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IBM Rational Unified Process Reference and Certification Guide

Solution Designer

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Synchronization bars show possible parallelism among the activities. The arrows on the links show the order between the process elements.

Activity Detail Diagram

The activity detail diagram gives a visual overview of the task descriptors within an activity, the responsible role descriptors associated with the task descriptors, and the input and output work product descriptor. The two diagrams in Figure 4-2 show for each responsible role horizontally (in the example, the Process Engineer and the Tool Specialist) the list of task descriptors in the activity and vertically the flow of work product descriptors. A **descriptor** is basically a reference object inside a process that represents the occurrence of a method content element, such as a task or work product inside an activity. It has its own relationships and documentation that defines the difference between the default implementation and this particular occurrence of the element in the process.

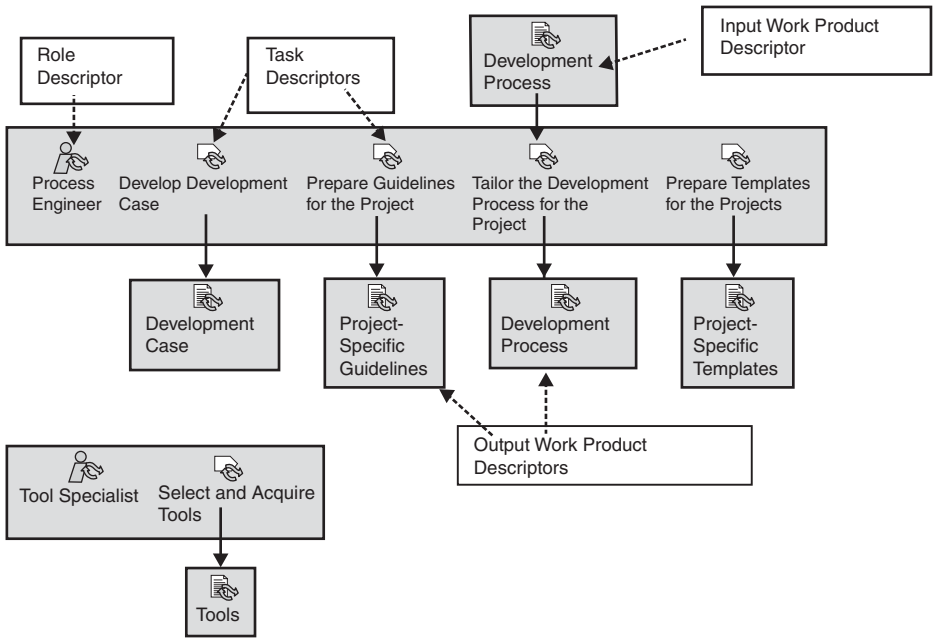

Figure 4-2 Sample activity detail diagram

Work-Product Dependency Diagram

The work-product dependency diagram (see Figure 4-3) illustrates the relationships and dependencies among various work products.

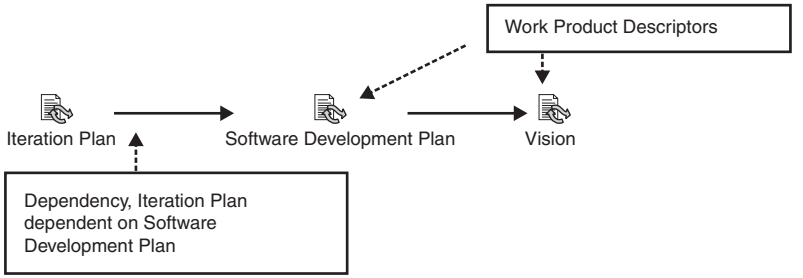

Figure 4-3 Work-product dependency diagram sample

Descriptors

To utilize the same content elements in different aspects of process elements (for example, capability patterns), use the common concept called descriptors. These descriptors replace the actual content element (role, task, and work-product) in the context of the activity in which the element was accessed. Therefore, within work breakdown structures, you use role descriptors, task descriptors, and work-product descriptors. The advantage of using descriptors over content elements is that you can adjust the used content element (role, task, or work-product) to the current situation without changing the actual source of the content. Also, a task descriptor, for example, can remove steps from a task, making content elements more versatile when processes are assembled. The user, however, will always be able to track back from the descriptor to the content element to which the descriptor refers. Therefore, all the roles, tasks, and work-products used in Figure 4-2 and Figure 4-3 are actually the descriptors of the element, not the element itself.

There are three kinds of descriptors: Work Breakdown descriptors, Role descriptors, and Task descriptors. Each of them shares the following attributes important for process authoring:

- **isPlanned**—Indicates whether a breakdown element is marked for inclusion in a generated project plan.
- **hasMultipleOccurances**—Indicates whether a breakdown element is generated multiple times, maybe even in parallel.
- **isOptional**—Indicates whether the breakdown element is optional or mandatory when a project is carried out.

Furthermore, the task descriptor contains three additional attributes:

- **isRepeatable**—Indicates whether a breakdown element (for example, a task descriptor) is expected to repeat sequentially over the same set of work-products (for example, an iteration).
- **isEventDriven**—Indicates whether a certain event has to occur before the planned element is performed. Without the event, the work does not need to be done. For example, an event issuing a change request triggers tasks that deal with the change request.

- **isOngoing**—Indicates whether the element has no exact duration and has to be continuously planned for. For example, the Project Management Office might periodically check the compliance of a project to a certain standard.

> **TIP**
>
> Knowledge about the breakdown element attributes is important for process engineers who need to align the content elements with the process depending on a project situation. Questions about the attributes, however, are not part of the exam.

Summary

The basic process elements align the content elements introduced in the previous chapter to a time sequence. This chapter defined the terms activity, phase, iteration, delivery process, capability pattern, and milestone. In addition, it discussed the process package to organize and group these elements. Visualization is an important aspect of reviewing and sharing processes. The workflow diagram, activity detail diagram, and work-product dependency diagram are the potential choices. Last, but not least, this chapter covered the role of descriptors and their attributes. With their help, the process engineer can more easily generate project plans with a variety of flavors of the referenced content element, without actually changing the content element.

Sample Questions

You can find the correct answers to these questions in the Appendix, "Answers to Sample Questions."

1. Which type of process element is used to describe a phase?
   a. Activity Descriptor
   b. Task
   c. Activity
   d. Task Descriptor
2. Which of the following is a process element? (Select all that apply.)
   a. Capability Pattern
   b. Activity
   c. Roadmap
   d. Delivery Process
3. Which of the following is a delivery process in RUP for large projects?
   a. Classic RUP lifecycle
   b. Supporting process with tools
   c. Delivery Process
   d. Capability Pattern

4. Which of the following is a valid descriptor? (Select all that apply.)
   a. Task Descriptor
   b. Role Descriptor
   c. Activity Descriptor
   d. Work-Product Descriptor

5. Which process element can you place in a process package? (Select all that apply.)
   a. Capability Pattern
   b. Activity
   c. Delivery Process
   d. Milestone

6. Which statement is true about descriptors? (Select all that apply.)
   a. Descriptors replace content elements in the work-breakdown structure.
   b. Descriptors point back to their referenced content element.
   c. Descriptors modify the content element.
   d. Descriptors are rarely used.

7. As a process engineer, you are asked to provide a process lifecycle to Project X. You start from scratch to design a process lifecycle for Project X, but then you realize that the process lifecycle of the project you are coming off of, Project Y, is only slightly different. You could re-use aspects of Project Y. To promote re-use, to which element of Project Y would you direct your attention?
   a. Descriptors
   b. Capability Patterns
   c. Work-Product Dependency diagram
   d. Classic RUP Lifecycle

8. Which of the following is a notational element used in a workflow diagram? (Select all that apply.)
   a. Link
   b. Activity
   c. Synchronization bar
   d. Task

9. An activity detail diagram contains which of the following? (Select all that apply.)
   a. Activities
   b. Task Descriptors
   c. Role Descriptors
   d. Milestones

10. Which of the following process elements is a special representation of an activity? (Select all that apply.)
    a. Phase
    b. Activity Detail
    c. Task
    d. Iteration

References

IBM Rational Unified Process v7.0.

Part III

Rational Unified Process: Content and Process Elements