Visual Code Review

Group 5
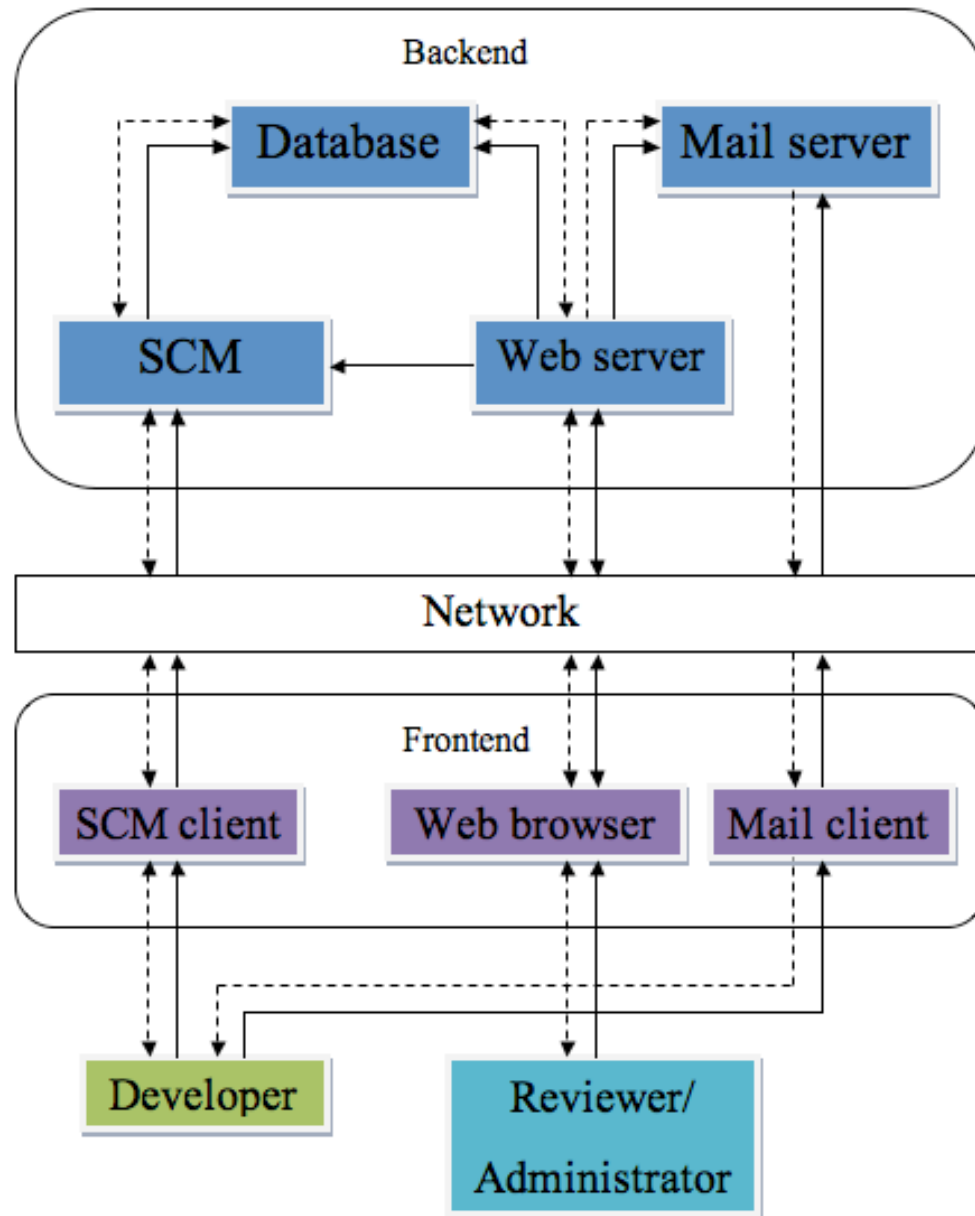
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2. System Overview

2.2 Overall Architecture Description

The reviewer or administrator uses a standard web browser to connect to the back-end web server part of the VCR system. The user is presented with information in a graphical user interface. Through the connection with the web server the reviewer is presented with the current commits and can perform code reviews from the browser. The administrator is instead presented with possibilities of administrating reviewers and policies through the web interface.

The web server is a HTTP web server backed up by a PHP interpreter to generate dynamic HTML files for the web clients. The web server has a connection to the database, through which it can list the commits, with their source code, and information about reviewers and policies. Through PHP the web server has a connection to the mail server, which it uses to send mails to the developer about the updated status on their commits e.g. whether the commit got accepted or not.
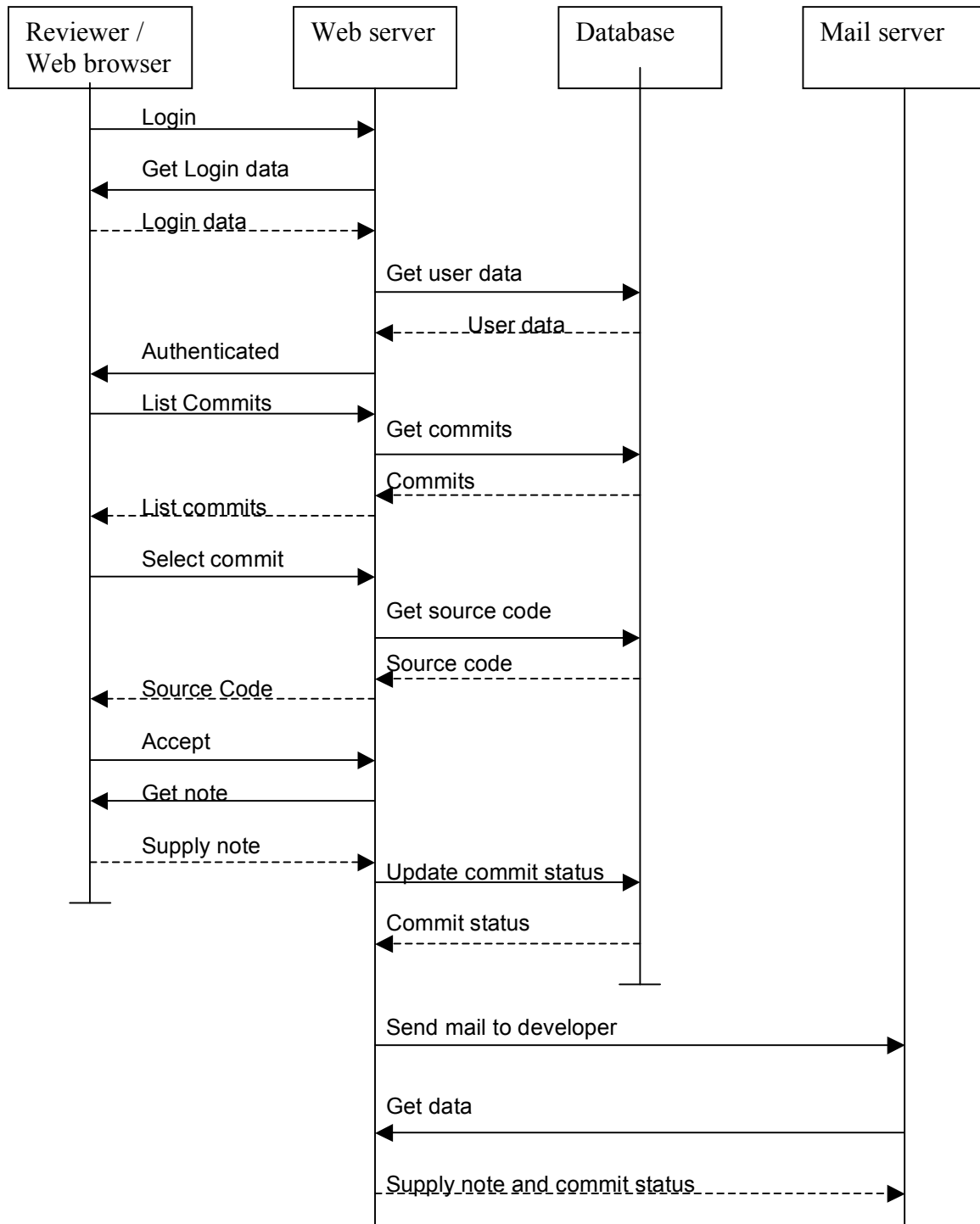
The developer uses an SCM client to send commits to the SCM server. The server is notified of the commit and runs python scripts, which in turn checks the commit and the branch it belongs with what policy it belongs to.
If it needs to be reviewed then the script stores the commit in the database, awaiting review. The code is otherwise directly committed to the SCM system's storage. It also notifies the developer of the whether or not the commit did need reviewing.
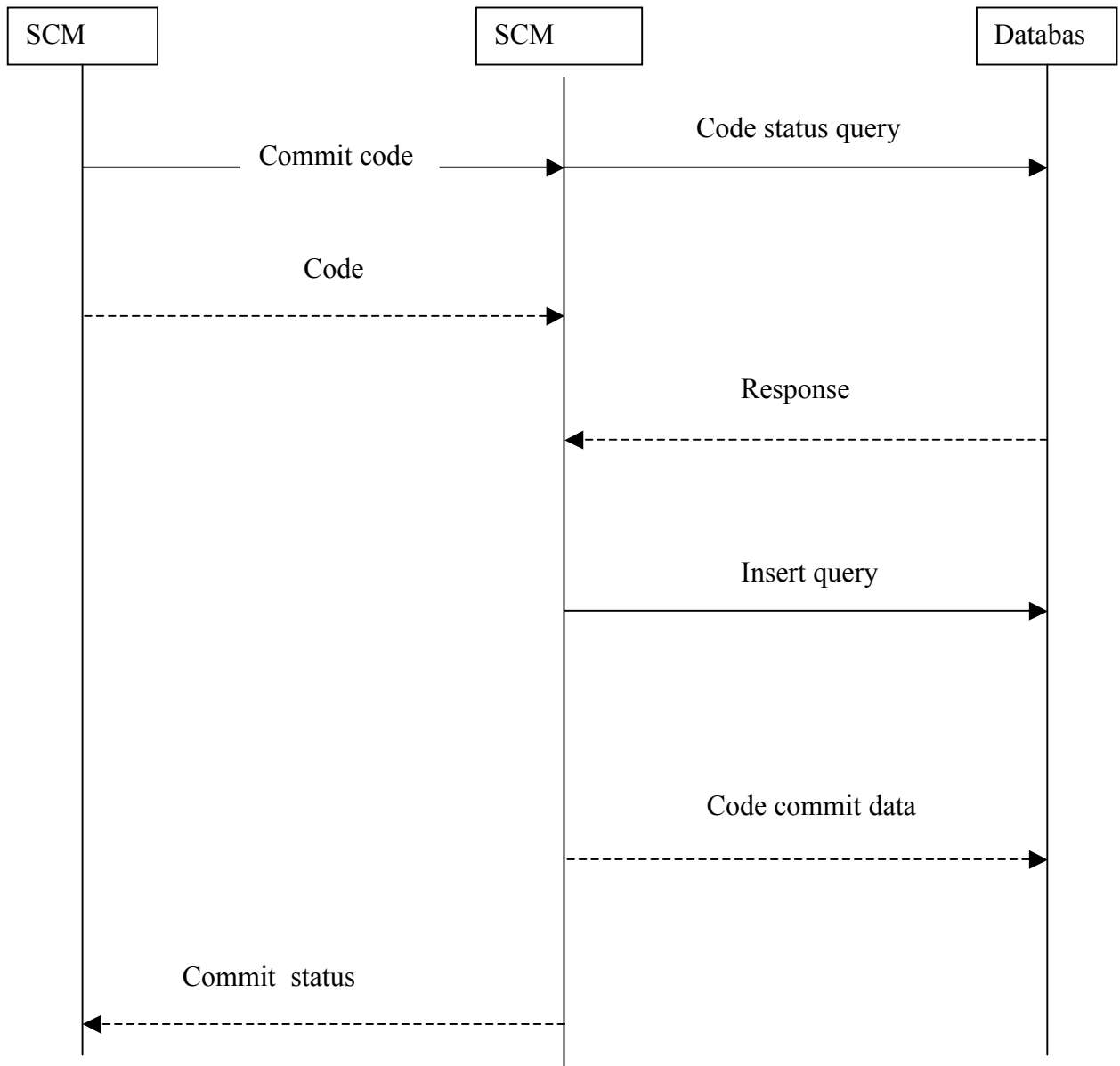
2.3 Detailed Description

2.3.1 Interaction diagrams

Sequence diagrams of examples of communication between components in the system as defined in the Unified Modeling Language (UML).

2.3.1.1 Review procedure

Reviewer / Web browser	Web server	Database	Mail server

Login

Get Login data

Login data

Get user data

User data

Authenticated

List Commits

Get commits

Commits

List commits

Select commit

Get source code

Source code

Source Code

Accept

Get note

Supply note

Update commit status

Commit status

Send mail to developer

Get data

Supply note and commit status

2.3.1.2. Commit process

SCM	SCM	Databas

Commit code → Code status query →

Code ⇢

Response ⇠

Insert query →

Code commit data ⇢
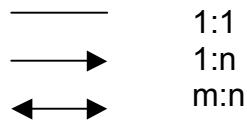
Commit status ⇠

2.3.2 Database diagram

This is an entity/relationship diagram describing the database used by the system.

Relationship descriptions:

```
————         1:1
————▶        1:n
◀———▶        m:n
```
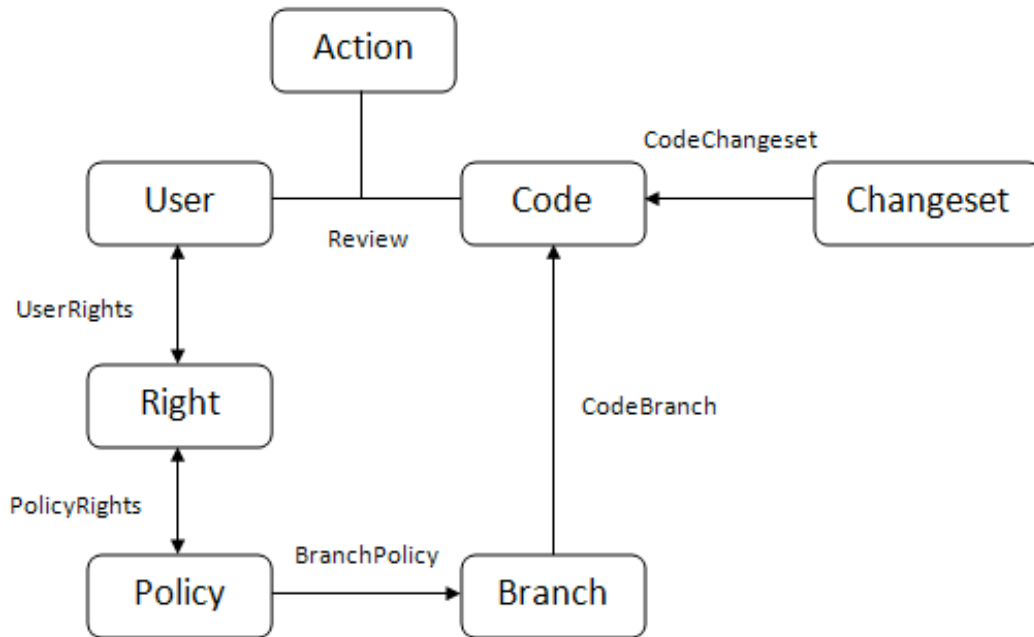

Entity / Relationship	Description
User	Contains user information such as login, password and e-mail.
Right	Describes the review rights a user can posess (i.e. C++, SQL, req. engineering).
Action	The actions that a reviewer can take (i.e. accept, reject).
Policy	Consists of a set of rights to be applied to a branch.
Code	Contains the committed code and its relevant information.
Branch	Represents a branch in the Source Control Management (SCM) development.
Changeset	Every set of code committed belongs to a changeset.
Review	Connects objects which are part of a review.
User Rights	Connects users with their rights.