DOCUMENTATION

Introduction

ProjectX is a web application which support the creation and management of software projects. Many choices and assumptions have been taken to achieve its development and they will be introduced in this document.

First of all it’s assumed that a project is divided in stages, which are macro sub-parts, and stages are divided in tasks: these are the actual activities to be carried out.

The users assume different roles in different projects :

* Project Manager
* Supervisor
* Developer

Every project is assigned to the project manager who created it, every stage is assigned to a supervisor to manage it and every task is assigned to one/more developers to be done.

There are bindings on the possibility of assume a role because it’s assumed that in a software company the employees are classified in three types:

* Project Manager
* Senior
* Junior

This distinction is important at the moment of the assignement of roles in a project since a Project Manager user can only be a Project Manager or a supervisor in a project, while a Senior user can only be a supervisor or a developer and a Junior can only be a developer.

ProjectX offers the possibility to:

* Sign up a user
* Login
* Create a new project
* Assign resources to a project
* Divide the project into stages
* Assign the stage to a supervisor
* Divide the stages into tasks
* Assign developers to tasks
* Manage and modify a project/stage/task
* Manage project delays
* Search for similar project by subject area
* Search for similar client by subject area

Moreover projectX keeps trace of the stages status and sends email to signal their start, finish or eventual delay.

The actual email sending is simulated since it’s not supported by a SMTP server.

ANALYSIS

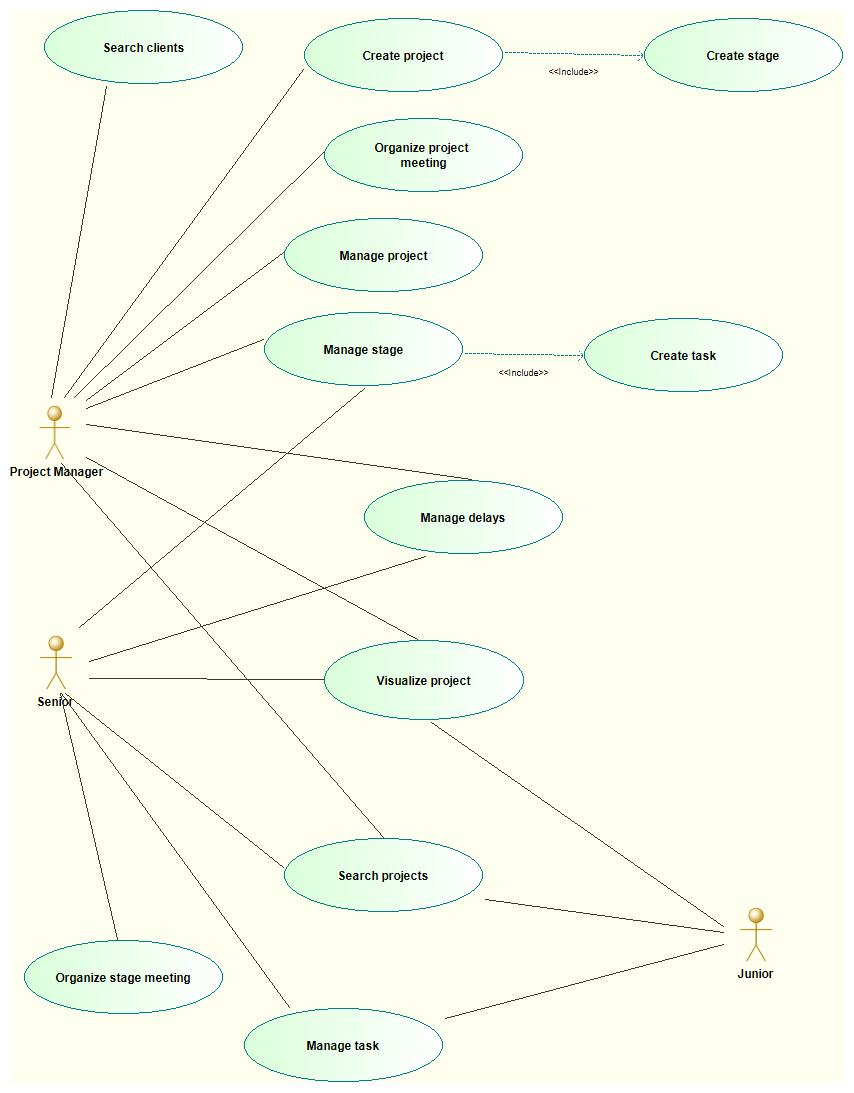
Requirements Analysis

The first stage of the application analysis was the outline of the principal requirements:

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Description | Type | Priority |
| 1 | The system should offer the possibility to create a new project | * Functional * UI * Project | M |
| 1.a | The system should offer the possibility to specify the requirements of the project | * Functional * UI * Project | M |
| 1.b | The system should offer the possibility to specify the goals of the project to be accomplished | * Functional * UI * Project | M |
| 1.c | The system should offer the possibility to establish a time estimation of the project | * Functional * UI * Project | M |
| 1.d | The system should offer the possibility to establish the costs of the project | * Functional * UI * Project | M |
| 2 | The system should offer a tool to manage the stages of the project | * Functional * UI * Stage | M |
| 2.a | The system should offer the possibility to specify the goals of the stage | * Functional * Stage | M |
| 2.b | The system should offer the possibility to establish the requirements of the stage | * Functional * UI * Stage | M |
| 2.c | The system should offer the possibility to check the results | * Functional * UI * Stage | M |
| 2.d | The system should notify the project manager about every stage of the project | * Functional * Stage | M |
| 3 | The system should offer the possibility to manage the human resources | * Functional * UI * Human resources | M |
| 3.a | The system should offer the possibility to manage the human resources of every project | * Functional * UI * Human resources * Project | M |
| 3.b | The system should offer the possibility to manage the human resources of every stages and to assign the roles of every person implied | * Functionality * Human resources * Stage | M |
| 4 | The system should offer the possibility to manage the physical resources | * Functional * UI * Physical resources | M |
| 5 | The system should offer the possibility to do outsourcing in case of lack of human and physical resources | * Functional * UI * Project * Stage * Resources | M |
| 6 | The system should offer the possibility to manage the project delays | * Functional * UI * Project | M |
| 7 | The system should offer the possibility to organize meetings | * Functional * UI * Meetings | M |
| 7.a | The system should offer the possibility to organize meetings among human resources of a stage | * Functional * UI * Meetings * Stage | M |
| 7.b | The system should offer the possibility to organize meetings with the client of the project | * Functional * UI * Meetings * Project * Clients | M |
| 8 | The system should keep trace of every clients who had/has interactions with it | * Functionality * Clients | M |
| 8.a | The system should offer the possibility to look for clients who had similar project request | * Functional * UI * Search * Clients | M |
| 9 | The system should offer the possibility to look for similar projects | * Functional * UI * Search * Project | M |
| 10 | The system should offer an algorithm for resources optimization | * Functional * Resources * Project | S |
| 11 | The system should manage the spread of human resources in various project with a security system | * Non Functional * Project | M |

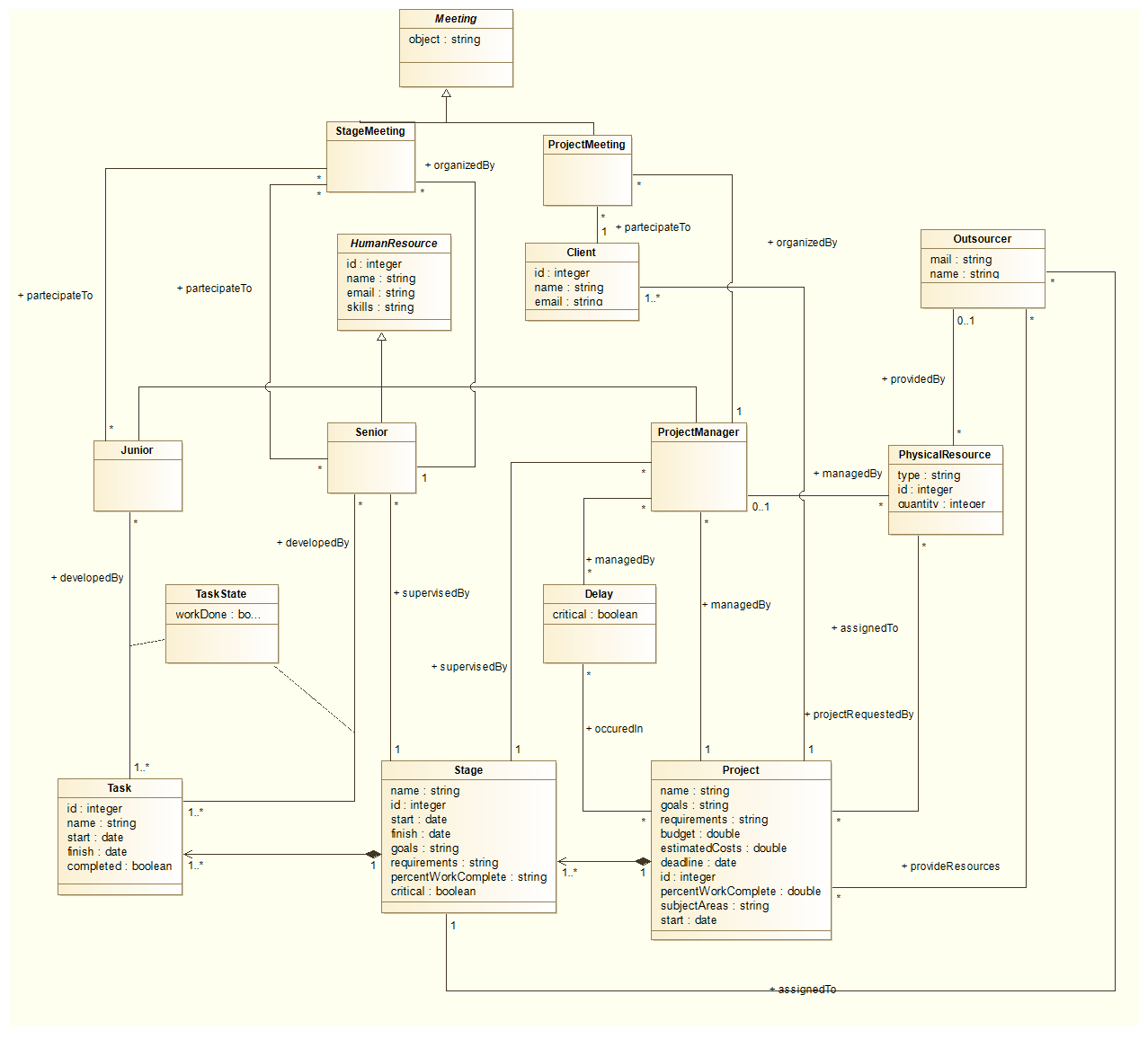
Use Cases

The accurate requirements analysis led to the definitions of the use cases:



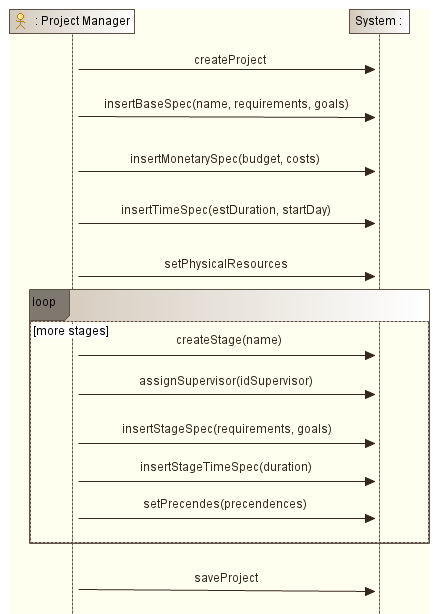
Domain Model

The domain model diagram offers a quick and immediate overview on the business logic of the application:

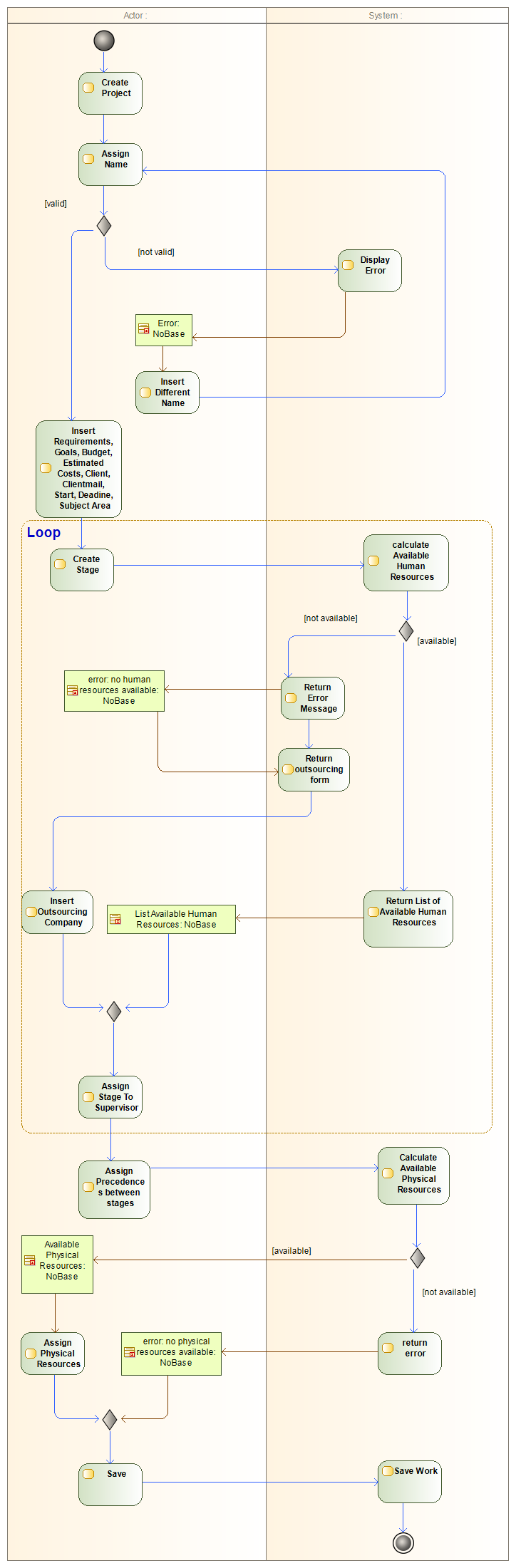


SSD Diagram

To better understand the flow of the “Create Project” use case, here’s its diagram:



Activity Diagram

Another diagram to understand the complexity of “Create Project”:

DESIGN

After the first analysis, project design started.

Architecture

ProjectX is a web application based on the architectural pattern MVC(Model-View-Controller) and JSP technology. Its persistence lays on a mySQL Database and the communication between the business logic classes and the DB is managed by the Data Mapper architectural pattern.

