**Actors Prompt:**

An engineer is working on a set of user stories enclosed between triple back ticks.

``` As an app developer, I want to deploy a new version of a dataset type as part of an app artifact, without affecting other datasets of this type.

As an app developer, I want to explore a dataset instance of a type that was deployed as part of an app.

As an app developer, I want to ensure that when I deploy an artifact without creating an app this will not create any dataset types or instances.

As an app developer, I want to share a dataset type across multiple applications that include the dataset type's code in their artifacts.

As an app developer, I want to ensure that when I deploy a new version of an app that includes a shared dataset type that all dataset instances created by this app start using the new code but all dataset instances created by other apps remain unchanged.

As an app developer, I want to ensure that when I deploy a new version of an app that includes an older version of a dataset type deployed by another app and I expect that the dataset instances created by this app use the dataset type code included in this app.```

He created an initial goal model with the intentional elements enclosed between triple quotes:

‘’’

- 'Actors':

-app developer

-dataset developer

-user

-plugin developer

- 'Goals':

-share operations conducted

-explore operations conducted

-ensure operations conducted

-deploy operations conducted

-deploy operations conducted

-include operations conducted

-ensure operations conducted

-a dataset type shared

-ensure an artifact

-ensure a new version

-explore a dataset instance

-deploy a new version

-deploy a dataset type

-the code included

-ensure a dataset

'''

The created model is missing many intentional elements. Let us refine the goal model step by step. First, can you list all 'Actors' for the user stories enclosed between triple back ticks. An initial set of actors are added in the enclosed between triple quotes. You must also identify any missing and implicit actors. It is critical that you answer only as a bulleted list and do not include any explanation.

app developer

* dataset developer
* user
* plugin developer
* system
* other app developers

**Goals**

The initial goal model does not contain all the stakeholder’s objectives or goals that are conveyed in the user stories enclosed between triple back ticks. Identify any goals explicitly mentioned in the user stories enclosed between triple back ticks as well as any implicit goals. It is critical that you answer only as a bulleted list and do not include any explanation.

* Share dataset types across multiple applications
* Explore dataset instances
* Ensure artifact deployment without affecting other datasets
* Ensure new artifact deployment does not create new dataset types or instances
* Ensure dataset instances use new code when deploying a new app version
* Expect dataset instances to use corresponding dataset type code when updating an app version

**IE Links for Goals**

Connect the goals from the previous step to the actors. It is critical that you answer only as a bulleted list that adheres to the following format.

<a actor>: <a hyphenated list of associated goals>

Do not include any explanation.

**Tasks for Goals**

Please provide a detailed breakdown of tasks for each of the following goals, created in the previous response. It is critical that you answer only as a bulleted list that adheres to the following format.

<a goal>: <a hyphenated list of tasks to achieve the goal>

Do not include any explanation.

Share dataset types across multiple applications:

* + Develop a mechanism for sharing dataset types
  + Implement dataset type inclusion in application artifacts

Explore dataset instances:

* + Provide functionality to explore dataset instances

Ensure artifact deployment without affecting other datasets:

* + Implement isolated deployment of dataset types

Ensure new artifact deployment does not create new dataset types or instances:

* + Develop validation checks during artifact deployment

Ensure dataset instances use new code when deploying a new app version:

* + Implement code update mechanism for dataset instances

Expect dataset instances to use corresponding dataset type code when updating an app version:

* + Develop compatibility checks for dataset instances and deployed dataset types

**IE Links for Tasks of Goals**

Connect the tasks of goals from the previous step to the actors. It is critical that you answer only as a bulleted list that adheres to the following format.

<a actor>: <a hyphenated list of associated tasks of goals>

Do not include any explanation.

**Soft Goals**

Next, there are no soft goals in the initial goal model. Please suggest soft goals. Note you must identify any soft goals explicitly mentioned in the user stories enclosed between triple back ticks as well as any implicit soft goals. It is critical that you answer only as a bulleted list and do not include any explanation.

* Ensure seamless dataset sharing across applications
* Facilitate efficient exploration of dataset instances
* Maintain data integrity during artifact deployment
* Ensure backward compatibility for dataset instances
* Enhance code security for dataset types and instances

**IE Links for Soft Goals**

Connect the soft goals created in the previous step to the actors. It is critical that you answer only as a bulleted list that adheres to the following format.

<a actor>: <a hyphenated list of associated soft goals>

Do not include any explanation.

**Tasks for Soft Goals**

Next, the initial goal model misses different tasks that can be undertaken to achieve goals and soft goals.

Please provide a detailed breakdown of tasks for each soft goal created in the previous response. You can generate a variable number of tasks for soft goals. It is critical that you answer only as a bulleted list that adheres to the following format.

<a soft goal>: <list of tasks to achieve the soft goal>

Do not include any explanation.

Ensure seamless dataset sharing across applications:

* + Develop a mechanism for dataset type registration
  + Implement dataset type inclusion in application artifacts
  + Establish communication protocol for dataset sharing

Facilitate efficient exploration of dataset instances:

* + Design user interface for dataset exploration
  + Implement search and filter functionalities for dataset instances
  + Provide detailed metadata for each dataset instance

Maintain data integrity during artifact deployment:

* + Perform data validation checks before deployment
  + Implement rollback mechanism in case of deployment failures
  + Ensure data consistency across different artifact versions

Ensure backward compatibility for dataset instances:

* + Develop compatibility checks for different dataset versions
  + Implement data migration procedures for updated dataset instances
  + Provide user guidance on dataset instance updates

Enhance code security for dataset types and instances:

* + Implement encryption mechanisms for dataset code
  + Establish access control for dataset instances
  + Conduct security audits on dataset handling operations

**IE Links for Tasks of Soft Goals**

Connect the tasks of soft goals from the previous step to the actors. It is critical that you answer only as a bulleted list that adheres to the following format.

<a actor>: <a hyphenated list of associated tasks of soft goals>

Do not include any explanation.

**Contribution Links**

The Contributionrelationship statement describes how softgoals, task, believes, or links contribute to the satisficing of another intentional element. The five categories of Contribution Links are enclosed between triple back-ticks symbols.

``` MAKE : The contribution of the contributing element is positive and sufficient. BREAK : The contribution of the contributing element is negative and sufficient. HELP : The contribution of the contributing element is positive but not sufficient. HURT : The contribution of the contributing element is negative but not sufficient. EQUAL : There is equal contribution in both directions. ```

Please suggest different contribution links to link all the intentional elements such as, goals, soft goals, Tasks, and Resources that you identified. Note you must identify any contributions links that explicitly mentioned in the user stories enclosed between triple back ticks as well as any hidden contribution links. It is critical that you answer only as a bulleted list that adheres to the following format.

<Contribution Link Category>::<Source intentional elements> : <Destination intentional elements>

* MAKE::Develop a mechanism for dataset type registration : Share dataset types across multiple applications
* MAKE::Implement dataset type inclusion in application artifacts : Share dataset types across multiple applications
* HELP::Develop a mechanism for dataset type registration : Facilitate efficient exploration of dataset instances
* HELP::Implement dataset type inclusion in application artifacts : Facilitate efficient exploration of dataset instances
* MAKE::Establish communication protocol for dataset sharing : Share dataset types across multiple applications
* MAKE::Design user interface for dataset exploration : Facilitate efficient exploration of dataset instances
* HELP::Implement search and filter functionalities for dataset instances : Facilitate efficient exploration of dataset instances
* MAKE::Develop validation checks during artifact deployment : Maintain data integrity during artifact deployment
* MAKE::Perform data validation checks before deployment : Maintain data integrity during artifact deployment
* MAKE::Implement rollback mechanism in case of deployment failures : Maintain data integrity during artifact deployment
* HELP::Ensure data consistency across different artifact versions : Maintain data integrity during artifact deployment
* MAKE::Develop compatibility checks for different dataset versions : Ensure backward compatibility for dataset instances
* MAKE::Implement data migration procedures for updated dataset instances : Ensure backward compatibility for dataset instances
* HELP::Provide user guidance on dataset instance updates : Ensure backward compatibility for dataset instances
* MAKE::Implement encryption mechanisms for dataset code : Enhance code security for dataset types and instances
* MAKE::Establish access control for dataset instances : Enhance code security for dataset types and instances
* HELP::Conduct security audits on dataset handling operations : Enhance code security for dataset types and instances

**Dependencies Links**

The Dependency statement of GRL describes an intentional relationship between two actors, i.e., one actor (the Depender) depends on another actor (the Dependee) on something (the Dependum). Noite that the dependum is optional.

Please suggest different Dependency links to link all the intentional elements such as, goals, soft goals, Tasks, and Resources that you identified. Note you must identify any Dependency links that explicitly mentioned in the user stories enclosed between triple back ticks as well as any hidden Dependency links. It is critical that you answer only as a bulleted list that adheres to the following format.

<Depender> DEPENDES-ON <Dependee> FOR <Dependum>

* Develop a mechanism for dataset type registration DEPENDS-ON Establish communication protocol for dataset sharing
* Implement dataset type inclusion in application artifacts DEPENDS-ON Share dataset types across multiple applications
* Provide functionality to explore dataset instances DEPENDS-ON Facilitate efficient exploration of dataset instances
* Perform data validation checks before deployment DEPENDS-ON Maintain data integrity during artifact deployment
* Develop compatibility checks for different dataset versions DEPENDS-ON Ensure backward compatibility for dataset instances
* Implement encryption mechanisms for dataset code DEPENDS-ON Enhance code security for dataset types and instances

**Resources**

**Not used because Dependum identified in the previous prompt are the resources.**

A resource is an (physical or informational) entity, with which the main concern is whether it is available. The initial goal model with the intentional elements enclosed between triple quotes does not have resources. Identify resources that are explicitly mentioned in the user stories enclosed between triple back ticks as well as any implicit resources. It is critical that you answer only as a bulleted list and do not include any explanation.



**Decomposition Links**

DECOMPOSITON statement provides the ability to define what other elements need to be achieved or available in order for a task to perform. Note that only Task and Goal can be decomposed into goal, task, resource, and softgoal. A Task Decomposition Structure shows the essential components of a task, which include subtasks that must be performed, subgoals that must be achieved, resources that must be accessible, and softgoals that must be satisfied. Similarly, a Goal Decomposition Structure connects a goal with its sub-goals directly, which is a short hand form of one Goal Means\_Ends Structure and the related Task Decomposition Structure.  The three categories of Decomposition Links are enclosed between triple back-tick symbols.

``` AND DECOMPOSITON: The relations between the dependent elements are “AND”. Each of the sub-components are necessary. OR DECOMPOSITON : The relations between the contributing elements are “OR”. Any of the sub-components is sufficient. XOR DECOMPOSITON: The relations between the contributing elements are “XOR”. Either of the sub-components are necessary, but not both. ```

Please suggest different Decomposition links to link all the intentional elements such as, goals, soft goals, Tasks, and Resources that you identified. Note you must identify any Decomposition links that explicitly mentioned in the user stories enclosed between triple back ticks as well as any hidden Decomposition links. It is critical that you answer only as a bulleted list that adheres to the following format.

< Decomposition Type>::<Source intentional elements> : <Destination intentional elements>

* AND DECOMPOSITION::Share dataset types across multiple applications : Develop a mechanism for dataset type registration
* AND DECOMPOSITION::Share dataset types across multiple applications : Implement dataset type inclusion in application artifacts
* AND DECOMPOSITION::Facilitate efficient exploration of dataset instances : Provide functionality to explore dataset instances
* AND DECOMPOSITION::Maintain data integrity during artifact deployment : Perform data validation checks before deployment
* AND DECOMPOSITION::Ensure backward compatibility for dataset instances : Develop compatibility checks for different dataset versions
* AND DECOMPOSITION::Enhance code security for dataset types and instances : Implement encryption mechanisms for dataset code

**Generate XML using Fewshot examples:**

Please create an XML that includes all the outputs that you generated so far. An example of the right output is shown between triple back ticks.

```

<?xml version='1.0' encoding='ISO-8859-1'?>

<grl-catalog catalog-name="URNspec" description="" author="vaish">

<element-def>

<intentional-element id="72" name="Car objects" description="" type="Ressource" decompositiontype="And"/>

<intentional-element id="80" name="Easy to use" description="" type="Softgoal" decompositiontype="And"/>

<intentional-element id="82" name="Realistic simulation" description="" type="Softgoal" decompositiontype="And"/>

<intentional-element id="84" name="Simple design" description="" type="Softgoal" decompositiontype="And"/>

<intentional-element id="88" name="Generate cars" description="" type="Goal" decompositiontype="And"/>

<intentional-element id="96" name="Create new cars" description="" type="Task" decompositiontype="And"/>

<intentional-element id="98" name="Keep same cars" description="" type="Task" decompositiontype="And"/>

</element-def>

<link-def>

<contribution name="Contribution105" description="" srcid="96" destid="82" contributiontype="Unknown" quantitativeContribution="0" correlation="false"/>

<contribution name="Contribution106" description="" srcid="96" destid="84" contributiontype="Unknown" quantitativeContribution="0" correlation="false"/>

<decomposition name="Decomposition111" description="" srcid="96" destid="88"/>

<decomposition name="Decomposition114" description="" srcid="98" destid="88"/>

<dependency name="Dependency116" description="" dependerid="88" dependeeid="72"/>

</link-def>

<actor-def>

<actor id="11" name="Traffic Simulator" description=""/>

</actor-def>

<actor-IE-link-def>

<actorContIE actor="11" ie="72"/>

<actorContIE actor="11" ie="80"/>

<actorContIE actor="11" ie="82"/>

<actorContIE actor="11" ie="84"/>

<actorContIE actor="11" ie="88"/>

<actorContIE actor="11" ie="96"/>

<actorContIE actor="11" ie="98"/>

</actor-IE-link-def>

</grl-catalog>

```

The generated XML must adhere to the below list of criteria.

• No duplicate values for 'name' attribute in XML

• No duplicate values for 'id' attribute? in XML

• No empty string as a value for 'name' attribute

• If you include Date attributes 'modified' and 'created', the values of 'modified' attribute must be greater than the value of 'created' attribute

• The XML must not have an empty grl-catalog element

• Do not add elements outside the section named 'grl-catalog'

• In the XML, element named 'intentional-element' must have non-empty values for following attributes- name, id, type

• XML must have section 'actor-def' consisting of actors

• In the XML, each actor element has an 'id' attribute. Do not use the value of 'id' attribute of an actor element as the value for 'srcid' or 'destid' attributes within the section named 'link-def'

• XML must have a section with title 'actor-IE-link-def'

• Within the section with name 'actor-IE-link-def', no two elements with different value for 'actor' attribute, have same value for 'ie' attribute"

• For an element named 'intentional-element', the value for the attribute 'type' of the tag must be one of the following values - Task, Goal, Softgoal, Resource, Belief?"

• For an element named 'intentional-element', the value for the attribute 'decompositiontype' of the tag must be one of the following values - AND, OR, XOR

• For an element with name 'contribution', the value for the attribute 'contributiontype' of the tag must be one of the following values- Make, Help, Break, Hurt

• For an element with name 'contribution', the values for attributes- srcid and destid, in each tag must be different

• Each element with name 'contribution', must have attribute 'srcid' and its value must not be empty string

• Each element with name 'contribution' must have attribute 'destid' and its value must not be empty string

• Each element with name 'decomposition' must have attribute 'srcid' and its value must not be empty string

• Each element with name 'decomposition' must have attribute 'destid' and its value must not be empty string

• Each element with name 'decomposition', must have different the values for attributes- 'srcid' and destid'