section will be based on.
  - .2.4.2.4.3.7.1. The found records or newly created records with the Find or Add section action will become associated with the record that contains this section using the specified association name.
- 2.2.4.2.4.3.8. Set the Select Association Type Association String to use to associate records that have been selected in the query section with the record that contains this section.
  - .2.4.2.4.3.8.1. Set the Temp Select Association if the Select Association Type is to be temporary
- 2.2.4.2.4.3.9. Set the Single Select check box if only one record at a time should be selectable within the displayed query.
- 2.2.4.2.4.3.10. Set the remaining section attributes as appropriate.
- 2.2.4.2.4.4. Click Apply to save the section.

- 2.2.4.2.5. Select Report, Graphics, Excel, Gantt, Availability, Stacking, or Group By section type if appropriate.
  - 2.2.4.2.5.1. Set the section attributes as appropriate for the section.
  - 2.2.4.2.5.2. Click Apply to save the section.
- 2.2.5. If sorting sections
  - 2.2.5.1. Click on the Tab or Multi-tab section that contains the sections that are desired to be sorted.
  - 2.2.5.2. Click Sort section.
  - 2.2.5.3. Click on the up or down arrow head next to the section that is desired to be moved to get it to move in the direction clicked.
    - 2.2.5.3.1. Keep repeating step c for each section until all sections are in the desired order.
  - 2.2.5.4. Click Apply.
- 2.3. Given that TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, and one or more form sections are created, create a section action so that this is available as a live action button for the end user at runtime.**

SUBTASK(S):

- 2.3.1. Open the Form Builder tool.
- 2.3.2. Select the module where the form you wish to modify exists.
- 2.3.3. Click the hyperlinked text on the form template you wish to modify.
- 2.3.4. If the form template is in a published state, click Revise.
- 2.3.5. In the Navigation panel, select the folder next to the Form tab where the form section you wish to modify exists.
- 2.3.6. Select the title of the form section you wish to modify.
- 2.3.7. In the Actions section of the Properties window, click Add.
- 2.3.8. Enter a label for your section action.
- 2.3.9. If there will be multiple section actions, enter a display sequence value.
- 2.3.10. Select Popup depending on requirements.
- 2.3.11. Enter the URL of the pop-up window depending on requirements.
- 2.3.12. Select Visible depending on requirements.
- 2.3.13. Select Active depending on requirements.
- 2.3.14. Select the workflow to fire on this section action from the drop-down list in the Workflow column as required.
- 2.3.15. Select the Association to be created from this section action depending on requirements.
- 2.3.16. Select Permanent Association depending on requirements.
- 2.3.17. Click OK in the Action Property section.
- 2.3.18. Click Apply at the top of the form template.
- 2.3.19. Click Publish.

- 2.4. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, configure an on change event**

**within a form so that on change events can trigger application related processes as required when data is modified in a field.**

SUBTASK(S):

- 2.4.1. Open the Form Builder tool.
- 2.4.2. Select the radio button next module name you wish to work in.
- 2.4.3. Select the radio button next to the Form you wish to work in.
- 2.4.4. Open the form and ensure that it is editable.
- 2.4.5. Navigate to the Tab::Section::Field to be enhanced.
- 2.4.6. Scroll to the bottom of the properties pane.
- 2.4.7. Click Add in the Actions section.
- 2.4.8. If on change event is to trigger a pop-up query, if No go to step 12.
  - 2.4.8.1. Select the Module from the Pop-up Module drop-down list that the required query resided in.
  - 2.4.8.2. Select the required Query in the Pop-up Query drop-down List.
  - 2.4.8.3. Select the Single Record Select box if required.
- 2.4.9. If on change event is to trigger a Workflow, select the necessary **SYNCHRONOUS** workflow from the Workflow drop-down list.
- 2.4.10. If a **Temporary** association is required, between the record or records selected in a pop-up query, select the association string in the Association drop-down list.
- 2.4.11. Check the Make Permanent Association check box if required.
- 2.4.12. Make Save on Form Popup Decision.
  - 2.4.12.1. If check box is checked, the system saves the underlying parent record as soon as the popup is rendered.
  - 2.4.12.2. If check box is not checked, the underlying parent record is not saved when the popup is rendered.
- 2.4.13. Make pop-up Form Decision.
  - 2.4.13.1. If a different record type is to be created as a result of this on change event, select the Module of the record to be created from the pop-up module drop-down list.
  - 2.4.13.2. If no record is to be created on this event, leave pop-up module drop-down list field blank.
- 2.4.14. Make Pre-Form Workflow decision.
  - 2.4.14.1. If a WF is required to run against the record being created:
    - 2.4.14.1.1. If yes, select the name of the **SYNCHRONOUS** workflow to be triggered by the event. **(Note: Pre-Form Workflows runs AFTER the record is physically created. Also, Workflows defined as Pre-Form workflows, will run instead of any workflows defined as Pre-Create workflows in the data modeler).**
    - 2.4.14.1.2. If, No, leave parameter blank.
- 2.4.15. Make Post Form Workflow decision.
  - 2.4.15.1. If a workflow is required to be run after the user is finished editing the record created as a result of the pop-up.

- 2.4.15.1.1. If yes, select the name of the SYNCHRONOUS workflow to be triggered by the event. **(Note: This workflow is run after the user causes the newly created record to change to a state other than null and the window closes.)**
- 2.4.15.1.2. **If No, leave parameter blank.**
- 2.4.16. At top of Action Property section, Click OK.
- 2.4.17. Click Apply at top of Form.
- 2.4.18. Click Publish to commit the changes.

**2.5. Given that IBM TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, one or more form sections are created, and one or more fields of type Form Action are created, configure an on-click event for a Form Action field so that this is available as an action button for the end user at runtime.**

SUBTASK(S):

- 2.5.1. Open the Form Builder tool.
- 2.5.2. Select the module where the form you wish to modify exists.
- 2.5.3. Click the hyperlinked text on the form you wish to modify.
- 2.5.4. If the form is in a published state, click Revise.
- 2.5.5. Select the folder next to the form tab where the field you wish to modify exists.
- 2.5.6. Select the window icon of the form section where the field you wish to modify exists.
- 2.5.7. Select the name of the form action field you wish to modify.
- 2.5.8. In the Actions section of the Properties window, click Add.
- 2.5.9. If a pop-up query window is necessary, select the Popup Module from the drop-down list depending on requirements.
  - 2.5.9.1. Select the pop-up query from the drop-down list depending on requirements.
- 2.5.10. Select Single Record Select depending on requirements.
- 2.5.11. Select a Workflow from the drop-down list depending on requirements.
- 2.5.12. Select the Association to be created from this section action depending on requirements.
- 2.5.13. Select Permanent Association depending on requirements.
- 2.5.14. Select Save on Form Popup depending on requirements.
- 2.5.15. If a popup form window is necessary, select the Popup Form Module from the drop-down list depending on requirements.
  - 2.5.15.1. Select the Popup Form from the drop-down list depending on requirements.
  - 2.5.15.2. Select a Pre Form Workflow from the drop-down list depending on requirements.
  - 2.5.15.3. Select a Post Form Workflow from the drop-down list depending on requirements.

- 2.5.16. Click OK in the Action Property section.
- 2.5.17. Click Apply at the top of the form template.
- 2.5.18. Click Publish.

**2.6. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object has been published, and a form created to support the business object, modify the label or name of the form so that after publishing the form the new label and/or name will be available throughout the application.**

SUBTASK(S):

- 2.6.1. Open the Form Builder tool.
- 2.6.2. Select module containing the form from the Module panel on the left.
- 2.6.3. Click on the name of the form to be modified.
- 2.6.4. If the form is in a Published state, then click the Revise link to make it editable.
- 2.6.5. In order to modify the label or name of the form, the form itself must be selected. This is done by clicking on the form name in the Navigation panel. (Note: if the Navigation panel is not visible, it can be accessed by clicking View and then the Navigation drop-down choice. Once selected the form name should be highlighted in the Navigation panel.)
- 2.6.6. Warning: Special consideration should be taken when modifying the form name or label. Modifying the name or label could break functionality in other parts of the system that reference the form. All form touch points/dependencies should be thoroughly reviewed and understood before proceeding with a name or label change.
- 2.6.7. In the Properties panel change the form name and/or label as needed. (Note: if the Properties panel is not displayed it can be accessed by clicking the View link and selecting the Properties drop-down option.)
- 2.6.8. Click the Apply link to commit the changes.
- 2.6.9. Once all modifications are complete, click the Publish link to enable the use of the new form throughout the system.

**2.7. Given that IBM TRIRIGA application and platform are installed, the user has access to Form Builder, a form is created with one or more tabs, import the state transition family into the form so that the form can operate through its designed state transition life cycle at runtime.**

SUBTASK(S):

- 2.7.1. Open the Form Builder tool.
- 2.7.2. Select the module where the form you wish to modify exists.
- 2.7.3. Click the hyperlinked text on the form you wish to modify.
- 2.7.4. If the form is in a published state, click Revise.
- 2.7.5. Click the State Transition tab.
- 2.7.6. Click Find.
- 2.7.7. Select one or more available transitions depending on requirements.

- 2.7.8. Click OK.
- 2.7.9. If you wish to change the properties of a state transition action in the form, click on the transition in question in the state transition screen.
  - 2.7.9.1. Select Read Only to set the form to read only status at this transition depending on requirements.
  - 2.7.9.2. Select Default Display to allow the state transition action to be visible by default depending on requirements.
  - 2.7.9.3. Select Close Window to close the form at this transition depending on requirements.
  - 2.7.9.4. Select Secondary Action to display the action as a secondary item not immediately visible with other non-secondary actions depending on requirements.
  - 2.7.9.5. Repeat for all state transitions you wish to modify properties for.
- 2.7.10. Click Save.
- 2.7.11. Click the Layout tab.
- 2.7.12. Click Publish.

**2.8. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object, form, and any necessary queries have been published/created, create navigation items and collections to be available for menus and/or portals to enable a user to them.**

SUBTASK(S):

- 2.8.1. Open the Navigation Builder tool.
- 2.8.2. Create a Navigation Collection by clicking the Add button.
  - 2.8.2.1. Provide the Navigation Collection with a Name and Label.
  - 2.8.2.2. Provide a Description and Help statement as needed.
  - 2.8.2.3. Designate the type of collection to be created such as Quick Links..
  - 2.8.2.4. Click the Save button to commit the collection.
- 2.8.3. To access the Navigation Items Library click on the Navigation Items Library header at the bottom left of the Navigation Builder tool.
- 2.8.4. Create a Navigation Item to add to the collection by clicking the Add button.
  - 2.8.4.1. Provide the item with a Name and Label.
  - 2.8.4.2. Complete the Help Text information and the Visible in Sitemap only check box as needed.
  - 2.8.4.3. If Dynamic Label are needed, check the check box and complete the Default Query Label information.
  - 2.8.4.4. If the Item will be displayed with an Icon, complete the Icon Details section.
  - 2.8.4.5. In the Target Details section select the Target Type.
  - 2.8.4.6. Complete the necessary details for the selected Target Type. For example if Master/Detail Query type is selected then complete:
    - 2.8.4.6.1. Target Title

- 2.8.4.6.2. Target Name – Module, Business Object and Report
- 2.8.4.6.3. Form - Module and Form (if records need to be created from the item)
- 2.8.4.6.4. Form Properties, check Show Related Reports as necessary
- 2.8.4.6.5. Actions – click the Add button and configure as necessary to add system commands such as Add or Delete to the navigation item.
- 2.8.4.7. Click the Save & Close button to commit the navigation item.
- 2.8.5. Find the newly added Item in the Navigation Items Library, check the selection box for it and then click Add to Collection to add the navigation item to the navigation collection that was previously created/opened.
- 2.8.6. Modify the Navigation Items layout within the Navigation Collection as required.
- 2.8.7. Click the Save and Close button in the upper right to commit the modifications in the Navigation Collection.

**2.9. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, and the applicable Portal exists; customize a portal so that the desired portal has been customized.**

**SUBTASK(S):**

- 2.9.1. Open the Portal Builder tool.
- 2.9.2. Select the desired portal to be customized.
- 2.9.3. Click the Edit button to open the Portal Layout screen.
- 2.9.4. Change the Portal Properties if desired.
  - 2.9.4.1. Change name if desired.
  - 2.9.4.2. Change the Label if desired.
  - 2.9.4.3. Change the Description if desired.
  - 2.9.4.4. Select the Layout drop-down and select the desired column layout for the portal.
- 2.9.5. Adjust the layout of the portal sections if desired
  - 2.9.5.1. Click on and drag-n-drop the desired portal section to the desired location.
    - 2.9.5.1.1. NOTE: A portal section must be adjacent to another portal section.
- 2.9.6. If desired Create and/or add an existing portal section to the portal.
  - 2.9.6.1. Click on the Portal Sections Library title bar to expand the Portal Sections Library.
  - 2.9.6.2. If create a new Portal Section
    - 2.9.6.2.1. Click on the New button.
    - 2.9.6.2.2. Enter a Name.
    - 2.9.6.2.3. Enter a Header.
    - 2.9.6.2.4. Enter a Tooltip if desired.
    - 2.9.6.2.5. Enter a Description if Desired.

- 2.9.6.2.6. Set the various Header properties if desired.
- 2.9.6.2.7. Set a border color if desired.
- 2.9.6.2.8. Set a background image if desired.
- 2.9.6.2.9. Select the Type.
  - 2.9.6.2.9.1. Report contains the results of any IBM TRIRIGA report.
    - 2.9.6.2.9.1.1. Select the report to be displayed with the Query picker.
    - 2.9.6.2.9.1.2. Set the remaining query properties.
  - 2.9.6.2.9.2. External shows the contents of a specified URL.
    - 2.9.6.2.9.2.1. Enter the specified URL in the Url field.
  - 2.9.6.2.9.3. Scorecard contains the result of a metric query measured against the data appropriate for the Workplace Performance Manager user role.
    - 2.9.6.2.9.3.1. Select the Scorecard with the Scorecard picker.
  - 2.9.6.2.9.4. Quick Links display a navigation collection of type Quick Links.
    - 2.9.6.2.9.4.1. Set the view type depending on icon preference.
    - 2.9.6.2.9.4.2. Select the quick links navigation item in the Quick Links Collection drop-down box.
  - 2.9.6.2.9.5. Form - Record Add shows a the specified form for creating a record of the specified type.
    - 2.9.6.2.9.5.1. Set the module in which the desired form exists.
    - 2.9.6.2.9.5.2. Select the Form.
    - 2.9.6.2.9.5.3. Specify a Pre-Create Workflow if desired.
  - 2.9.6.2.9.6. Form - Record View displays an existing record using its form.
    - 2.9.6.2.9.6.1. Set the query to display the records for the desired form.
- 2.9.6.2.10. Click OK to save the Portal Section.
- 2.9.6.2.11. Add the portal section to the portal.
- 2.9.6.3. If adding a portal section to the portal.
  - 2.9.6.3.1. Select the desired portal section.
  - 2.9.6.3.2. Click Add To Portal button.

- 2.9.6.3.3. Arrange portal section on portal as desired.
- 2.9.6.4. Click Save and Close button to save the customized portal.

## Section 3 - Application Workflow

### 3.1. Given a completed functional design document, explain different workflow types so that the determination can be made on the type of workflow to be used.

#### SUBTASK(S):

- 3.1.1. Identify a requirement that requires a workflow.
- 3.1.2. Synch vs. Asynch and the Temporary Data vs. Permanent Data.
- 3.1.3. What is the workflow trigger?
- 3.1.4. If the trigger is a System Event then the workflow must be asynchronous.
- 3.1.5. If the trigger is a Call WF then the workflow must be synchronous or sub flow (a variation of synch).
- 3.1.6. If the trigger is an Action then. . .
  - 3.1.6.1. Can the user wait for the results of the WF?
    - 3.1.6.1.1. Yes > may be asynchronous
    - 3.1.6.1.2. No > must be synchronous
  - 3.1.6.2. Is Temporary Data needed?
    - 3.1.6.2.1. Yes > must be synchronous
    - 3.1.6.2.2. No > then . . .
      - 3.1.6.2.2.1. Is the state transition conditional?
        - 3.1.6.2.2.1.1. Yes > must use Temp Data
      - 3.1.6.2.2.2. Are Temporary Associations needed?
        - 3.1.6.2.2.2.1. Yes > must use Temp Data
      - 3.1.6.2.2.3. Do the changes to the data need to be temporary?
        - 3.1.6.2.2.3.1. Yes > must use Temp Data
    - 3.1.6.2.3. A key to remember is that permanent data will use and write directly to the database.

### 3.2. Given a functional TRIRIGA system and a properly configured user for, create a workflow so that the desired logic is performed.

#### SUBTASK(S):

- 3.2.1. Open Workflow Builder.
- 3.2.2. Click New.
- 3.2.3. Click on Start to set up the workflow.
  - 3.2.3.1. Name the workflow based on **Application Building for IBM TRIRIGA Application Platform guide**.
  - 3.2.3.2. Add an appropriate description.
  - 3.2.3.3. Choose the Concurrence based on the workflow type that has been determined.
    - 3.2.3.3.1. Requirements for an Asynchronous workflow include.
      - 3.2.3.3.1.1. Choosing the appropriate Module and Business Object along with the Event that triggers the workflow.

- 3.2.3.3.1.1.1. Choosing Associate from the Event drop-down will require the Associated Module and Business Object along with the Association type.
    - 3.2.3.3.2. Requirements for a Synchronous workflow include.
      - 3.2.3.3.2.1. Select either Temporary or Permanent data.
      - 3.2.3.3.2.2. Select the appropriate Module and Business Object.
  - 3.2.3.4. Click on Save Workflow Instances for debugging purposes if required.
  - 3.2.3.5. Enter an appropriate Start Condition if required.
    - 3.2.3.5.1. Expand the Module.
    - 3.2.3.5.2. Choose the appropriate field, Operand and Function needed to complete the formula.
- 3.2.4. From the New Task bar choose the appropriate tasks.
  - 3.2.4.1. Data retrieval tasks.
    - 3.2.4.1.1. Query task will allow the user to query for records
      - 3.2.4.1.1.1. Choose the appropriate query from the query link located in the Query Task Properties section.
    - 3.2.4.1.2. Retrieve task will allow the user to retrieve records based on an association.
      - 3.2.4.1.2.1. From the Retrieve section choose the type or record set to be retrieved.
        - 3.2.4.1.2.1.1. List will return the records as a list
        - 3.2.4.1.2.1.2. The record set can also be record(s) with the Greatest or Lease value.
          - 3.2.4.1.2.1.2.1. Choose the specific field to key on by clicking on Choose Field.
        - 3.2.4.1.2.1.3. The record set can also return a field sum by selecting Sum of Field.
          - 3.2.4.1.2.1.3.1. Choose the specific field to Sum by clicking on Choose Field.
      - 3.2.4.1.2.2. The From Records section allows you to choose the type of record by an association.
        - 3.2.4.1.2.2.1. Use it will use associations created at the business object level.
        - 3.2.4.1.2.2.2. Use its Reference will use Smart Section associations.

- .2.4.1.2.2.2.1. Direct associations from records embedded into the current record.
- 3.2.4.1.2.2.3. Use Any Associated created at the record level.
- .2.4.1.2.2.3.1. Choose the appropriate Module, Business Object and Association.
- 3.2.4.1.2.2.4. Use its Parent for Hierarchical Data.
- .2.4.1.2.2.4.1. Select the appropriate Parent from the Pop Up.
- 3.2.4.1.2.3. To set a filter, select the appropriate Module and Task from the Filter Records section.
- 3.2.4.1.2.3.1. Click on Add Filter.
- .2.4.1.2.3.1.1. From the Left Side Data, select the appropriate Section and Field along with the Operator.
- .2.4.1.2.3.1.1.1. The Left Side represents the Module and Task selected in the From Records section.
- .2.4.1.2.3.1.2. From the Right Side Data select the appropriate Type, Section and Field Name.
- .2.4.1.2.3.1.2.1. The Right Side represents the Module and Task selected in the Filter Records section.
- .2.4.1.2.3.1.3. Click OK to save the filter.
- 3.2.4.1.2.3.2. To Delete the filter, select the filter from the listing in Filter Using and click on Delete Filter.
- 3.2.4.1.3. Enter appropriate Labels and descriptions for each task.
- 3.2.4.2. Save Data Tasks.
- 3.2.4.2.1. Workflow must be Synchronous for the following task to show.
- 3.2.4.2.1.1. Get Temp Record is used to create a temporary data store.
- 3.2.4.2.1.1.1. In the Record section the system will default to the Start task.

- 3.2.4.2.1.2. Save Permanent Record is used to save a record.
  - 3.2.4.2.1.2.1. In the Record section the system will default to the Get Temp Record task.
- 3.2.4.2.1.3. Enter appropriate Labels and descriptions for each task.
- 3.2.4.3. Create and Modifying Data Tasks.
  - 3.2.4.3.1. Create Record Task will create a record defined by the Create Task properties.
    - 3.2.4.3.1.1. Select the appropriate Module, Object, and Form.
    - 3.2.4.3.1.2. Select the appropriate Action which will create the Record in that Action's defined State.
    - 3.2.4.3.1.3. Determine the appropriate value for Formulas.
      - 3.2.4.3.1.3.1. Use the default if recalculation is not necessary. Improper use can result in performance issues.
    - 3.2.4.3.1.4. Choose the Appropriate Workflow Activity or Existing Record that will be used to initialize the record from the Initialize section.
    - 3.2.4.3.1.5. To choose a workflow task to initialize the new record select Workflow activity.
      - 3.2.4.3.1.5.1. Select the appropriate business object and task.
    - 3.2.4.3.1.6. To choose an existing record to initialize the new record select Existing record.
      - 3.2.4.3.1.6.1. Choose the appropriate module, business object ,and record.
    - 3.2.4.3.1.7. Click on Edit Map and choose the appropriate mappings.
  - 3.2.4.3.2. Modify Record Task will allow modification of a record defined by the Modify Task properties.
    - 3.2.4.3.2.1. Determine the appropriate value for Formulas.
      - 3.2.4.3.2.1.1. Use the default if recalculation is not necessary. Improper use can result in performance issues.

- 3.2.4.3.2.2. Select the appropriate module and record workflow task as the target from the Map To Records section.
- 3.2.4.3.2.3. Select the appropriate module and record workflow task as the source from the Map From Records section.
- 3.2.4.3.2.4. Click on Edit Map and choose the appropriate mappings.
- 3.2.4.4. Miscellaneous Tasks
  - 3.2.4.4.1. To set/delete Associations select the Association Task.
    - 3.2.4.4.1.1. Select either to Associate or Delete an Association from the Associate Task properties.
      - 3.2.4.4.1.1.1. Selecting either one will require an association to be selected from the icon to the right of the selection.
    - 3.2.4.4.1.2. Determine the appropriate value for Formulas.
      - 3.2.4.4.1.2.1. Use the default if recalculation is not necessary. Improper use can result in performance issues.
    - 3.2.4.4.1.3. Select the appropriate Business Object and Task from the Remove the Association from section.
      - 3.2.4.4.1.3.1. This signifies the left side of the association
  - 3.2.4.4.2. To trigger Asynchronous workflows use the Trigger Action task.
    - 3.2.4.4.2.1. Select the appropriate action from the Trigger Action Task properties
    - 3.2.4.4.2.2. Select the appropriate Task to determine the source record(s) from the Records section.
  - 3.2.4.4.3. To modify metadata choose the Modify data task.
    - 3.2.4.4.3.1. Metadata is always permanent data so the system will default to the Start task.
    - 3.2.4.4.3.2. Select the appropriate Form.
      - 3.2.4.4.3.2.1. The default is commonly used.
    - 3.2.4.4.3.3. Click on Edit Map to select the modifications to the Metadata.
      - 3.2.4.4.3.3.1. Modifications include hiding/displaying Tabs, Sections, Section Actions and Fields.

- 3.2.4.4.4. To use IF/THEN logic select a Switch Task
  - 3.2.4.4.4.1. Create a TRUE/FALSE condition by selecting the Tasks, Operand and appropriate function.
    - 3.2.4.4.4.1.1. If the condition is TRUE then the workflow will travel on the true side of the switch indicated by a circle.
    - 3.2.4.4.4.1.2. If the condition is FALSE then the workflow will travel on the false side of the switch indicated by a square.
    - 3.2.4.4.4.1.3. In the event that the condition is very complex and needs to be swapped from right to left then click on Swap located at the top right of the Switch Condition section.
  - 3.2.4.4.4.2. Select the appropriate workflow tasks and place them on the right and/or left side depending on the requirement.
- 3.2.4.5. Miscellaneous Workflow functions.
  - 3.2.4.5.1. To Publish/Revise a workflow from inside the workflow click on the Start Task and click on Publish.
    - 3.2.4.5.1.1. Publish/Revise can also be triggered from the Workflow listing of the Workflow Builder
      - 3.2.4.5.1.1.1. Revising a Published workflow will copy the current workflow and increment its version.
        - .2.4.5.1.1.1.1. To access the previous version click on List All Versions from the Workflow Builder screen.
        - 3.2.4.5.1.1.2. Publishing an older version creates a new copy in the published state.
  - 3.2.4.5.2. To Copy/Retire select Copy or Retire from the Workflow Builder screen.
    - 3.2.4.5.2.1. Copy will create a copy in the background and append "copy of" to the name of the workflow.
    - 3.2.4.5.2.2. Retire will change the status of the workflow to Retired.
  - 3.2.4.5.3. To view where workflows are used click on Where used from the Workflow Builder screen.

3.2.4.5.4. To view instances of workflows that have ran click on List All Instances from the Workflow Builder screen.

3.2.4.5.5. To view active instances for workflows click on List Active Instances from the Workflow Builder screen.

**3.3. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, review the design of helper objects so that the user is able to perform repeatable processes without the need to design new objects.**

SUBTASK(S):

3.3.1. Open the Data Modeler tool.

3.3.2. Hover over the Object Browser to expose the list of modules.

3.3.3. Click the folder for the triHelper module.

3.3.4. Open a business object in this module, such as triPatchHelper.

3.3.5. If this is not immediately visible, open the Field List, BO State Transition, and Association List. Notice that this is a simple business object design with very few fields, associations and a simple set of state transitions configured.

3.3.6. Open the Form Builder tool.

3.3.7. In the Module list, select triHelper.

3.3.8. Open a form in this module, such as triPatchHelper.

3.3.9. Open the state transition and layout tabs in this form to review the design. Notice that this is a simple form design which includes only the components necessary for a record of this type to be created, along with a state transition action necessary to fire the workflow needed to kick off the background process.

3.3.10. Open the Workflow Builder tool.

3.3.11. Review the list of asynchronous workflows configured to fire on a specific action, such as triCalculate or triProcess. This action is what is typically available on the helper object's form as the only available state transition action.

**3.4. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create a workflow with instance logging turned on so that each time the workflow is run a history or instance of the workflow is saved for investigative purposes.**

SUBTASK(S):

3.4.1. Open the Workflow Builder tool.

3.4.2. In left side pane, Click the plus sign next to the module name the workflow you wish to work with is in.

3.4.3. If the workflow you wish to work with is a module level workflow, click the child node labeled " -Any-".

3.4.4. If the workflow you wish to work with is against a specific business object, click the child node corresponding to the business object name.

- 3.4.5. In the large pane, find the WF you wish to work with and ensure that the workflow is in open and in Revision in Progress status.
- 3.4.6. Click on the Start Condition.
- 3.4.7. Find the Parameter labeled Save Workflow Instances, and Click the check box.
- 3.4.8. Click Publish.

## Section 4 - Utilities

**4.1. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, create an Object Migration Package in the Object Migration tool so that configurations can be ported from one environment to another.**

### SUBTASK(S):

- 4.1.1. Click New Export Package.
- 4.1.2. Enter a Name for the Package \*required information.
- 4.1.3. Enter description.
- 4.1.4. Select Create Mode.
  - 4.1.4.1. Select Empty for smaller OM packages or those that you want to select individual Items for. (Recommended method in the **Application Building for IBM TRIRIGA Application Platform user manual.**)
  - 4.1.4.2. Select Full Package to create an OM package of the entire TRIRIGA Application. **\*\*WARNING:** This process will take a very long time to complete.
  - 4.1.4.3. Select By Date to allow the application itself to preloaded with object modified after a certain date (Some objects within the TRIRIGA application do NOT contain Modified By Dates, so this method is not recommended for use).
    - 4.1.4.3.1. Select a date from the Date picker.
- 4.1.5. Click Create Package..
- 4.1.6. Find Objects required to be included in the Object Migration package.
- 4.1.7. Place check mark against all required objects.
- 4.1.8. Click Add Selected Objects..
- 4.1.9. Repeat as required for additional objects that have been added.
  - 4.1.9.1. Note: It is not recommended to add record data as record level associations are not maintained by the migration package.
- 4.1.10. Click Save.
- 4.1.11. Click Export.
- 4.1.12. Click Wait.
- 4.1.13. Click Save.

**4.2. Given that IBM TRIRIGA application and platform are installed, the user has an application builder license, and a business object and form has been published, create a data integrator input file so that data can be loaded or updated within the TRIRIGA system.**

### SUBTASK(S):

- 4.2.1. Open the Data Integrator tool.
- 4.2.2. Select the module, business object, and form of the type of data to be imported.

- 4.2.3. Click the Create Header link. (Note: The other options matter in the import process, however do not impact the file header creation process.)
- 4.2.4. Within the pop-up window select each field that should be included in the import process and then click the Export link. Note the following considerations:
  - 4.2.4.1. Control number is normally not included as it will prevent the import process from updating records allowing only for the generating of new records.
  - 4.2.4.2. Fields in the Published Name should be the first fields listed if the DI process will be used to update records.
  - 4.2.4.3. Required fields should be included unless they are being address via an upload process associated workflow.
  - 4.2.4.4. Image fields may be included but will require pre-staging of the images in a known server file location for mapping within the DI file.
- 4.2.5. Save the created file.
- 4.2.6. Open the file in an editing program of choice. Spreadsheet programs generally make for the easiest modifications, despite the xls extension it is a tab delimited file.
- 4.2.7. The field headers have been created based on the selections made earlier. Data may now be placed under the headers. (Note: normal data validation will be bypassed by this process. For example, this allows for list values to be used that are not currently valid entries in the List setup. This allows the developer some flexibility in uploading the data with values that may have been previously retired. This also has the drawback of allowing corrupt data to be migrated.)
- 4.2.8. If the upload will be an associated upload then:
  - 4.2.8.1. An addition column with the word Associate should be added.
  - 4.2.8.2. Two blank rows should be added under the header row.
  - 4.2.8.3. Under the word Associate the value %%Module:BO%% should be placed to signify the module and BO from which the association will be made. For example %%triProject:triCapitalProject%%.
  - 4.2.8.4. Under that entry the association string used in the relationship should be entered also enclosed in the %% symbols, for example, %%Temporary%%.
  - 4.2.8.5. In the data section, the record name (published name) of the record the association will originate from will be recorded.
- 4.2.9. Some additional considerations when creating a DI file:
  - 4.2.9.1. Although fields can be populated and associated uploads can be done as noted in step 8, references cannot be created by the DI process. Any references would need to be created by a workflow hooked to the DI process.
  - 4.2.9.2. Workflows are also needed to do any data validation. Unlike Data Connect, Data Integrator does not have access to a temporary state, therefore the data will be pushed into the

system and the workflows need to manage the segregation of invalid records from an upload process.

4.2.10. Once the data has been populated into the DI file it must be saved as a tab-delimited, text file for use in the Data Integrator tool.

**4.3. Given that IBM TRIRIGA application and platform are installed and the user has an application builder license, and the target object and fields of the DI file exist, import the DI file so that the specified DI file is processed and records are created or modified.**

SUBTASK(S):

4.3.1. Create the Data Integrator Input file.

4.3.1.1. See task Create data integrator input file for details.

4.3.2. Open the Data Integrator Utility.

4.3.3. Set the module drop down to the module of the target business object of the DI file.

4.3.4. Set the business object drop down to the target business object of the DI file.

4.3.5. Set the Form drop down to the desired form for the target business object of the DI file.

4.3.6. Leave Import Type drop-down to its default of Add.

4.3.6.1. NOTE: even though it says add, if a row contains values for a record's Publish Name fields that match an existing record, the other values in the row are used to update the record. Otherwise a new record is created.

4.3.7. Set the action drop down to the state transition that is to be triggered by the data load.

4.3.8. Leave the File Type drop down to its default of Tab Delimited (\*.txt).

4.3.9. Set the File Char Set drop down if required.

4.3.9.1. NOTE: This needs to be set to the character set in which the file being imported was written.

4.3.10. Click Upload File.

4.3.11. Click OK.

**4.4. Given that IBM TRIRIGA application and platform are installed, the user has access to the Document Manager, and proper permissions on the target folder to create a document record, import a document from your local file system so that the document is available for use in the TRIRIGA system.**

SUBTASK(S):

4.4.1. Open the Document Manager tool.

4.4.2. Navigate to the target folder by using the hierarchy tree in the Document Management section.

4.4.3. Select the text for the target folder you wish to work with.

4.4.4. If you wish to import a single document at a time, click New Document.

- 4.4.4.1. Click Browse.
- 4.4.4.2. Navigate to the document you wish to import from your local file system.
- 4.4.4.3. Select the document file.
- 4.4.4.4. Click Open.
- 4.4.4.5. If necessary, modify the Document Name field.
- 4.4.4.6. If necessary, provide a value in the Document Number, Description, and/or Comment field(s).
- 4.4.4.7. Click Upload.
- 4.4.4.8. Wait for the confirmation of the upload process completion.
- 4.4.4.9. Click OK.
- 4.4.5. If you wish to import multiple documents at the same time, click Toggle Multifile to open the upload prompt window.
  - 4.4.5.1. Click Select Files.
  - 4.4.5.2. Navigate to the documents you wish to import from your local file system.
  - 4.4.5.3. Select the document files in a group by holding the Ctrl key while clicking on each file.
  - 4.4.5.4. Click Open.
  - 4.4.5.5. Repeat steps for all additional files you wish to upload.
  - 4.4.5.6. Click Upload.
  - 4.4.5.7. Wait for the confirmation of the upload process completion.
  - 4.4.5.8. Click OK.
  - 4.4.5.9. Click Toggle Multifile to close the upload prompt window.

## **Section 5 - Application Administration**

**5.1. Given that IBM TRIRIGA application and platform are installed, user with adequate security to access the Security Manager tool, configure a security group so that security group members have the desired level of access on a form's sections and actions.**

### **SUBTASK(S):**

- 5.1.1. Open the Security Manager tool.
- 5.1.2. Open the security group to be modified. (Note: Do not make changes to the Admin group as it is not subject to the same security processing as the other groups.)
- 5.1.3. Set the following settings on the General tab.
  - 5.1.3.1. Set a value for System Organization if using organization level security.
  - 5.1.3.2. Set a value for System Geography if using geography level security.
- 5.1.4. Set the users that are members of the security group on the Members tab.
- 5.1.5. Set the appropriate access on the Access tab.
- 5.1.6. Save and close the security group in order for the changes to be preserved.

**5.2. Given that IBM TRIRIGA application and platform are installed, the user is a part of the Admin group, and the user has access to Admin Console, use the Cache Manager to clear cache for various platform components.**

### **SUBTASK(S):**

- 5.2.1. Log in to the Admin Console.
- 5.2.2. Go to the Cache Manager page.
- 5.2.3. Click the State Data action if you modify any state family.
- 5.2.4. Click the Security Scope action if you make changes to any geography, organization, or groups within groups.
- 5.2.5. Click the Workflows For Agent action to refresh the workflow templates for the agents if workflow templates have been modified.
- 5.2.6. Click the UOM Data link if you create a new UOM, edit an existing one, or delete a Measure.
- 5.2.7. Click the Portal Logo link if the dimensions for the portal logo has been modified.
- 5.2.8. Click the Query Cache link to refresh the Query Data if report templates have been modified.
- 5.2.9. Click the Object MetaData Cache link if the Object MetaData settings have been modified.
- 5.2.10. Click the Extended Formula Cache link if you modified any Extended Formulas.

- 5.2.11. Click the Password Type Cache if the Password Type settings have been modified.
- 5.2.12. Click the Hierarchy Tree Data link to refresh the hierarchy cache by clearing all trees in the hierarchy cache if there are changes to the hierarchy data structures. This will not rebuild any hierarchies.
- 5.2.13. Click the Hierarchy Tree Data - with rebuild link if you wish to refresh the hierarchy cache by clearing all trees in the hierarchy cache, and rebuilding the hierarchies for geography, organization and location. This should be done as a troubleshooting step and only if directed to do so by IBM Support. Note, if these trees are large, this could take some time.
- 5.2.14. Click the Custom ClassLoader Data link if you wish to clear any cached Custom ClassLoader components and forces a refresh.
- 5.2.15. Click the All Caches (Global) link to refresh each cache globally across all active servers (does not include a full hierarchy rebuild). This occurs asynchronously and may take a minute to process.
- 5.2.16. Wait until the confirmation message appears to confirm that the cache in question has been flushed.

**5.3. Given that IBM TRIRIGA application and platform are installed, the user has admin console access, monitor workflow from within the admin console so that Admin console user can utilize the admin console to monitor a variety of workflow activities which can be critical in evaluating workflow issues.**

**SUBTASK(S):**

- 5.3.1. Log in to the admin console.
- 5.3.2. Workflow monitoring activities that can be done within the admin console:
  - 5.3.2.1. WF Agent status and server(s) can be evaluated on the Agent Manager page.
  - 5.3.2.2. WF Agent maximum threads can be evaluated on the Threads Manager page.
  - 5.3.2.3. WF Agent user specific settings are found on the Workflow Agent Manager page.
  - 5.3.2.4. Scheduled event triggered workflows are triggered by which user is designated on the Workflow Agent Manager page.
  - 5.3.2.5. Workflow Instance recording can be toggle from the Workflow Agent Manager page.
  - 5.3.2.6. On the Workflow Events page you can view processing workflows by selecting the appropriate link to view Workflow events by:
    - 5.3.2.6.1. User
    - 5.3.2.6.2. Type of Event
    - 5.3.2.6.3. Type of Event by User
    - 5.3.2.6.4. Oldest Event in Queue
    - 5.3.2.6.5. Currently Executing Events

- 5.3.2.7. Currently running or suspended workflows can be viewed on the Workflows Executing page.
  - 5.3.2.7.1. Suspended workflows can be resumed by selecting the workflow and clicking the Resume link.
  - 5.3.2.7.2. Running workflows can be stopped or suspended by selecting the workflow and clicking the Stop or Suspend link respectively.
- 5.3.3. Additional monitoring can be done directly in the server log.

**5.4. Given that IBM TRIRIGA application and platform are installed, the user is a part of the Admin group, and the user has access to Admin Console, use the Platform Logging tool to enable debug logging for parts of or all platform functionality.**

**SUBTASK(S):**

- 5.4.1. Log in to the Admin Console.
- 5.4.2. Go to the Platform Logging page.
- 5.4.3. If you wish to enable debug logging, select one or more items from the Category list for the platform functionality you wish to configure debug logging for.
  - 5.4.3.1. Click Apply.
- 5.4.4. If you wish to disable debug logging, deselect the items from the Category list that you wish to stop the debug logging for.
  - 5.4.4.1. Click Apply.
- 5.4.5. If you wish to post a custom message to the log, type a message in the Write to log field. This message will display as an INFO message.
  - 5.4.5.1. Click Write.
- 5.4.6. If desired the server log can be rolled by category by clicking the roll log image/link next to the appropriate category.
- 5.4.7. Monitor the server.log file as the system is in use and the platform functionality configured in Platform Logging is leveraged.