

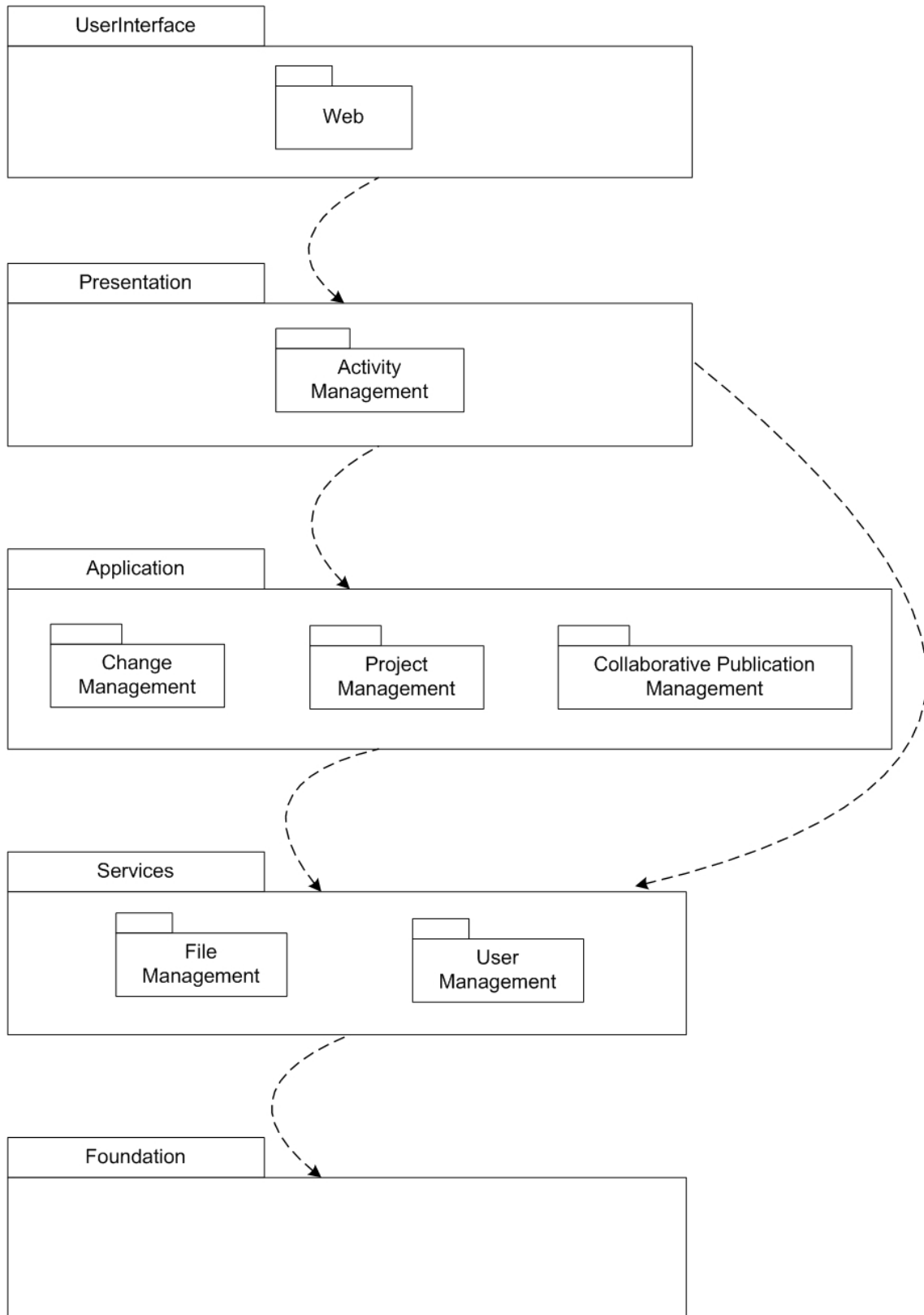


COMP 6471: Software Design Methodologies
Winter 2006

Assignment 4
Component 6
Project Management System

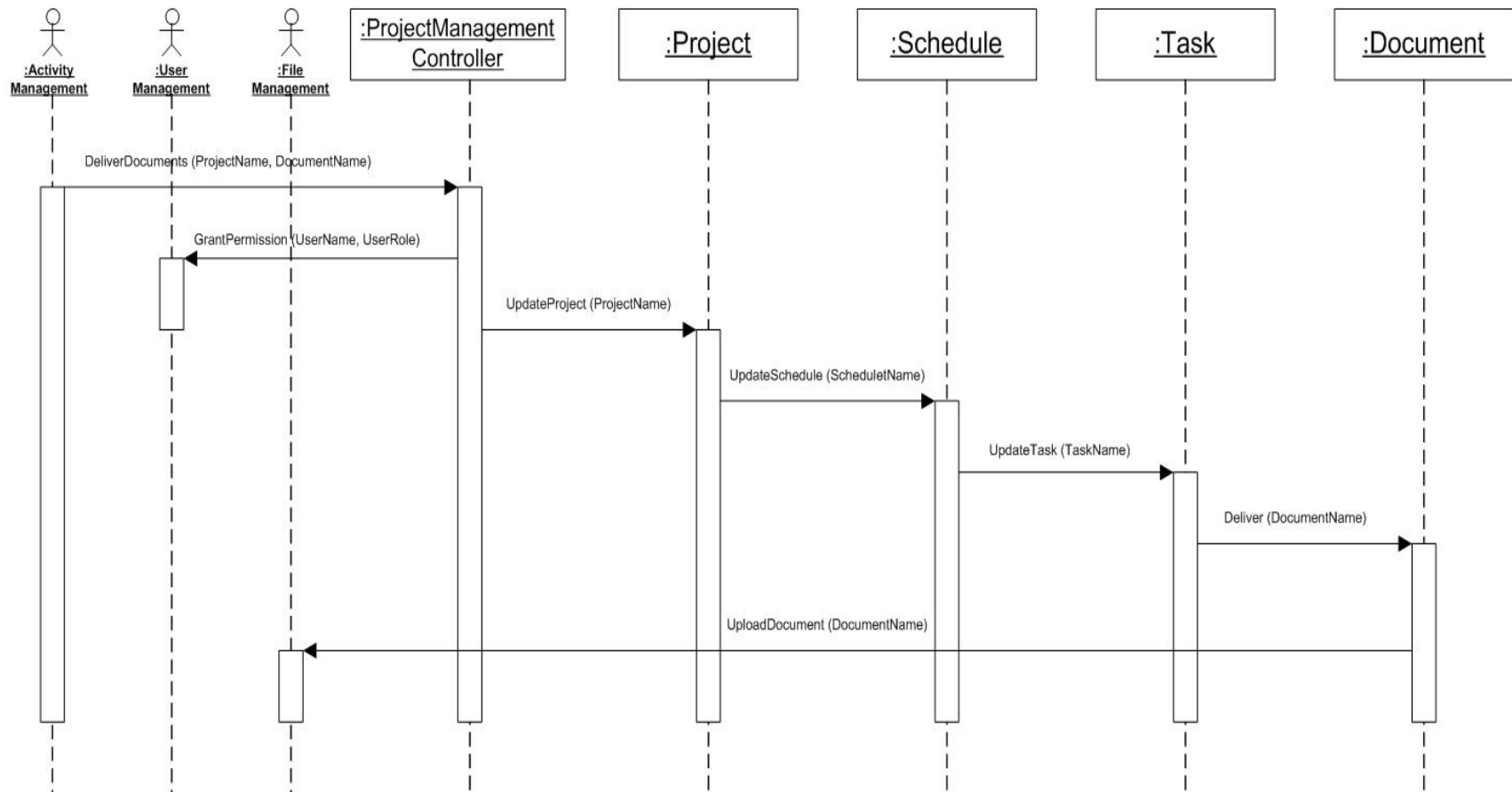
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Part 1: Package Diagram

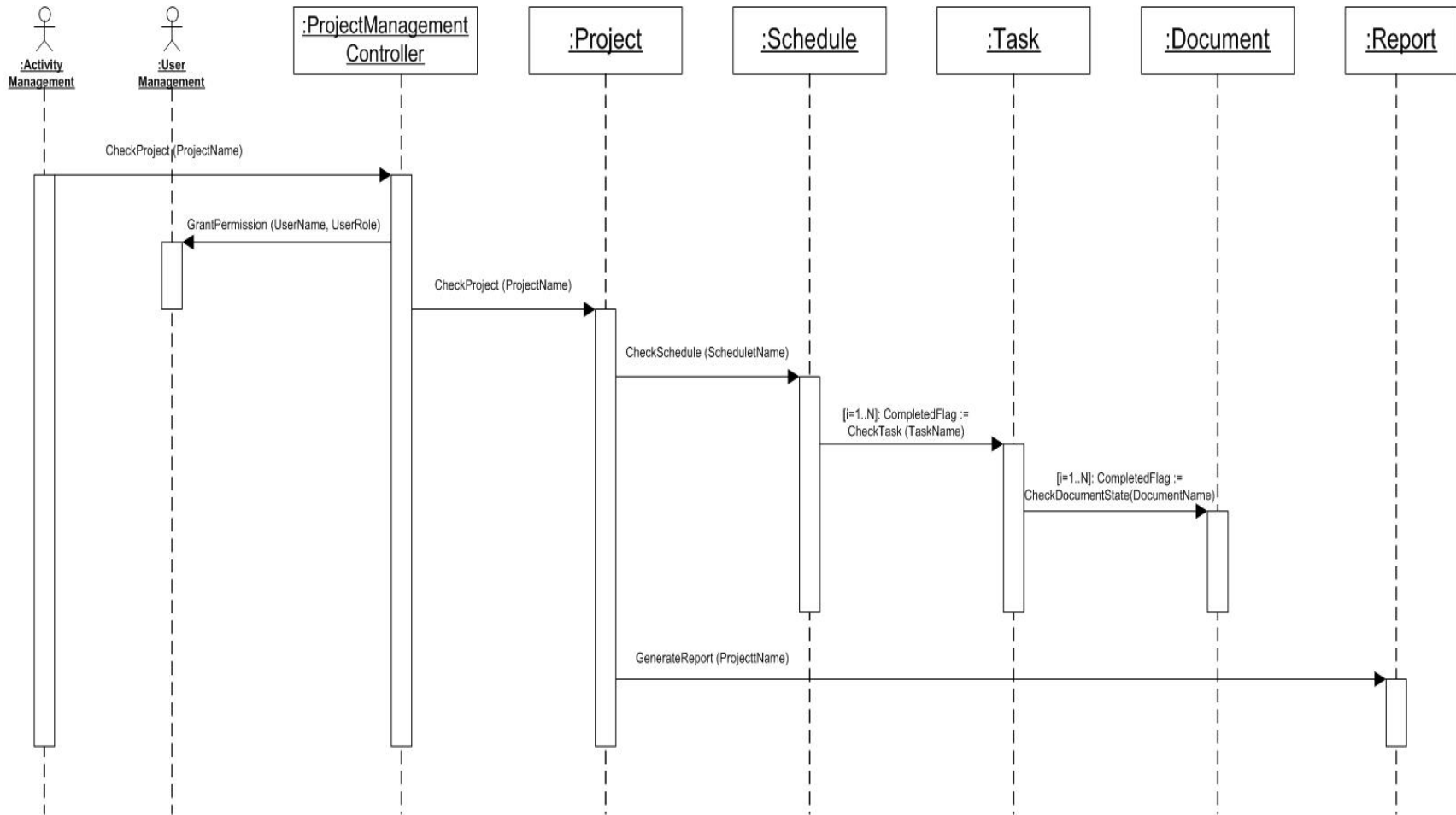


Part 2: Sequence Diagram

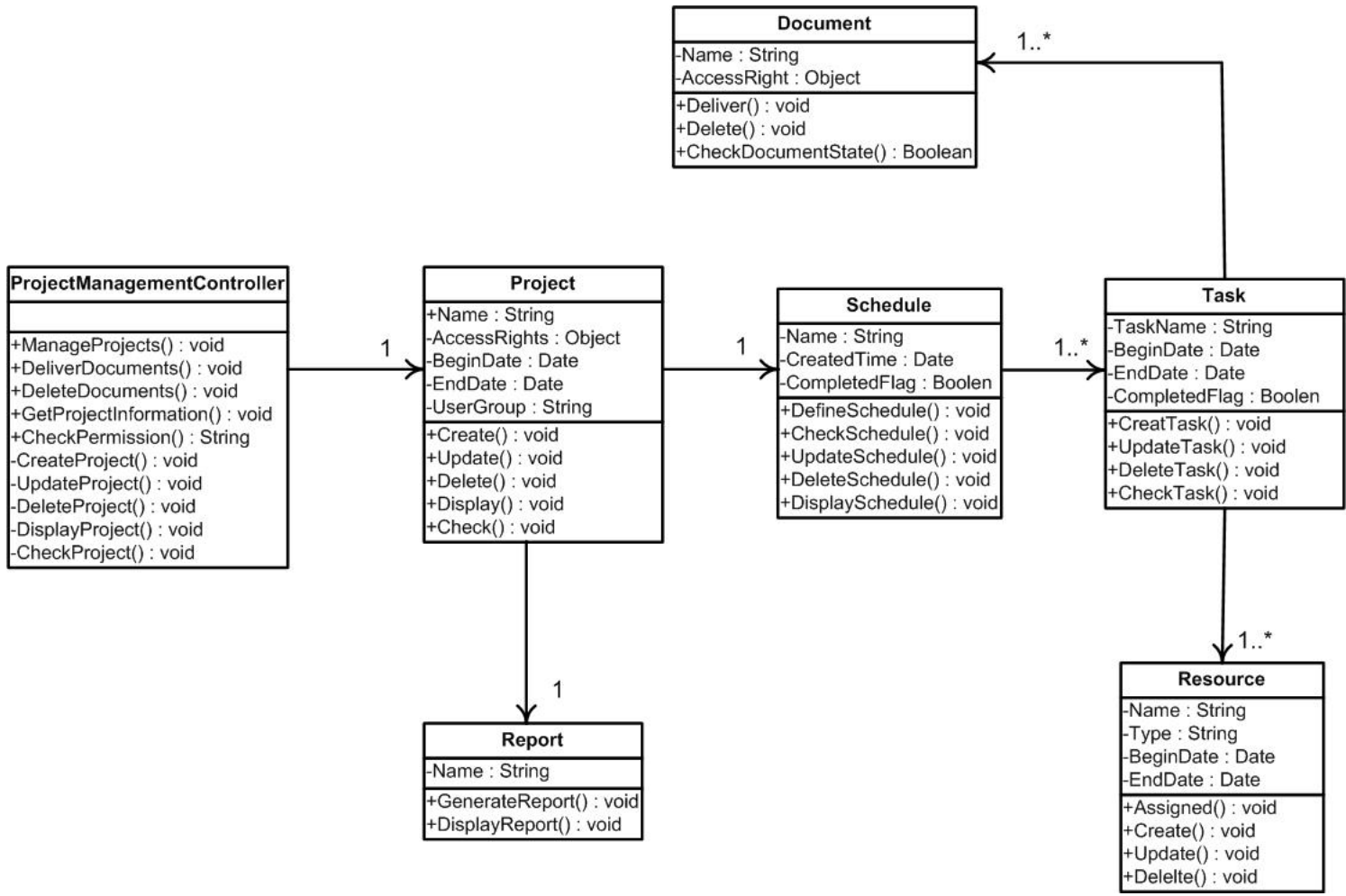
1. DeliverDocuments



2. CheckProject



Part 3: Class Diagram and Text Description



ProjectManagementController

It is the façade class of Project Management System. It is responsible for accepting message from Activity Management System, or sending message to User Management System. It provides a higher-level interface of Project Management System. After users login system, from activity management system, they send commands to this façade class to get service of Project Management System. The instance of this class is created when referred by Activity Management System. The class refers to Project class.

Project

It is responsible for collecting information about projects and executing operations to projects. Its instance is created when referred by ProjectManagementController class. Whatever operation users want to perform, a project instance must be created firstly. This class refers to Schedule class.

Schedule

It is responsible for collecting information about schedules of projects and executing operations to schedules of projects. Its instance is created when referred by Project class. Each project has only one schedule, at the same time, Schedule consists of many tasks. This class refers to Task class.

Task

It is responsible for collecting information about tasks and executing operations to Tasks. Its instance is created when referred by Schedule class. Each task should be supported by one or more resources (such as programmer, hardware equipment, etc.). Generally, the task is completed after relative documents are delivered. This class refers to Resource class and Document class.

Resource

It is responsible for collecting information about resource and executing operations to resources. Resource can be project manager, team member, or supporting person. Resource can also be hardware equipment, or a certain place. Its instance is created when referred by Task class.

Document

It is responsible for collecting information about documents and executing operations to documents. Its instance of document class is created when referred by Task class. Document is the sign of completing a task. When a task in the project schedule is completed, the relative documents must be delivered. In Project Management System, users only can deliver or delete documents, they can't change documents. Changing documents should be tackled in Change Management System.

Report

It is responsible for collecting information about reports and executing operations to reports. Its instance is created when referred by Project class. When project manager checks project, predefined schedule is compared with the deliver of documents. After that, a report about the result of comparing is generated. It can also be displayed.

Part 4: Description of the Interface

In Project Management System, the façade class is ProjectManagementController class. It is responsible for communicating with Activity Management System and User Management System. In this class, five Interface operations are provided.

1. Public void ManageProject (String ProjectName, String OperationType):

It provides an interface *for Activity Management System* to perform manage project operation. The value of OperationType can be assign to create, update, delete, or check. When OperationType's value is "create", the value of ProjectName is null. By this interface, to perform operations about managing project, Activity Manage System just need to sends relative messages to this interface.

2. Public void DeliverDocuments (String ProjectName, String DocumentName)

It provides an interface *for Activity Management System* to perform deliver document operation. In Project Manage System, the documents should be delivered in terms of project schedule which have been predefined. To do so, Activity Manage System needs to refer to this interface with project name and document name, and then Project Manage System will update the schedule and relative task, and upload the document.

3. Public void DeleteDocuments (String ProjectName, String DocumentName)

It provides an interface *for Activity Management System* to perform delete document operation. When a document needs to be delivered again, it should be deleted first. To delete a document, Activity Manage System needs to refer to this interface with project name and document name, after that, Project Manage System will update the schedule and relative task, and delete this document from project.

4. Public void GetProjectInformation (String ProjectName)

It provides an interface *for Activity Management System* to perform get project information operation. The information includes basic information, and compared results of schedule. To do so, Activity Manage System needs to refer to this interface with project name, after that, Project Manage System will display relative project information.

5. Public String CheckPermission(String UserName, String UserRole)

It provides an interface *for Project Management System* itself to perform operation of getting permission from User Management System and check the permission. The service is provided by function GrantPermission() in User Management System. CheckPermission() will refer to GrantPermission() of UMS. After getting permission from UMS, Project Management System will compare role's permission with project permission to decide what kind of operations user can perform.