Mini Project Report

Conference Management System

Submitted in full fulfilment of the requirements for the Object Oriented Modeling and Design during 7th semester of

Bachelor of Technology
in
Computer Science & Engineering

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SYNOPSIS

INTRODUCTION

The purpose of the conference management system is that the system can easily review the process. The main process is the submission of paper by the candidate, reviewing the paper and sending the acknowledgement to the candidates.

BACKGROUND

The Conference Management System is a web based software that supports the organization of conferences, especially scientific conferences. It helps the program chair(s), the conference organizers, the authors and the reviewers in their respective activities. Author can submit the paper, register themselves and then attend the conference. The paper will be reviewed by the reviewers. The details of the conference, date and time will be made available to them through the website. After getting the confirmation details, the author should submit the revised and camera ready paper. Then the registration process will be done.

FUNCTIONAL REQUIREMENTS

GENERAL: All users are required to login using their credentials. The credentials will be verified for security purposes. Once the authentication process is completed, users are provided access to all the functionalities. Users also have the liberty to change their password at any time.

END USERS CHARACTERISTICS:

- Program Committee Chair (PC Chair) → responsible for scheduling of call for papers, paper assignment to Reviewers, and final decision on paper acceptance
- Reviewers → responsible for reviewing papers and sending the results back to Program Committee Chair (PC Chair)
- Authors → responsible for submitting abstract and full paper to the conference, as well as registering for the conference attendance.
- General Users

END USERS REQUIREMENTS:

- Signup/Login to the conference system for one time authentication
- Submission of the paper by the author to the chair
- Assigning of the papers to the reviewers by the PC chair
- Paper review by the reviewer
- Send review details to the authors
- Send the revised and camera ready paper
- Registration of the paper including payment

- Announcements and email notifications
- Conference rooms and presentation scheduling

NON FUNCTIONAL REQUIREMENTS

USER INTERFACE

- User interface will be provided to the user through a web browser as website. Thus the user interface will be constrained by the web browser capabilities
- The user interface should be self-explanatory, and a help feature will be available

PERFORMANCE REQUIREMENTS

- Depends on the response time and the speed of the data submission
- Response time of the system is direct and the application is real time. System must have fast response time which depends on the efficiency of the implemented algorithm.
- The first version of the system will have limited file submissions, hence doesn't require large network

SAFETY REQUIREMENTS: System has to check

- If HTML content is syntactically well formed
- If web forms with the services processing the form input are consistent
- Referential integrity of hyperlinks in both static and dynamic content
- Statically safe binding of the code of session operations to variables defined in the session scope
- In case of errors, it should display with the appropriate error messages to the users

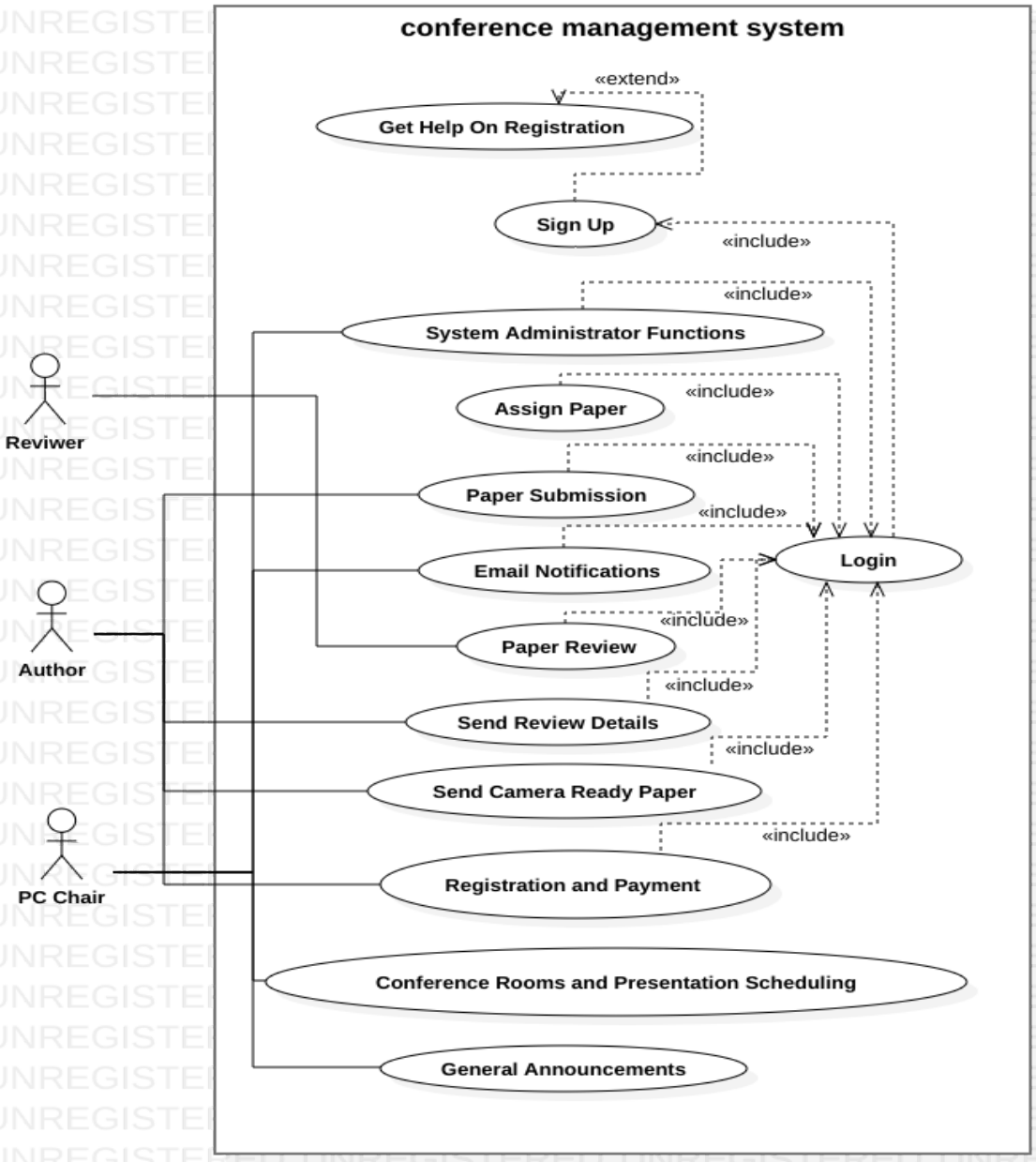
SECURITY REQUIREMENTS

- For security of the system, database replication should be used so that all the important data should be kept safe
- In case of a crash, the system should be able to backup and recover the data

OTHER REQUIREMENTS

- The project will be released under GNU General Public License. GPL is free software license which permits people to use and even redistribute the software without being required to pay anyone a fee for doing so.
- System will be made available through web browser and will be compatible with the widely used browsers
- Constant network communication (internet) is required to use the system

USE CASE DIAGRAM



USE CASE DESCRIPTION - 1

NAME: Signup & Login

SUMMARY: Required for the identification & authentication of the actor from the remote area

ACTORS: Author, Reviewer, PC Chair

PRE-CONDITIONS:

- Needs strong internet connection
- The website needs to be accessible by the actors

DESCRIPTION:

- One of the actors visits the conference website
- IF no account
    - Click on the signup button
    - Actor is taken to the signup page
    - Fill in the personal details
    - Choose a username and password which is available
    - Saves the details and DB update
    - Redirect to login page
- ELSE
    - Click on the login button
    - Enter username and password
    - Authenticate with the details in the database
    - Redirect to the conference dashboard

EXCEPTIONS:

- If actor loses internet connection, error message is displayed

POST-CONDITIONS: Creates an account/login the account on success and error message is popped on failure

USE CASE DESCRIPTION - 2

NAME: System Administrator Functions

SUMMARY: Date of hosting the website, admin rights, closing of the submissions and others

ACTORS: PC Chair

PRE-CONDITIONS:

- System admin login (user credentials)

DESCRIPTION:

- PC Chair logins into the account using his credentials
- PC Chair decides the launch date for hosting the website
- Closing of the submissions for a particular conference
- Overall website control

EXCEPTIONS:

- Reliability, availability and scalability issue will result in browser exceptions
- If the internet connection is lost, an error message will be popped

POST-CONDITIONS: Content will be displayed on the user interface

USE CASE DESCRIPTION - 3

NAME: General Announcements

SUMMARY: The necessary information regarding the conference is put up on the dashboard

ACTORS: PC Chair, Author

PRE-CONDITIONS:

- Domains, payment, location of the conference information

DESCRIPTION:

- PC chair logins into the account using his credentials
- All the details regarding the conference are updated on the website
- The details include domains, publication series, payment options, submission mode, the location and date of the conference

EXCEPTIONS:

- If the internet connection is weak, an error message will be displayed

POST-CONDITIONS: All the details will be displayed on the user interface

USE CASE DESCRIPTION - 4

NAME: Paper Submission
SUMMARY: Uploading the research paper by the actor
ACTORS: Author
PRE-CONDITIONS:

- Needs strong internet connection
- Requires account for authentication

DESCRIPTION:

- Actor logins into the account using his credentials
- IF login is successful,
    - Author clicks on the submit paper button
    - Author is taken to the submission page
    - Uploads the research paper, necessary keywords and all the author details

EXCEPTION:

- If login fails, an error message will be displayed

POST-CONDITIONS: Submission of the paper by author and DB update (research paper, keywords and author details)

USE CASE DESCRIPTION - 5

NAME: Assign paper
SUMMARY: PC Chair assigns the submitted paper to the reviewers
ACTORS: PC Chair
PRE-CONDITIONS:

- System admin login
- Submitted papers by the authors

DESCRIPTION:

- PC chair logins into the account using his credentials
- PC chair assigns the submitted papers to the reviewers
- Papers are segregated on various domains. After segregating, the PC chair assigns the papers to the respective domain reviewers

EXCEPTIONS:

- If paper submitted is not a part of the specified domains on the website, an email notification will be sent to the author

POST-CONDITIONS: Paper assignment notification to the assigned reviewer

USE CASE DESCRIPTION - 6

NAME: Paper Review

SUMMARY: Review the research paper. Check for correctness and novelty of the proposed paper and plagiarism test

ACTORS: Reviewer

PRE-CONDITIONS:

- Requires account for authentication
- Paper assignment by the PC chair to the reviewer

DESCRIPTION:

- Reviewer logins into the account using his credentials
- IF papers are assigned, reviewer checks for the papers assigned by the PC chair and reviews them. Review process includes plagiarism check, novelty of the idea, correctness of literature survey, proposed methodology and references
- ELSE no pending papers to be reviewed

EXCEPTIONS:

- No papers assigned will be notified if papers are not assigned

POST-CONDITIONS: Paper reviewing by reviewer and sending review details to the PC chair

USE CASE DESCRIPTION - 7

NAME: Send Review Details

SUMMARY: Comments received for the research paper by the reviewer

ACTORS: Author, PC Chair

PRE-CONDITIONS:

- Requires account for authentication

DESCRIPTION:

- PC Chair logins using admin credentials
- PC Chair sends the review details submitted by the reviewer to the author
- Review details consists of the paper id, associated authors, payment details, brief comments and necessary revisions

EXCEPTIONS:

- Review details may be delayed because the report is not sent by reviewer. Hence email notification will be sent to the authors

POST-CONDITIONS: Details being sent to the associated authors

USE CASE DESCRIPTION - 8

NAME: Send Camera Ready Paper

SUMMARY: After the paper is selected, camera ready paper should be submitted to the reviewer by author.

ACTORS: Author

PRE-CONDITIONS:

- Requires account for authentication
- Selection of the primary paper submission

DESCRIPTION:

- Actor logins into the account using his credentials
- IF login is successful,
    - Author clicks on the submit paper button
    - Author is taken to the submission page
    - Uploads the camera ready paper

EXCEPTION:

- If login fails, an error message will be displayed

POST-CONDITIONS: Submission of the paper

USE CASE DESCRIPTION - 9

NAME: Registration and Payment

SUMMARY: After submitting the camera ready paper, author needs to register for the conference and pay the publishing fee.

ACTORS: Author, PC chair

PRE-CONDITIONS:

- Requires account for authentication
- Netbanking, UPI payments

DESCRIPTION:

- Author logins into the account using his credentials
- IF author login is successful,
    - Author clicks on the Registration page and fills the required details
    - Author makes the payment and gets confirmation for the successful registration

EXCEPTIONS:

- Error message is displayed for wrong credentials of netbanking or account login

POST-CONDITIONS: Registration and payment process confirmation by email

USE CASE DESCRIPTION - 10

NAME: Conference Rooms and Presentation Scheduling

SUMMARY: Time slots and rooms are alloted for the accepted candidates to present their paper.

ACTORS: PC chair

PRE-CONDITIONS:

- Requires account for authentication.
- Requires details of accepted papers.

DESCRIPTION:

- PC chair logins into the account using his credentials
- PC Chair posts the alloted slots in a document format on the conference portal and also informs the authors regarding the rooms n schedule through mail

EXCEPTIONS:

- Error message is displayed for wrong credentials

POST-CONDITIONS: Document posted by PC chair can be viewed by the candidate for their respective time slots. Apart from the document posted on the website, the author can check for mail

USE CASE DESCRIPTION - 11

NAME: Email Notifications

SUMMARY: All the necessary details regarding the conference will be communicated through Email by the PC chair to the author.

ACTORS: PC chair, Author

PRE-CONDITIONS:

- Registered Email-id of a candidate for further communication.

DESCRIPTION:

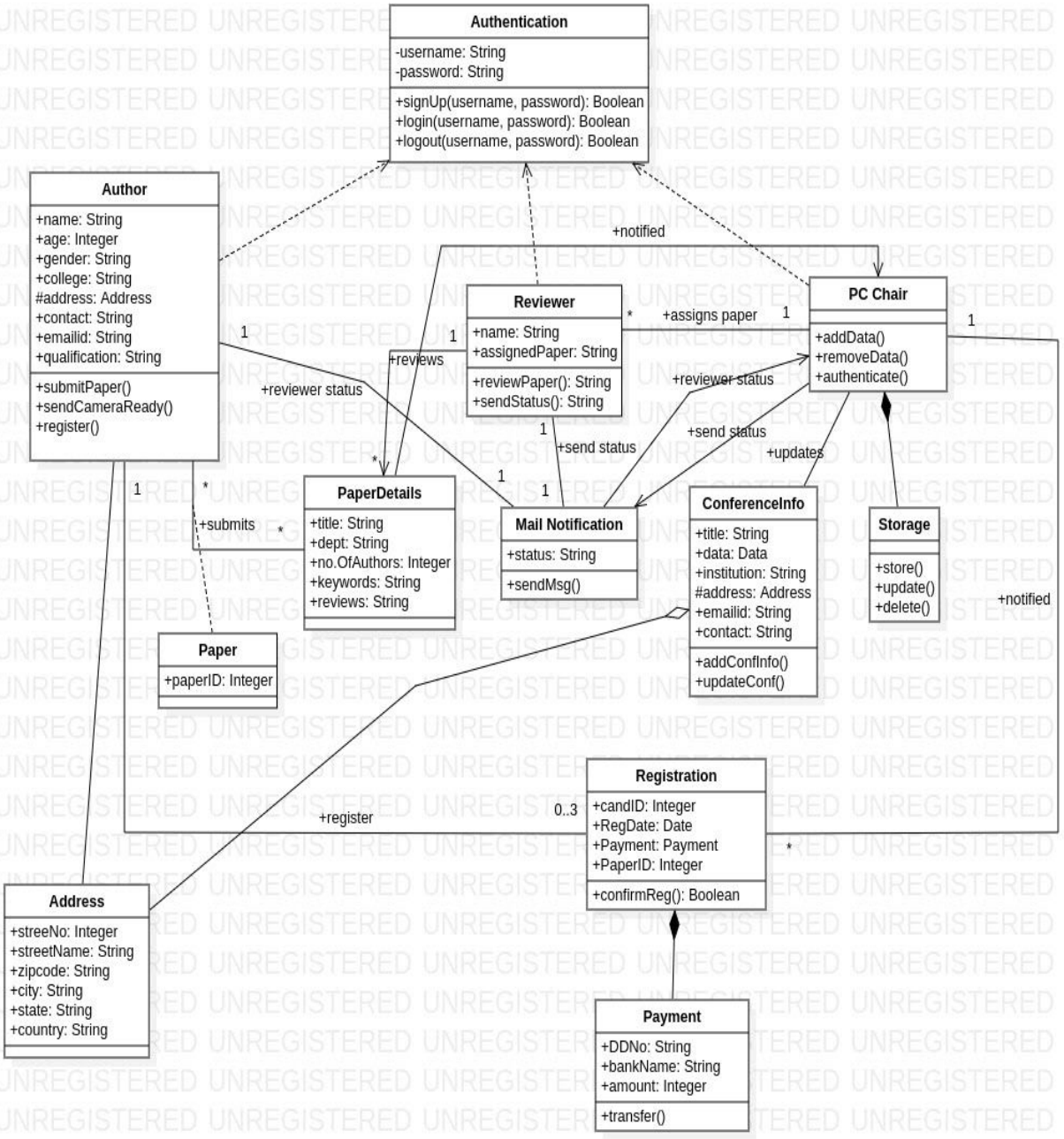
- PC chair logins into the account using his credentials
- IF login is successful, PC Chair sends a mail regarding the conference details to the authors

EXCEPTIONS:

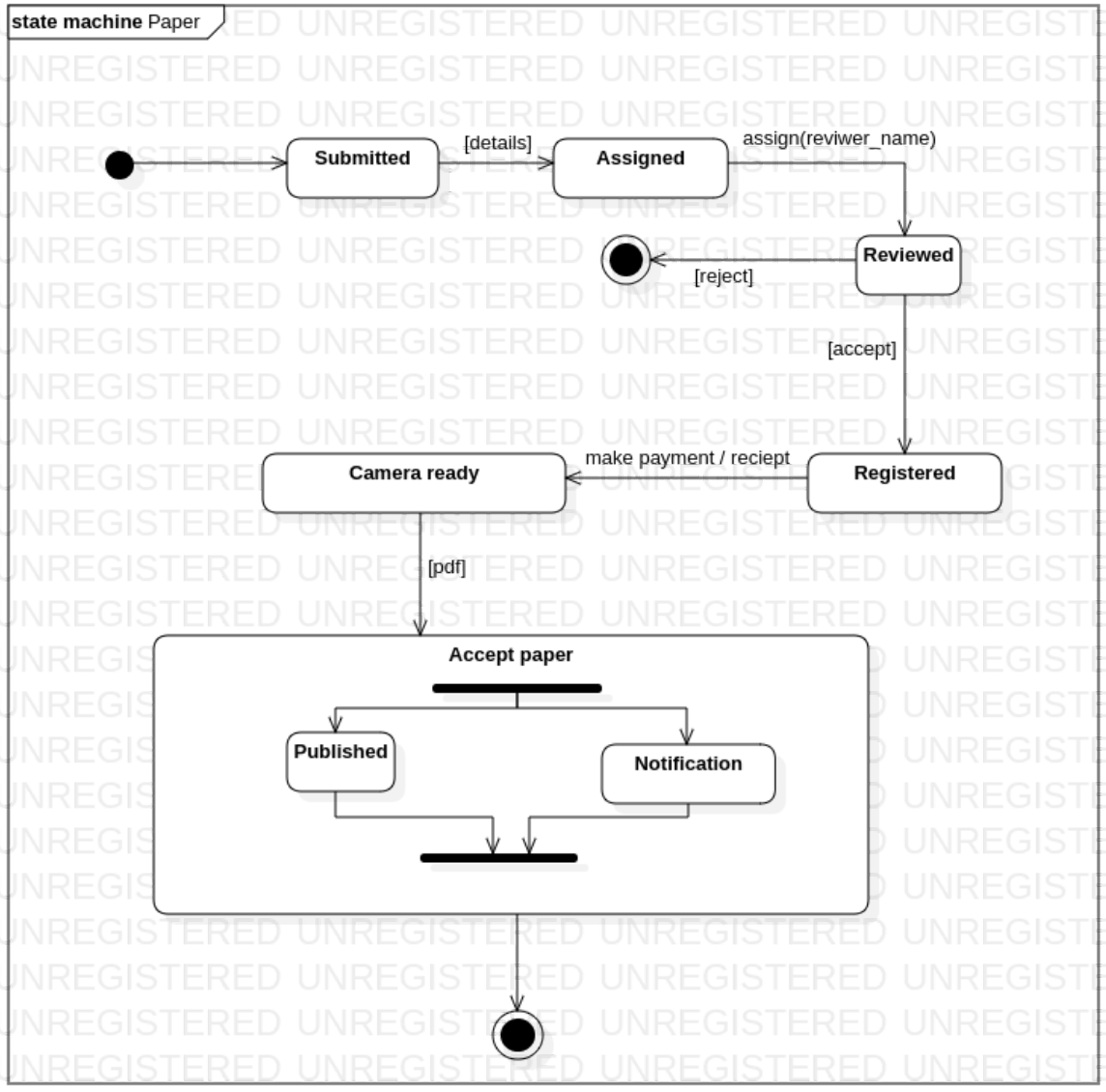
- Error message is displayed for invalid mail-id

POST-CONDITIONS: Author receives mail notification from PC chair about the process

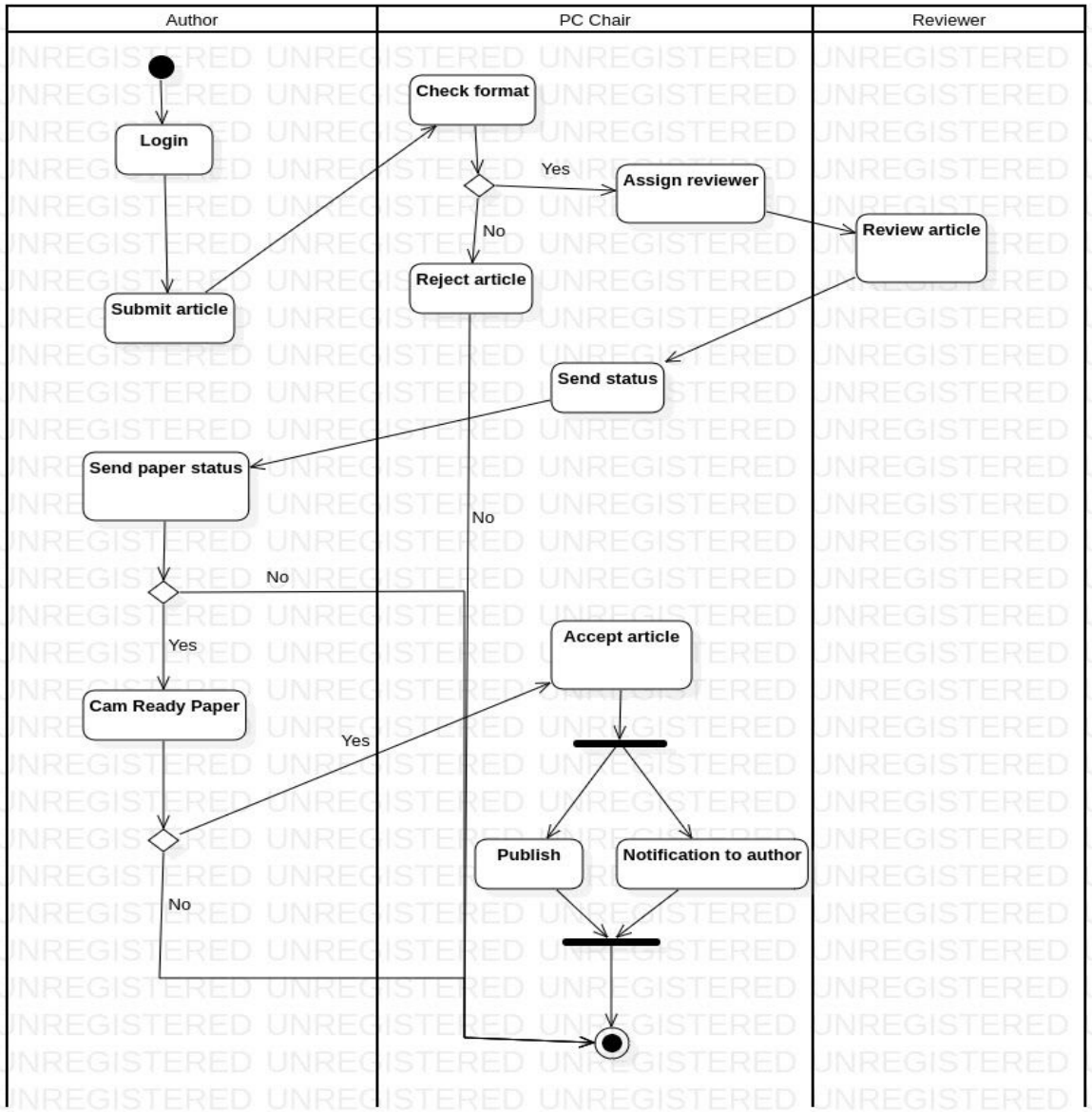
CLASS DIAGRAM



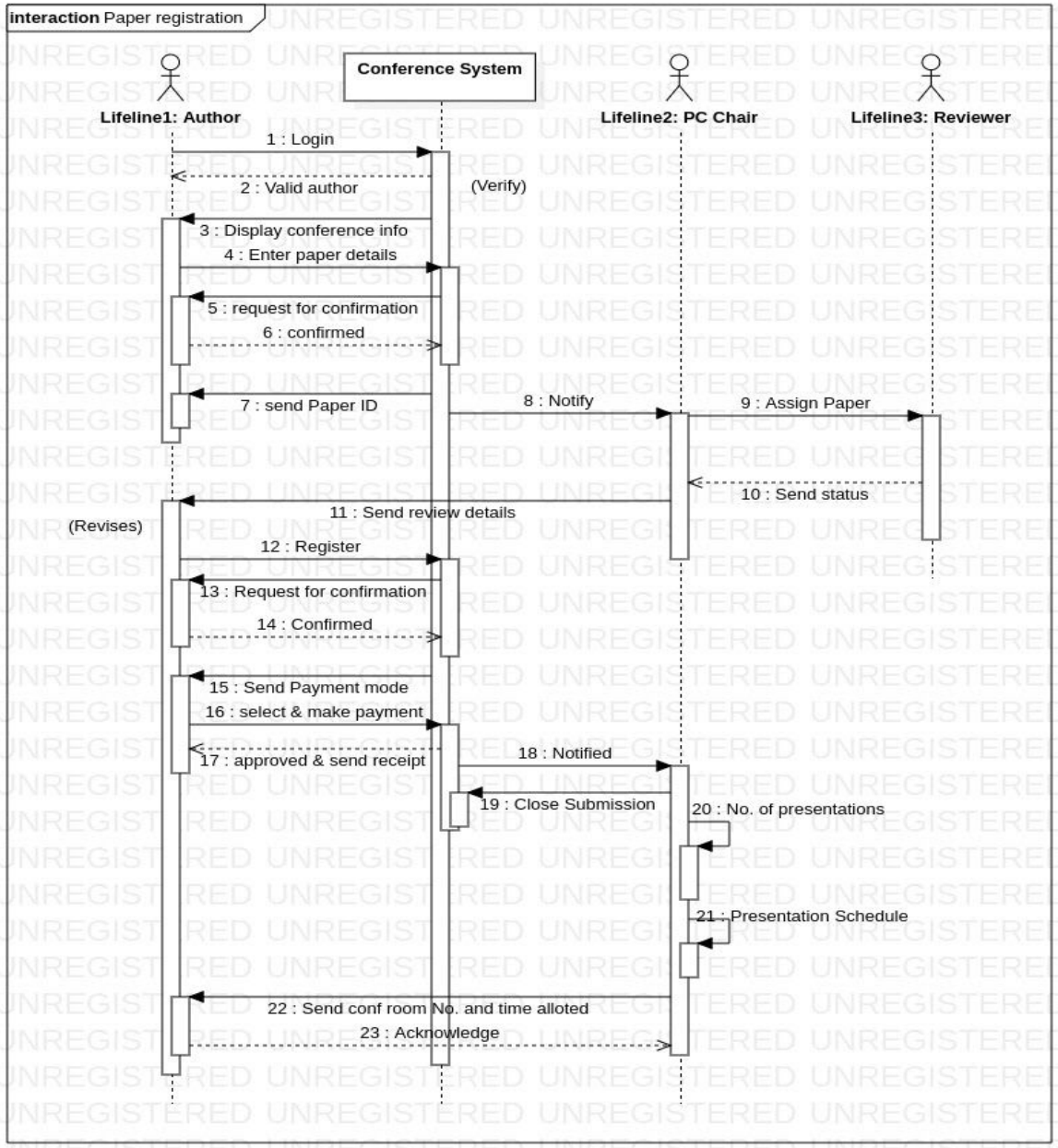
STATE DIAGRAM



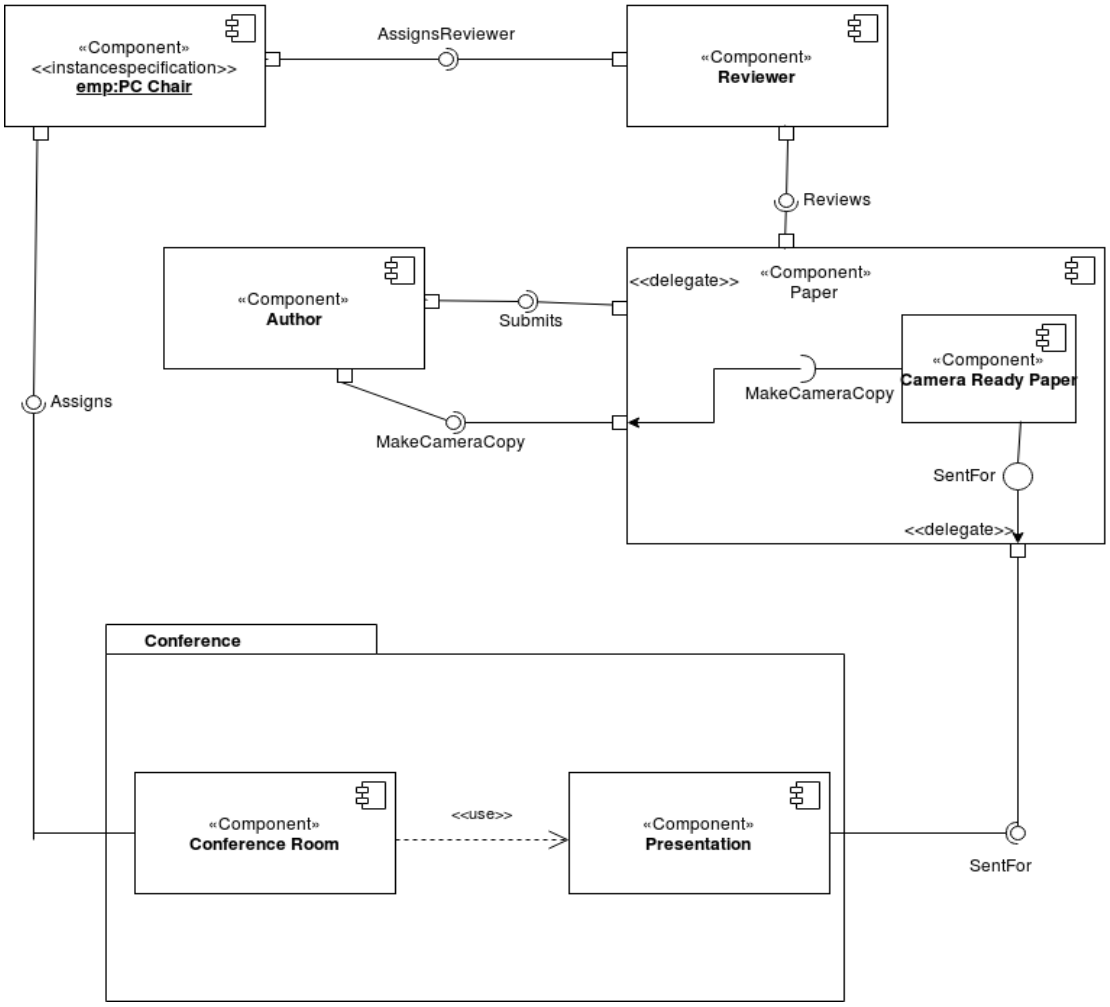
ACTIVITY DIAGRAM



SEQUENCE DIAGRAM



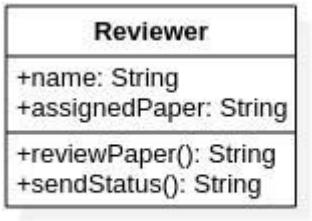
COMPONENT DIAGRAM



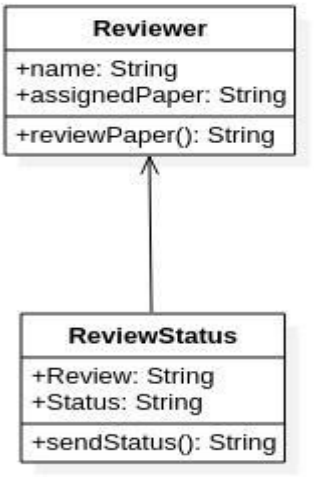
PC Chair is an instance of a component which provides an interface of assigning reviewer and the reviewer is utilizing the interface. PC Chair also provides another interface for assigning conference room (component within conference package). Reviewer provides the interface of reviewing the paper and the paper component has a nested component with in it which is camera ready paper. Author provides two interfaces , i.e., submission of the paper and submission of camera ready paper. The delegate part indicates the connection of inner component to the environment. Camera ready paper provides an interface for generating presentation slots which is used by the presentation component in the conference package.

SOLID PRINCIPLES

1. SINGLE RESPONSIBILITY PRINCIPLE

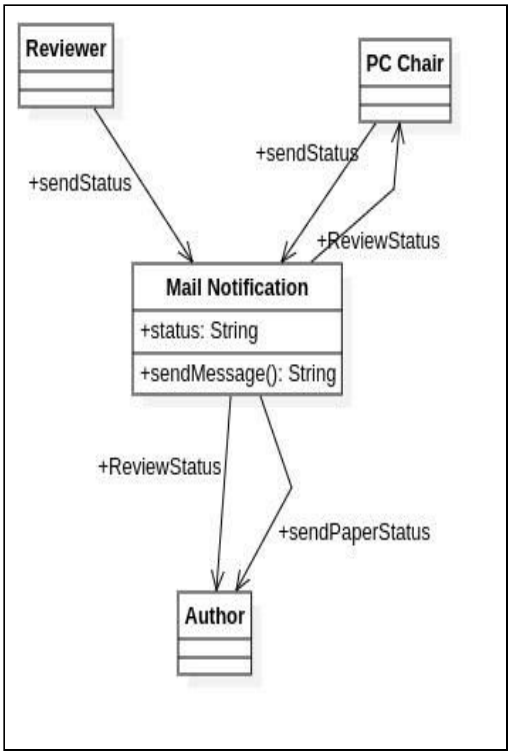


Old Class Model

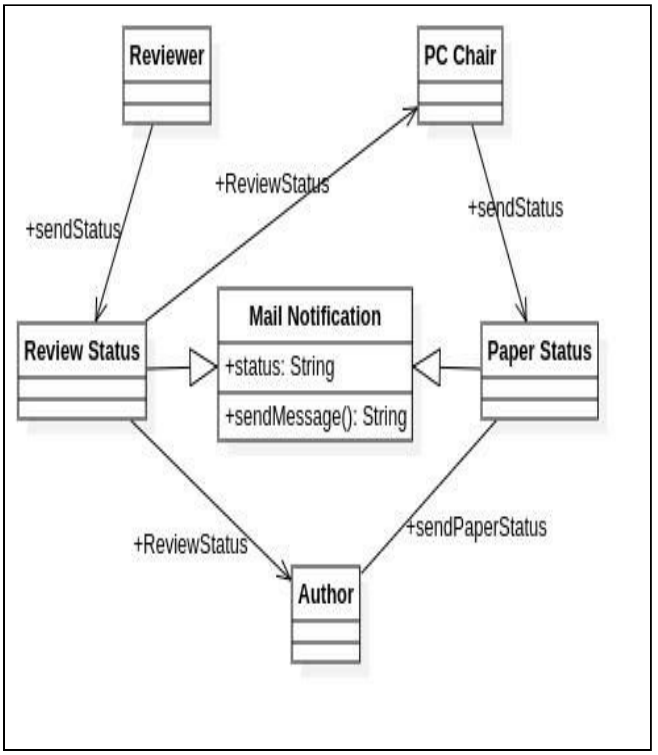


Refactored Class Model

2. OPEN-CLOSE PRINCIPLE

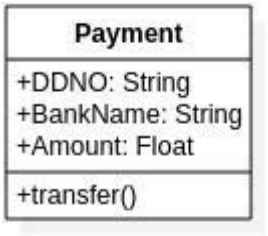


Old Class Model

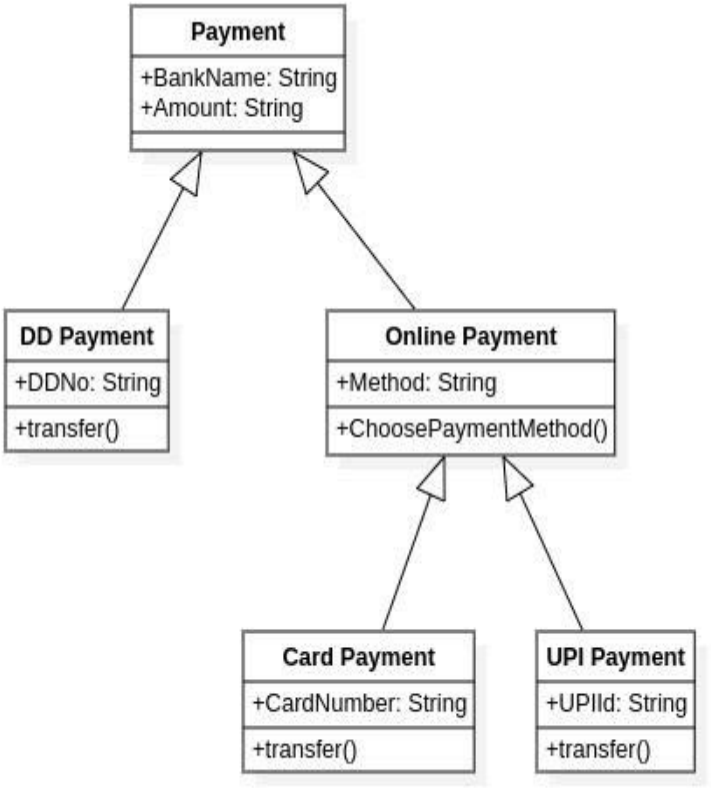


Refactored Class Model

3. LISKOV-SUBSTITUTION PRINCIPLE

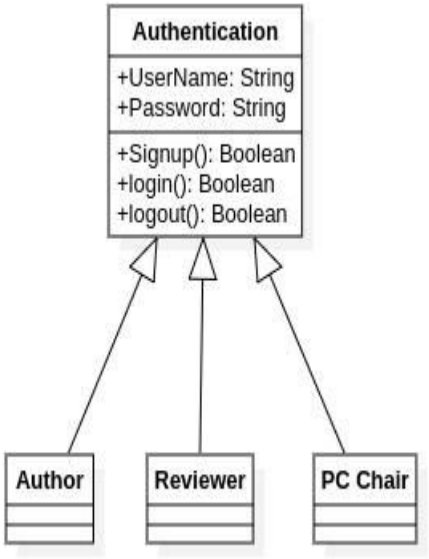


Old Class Model

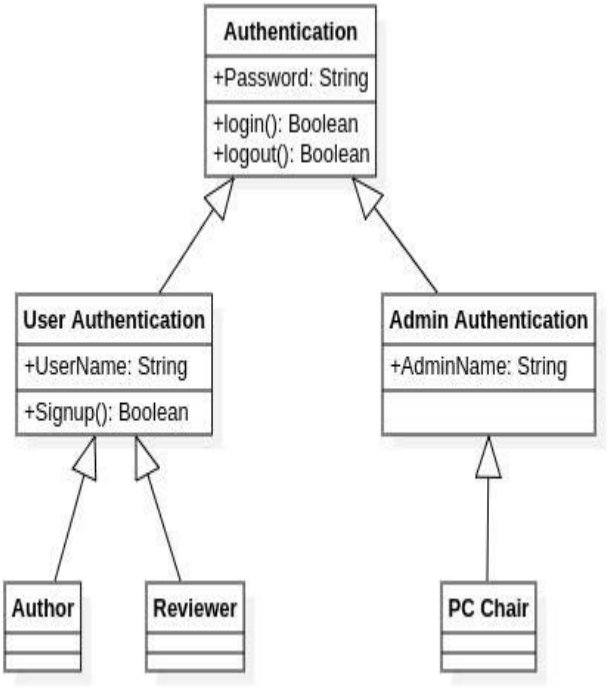


Refactored Class Model

4. INTERFACE SEGREGATION PRINCIPLE

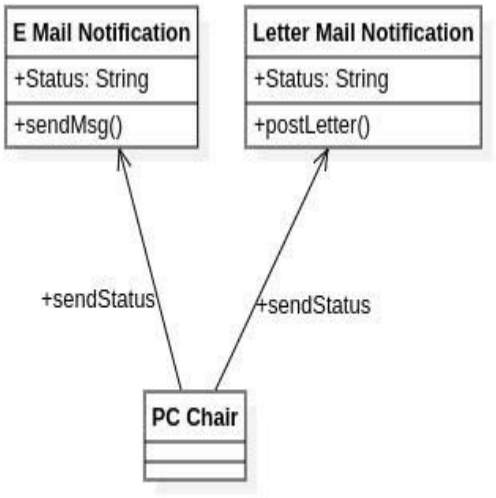


Old Class Model

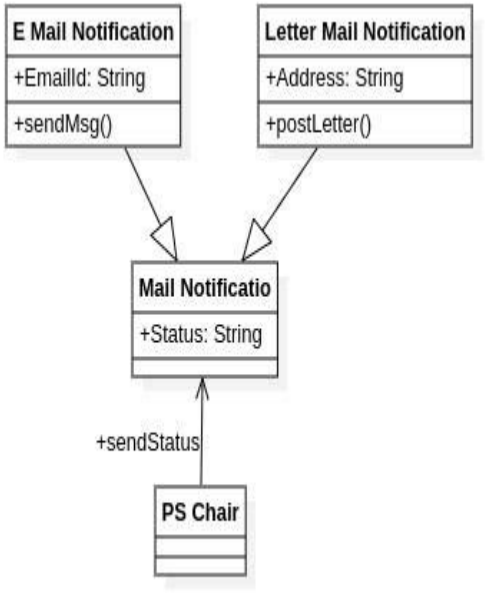


Refactored Class Model

5. DEPENDENCY INVERSION PRINCIPLE



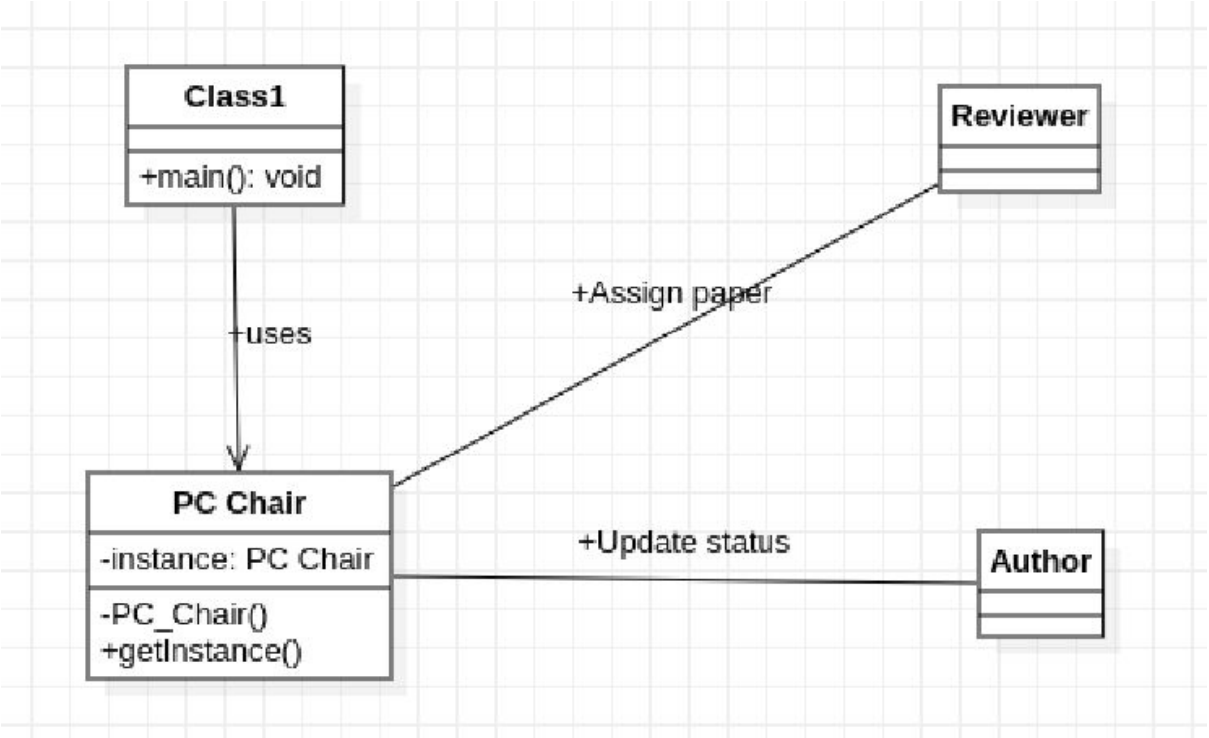
Old Class Model



Refactored Class Model

DESIGN PATTERNS (CREATIONAL)

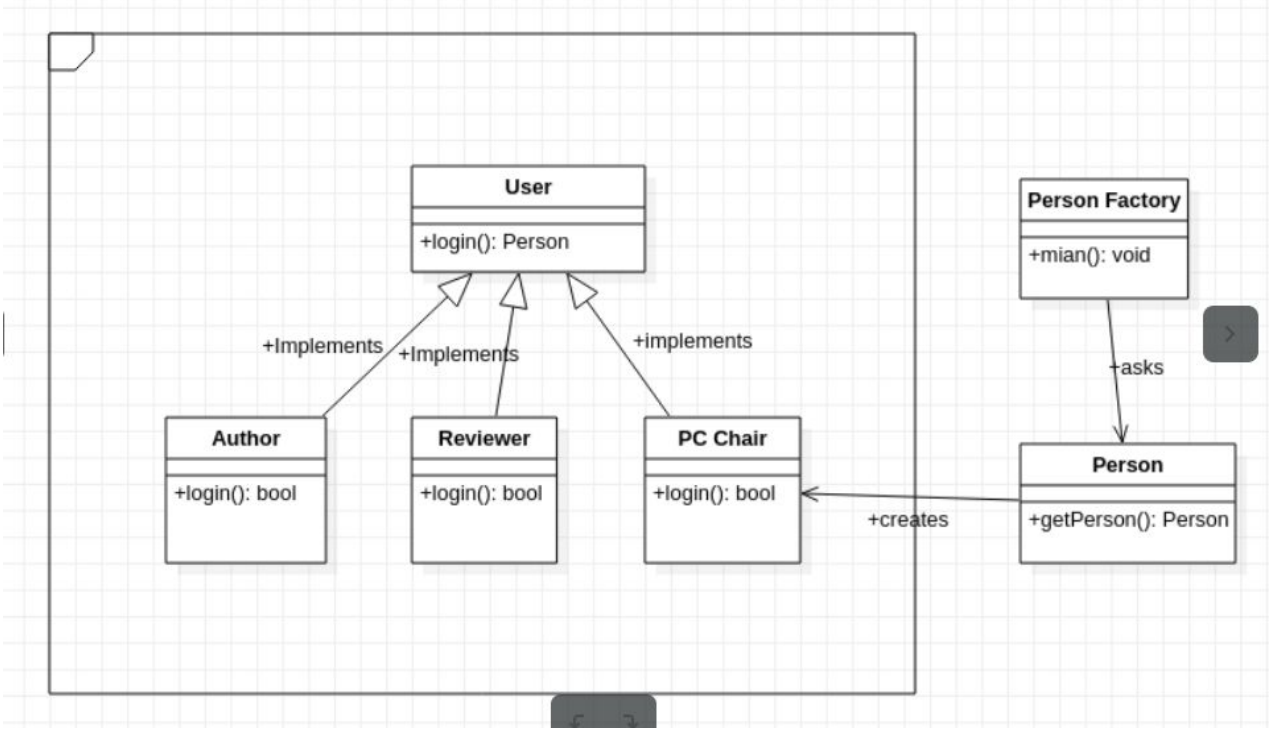
1. SINGLETON



Def: The pattern restricts the instantiation of a class to one "single" instance.
Here, **PC Chair** is the only instantiation of the class as there is only one PC Chair associated with one conference with all the admin functionalities.

DESIGN PATTERNS (CREATIONAL)

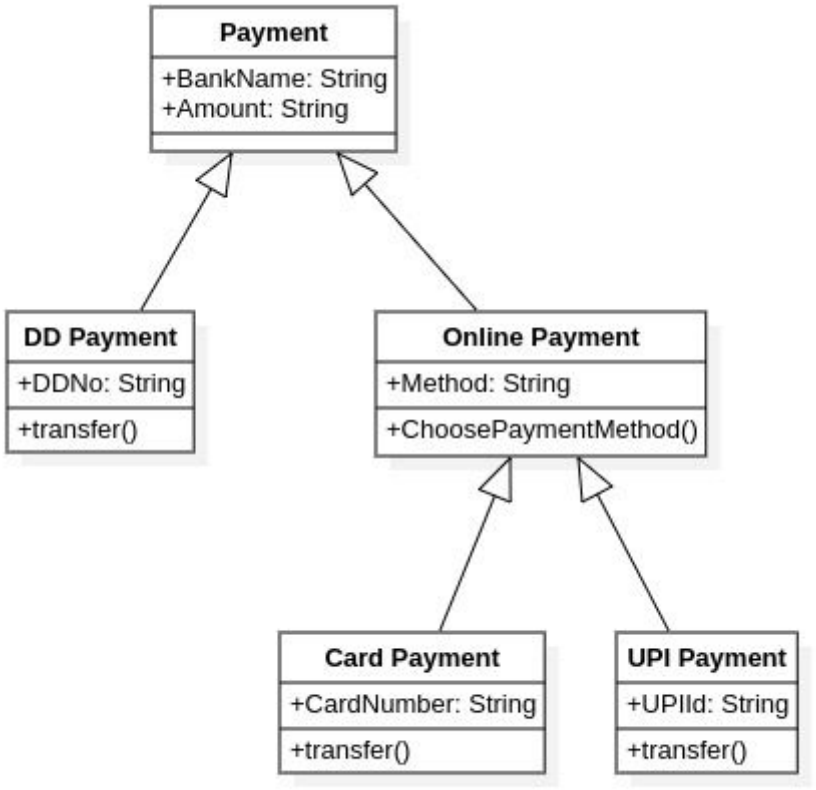
2. FACTORY METHOD



Def: Factory Method says that define an interface or abstract class for creating an object but let the subclasses decide which class to instantiate.
Here the **Person** subclass decides which object to instantiate, i.e., author, reviewer or PC chair.

DESIGN PATTERNS (STRUCTURAL)

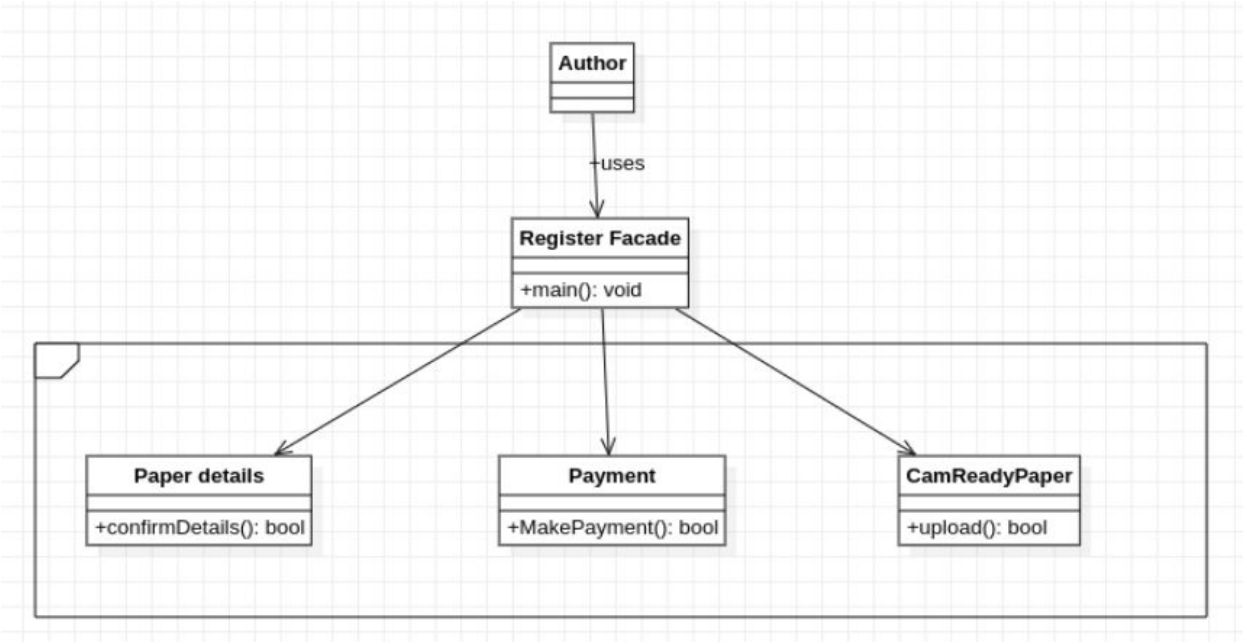
3. BRIDGE



Def: Bridge Pattern is meant to decouple an abstraction from its implementation so that the two can vary independently. The bridge uses encapsulation, aggregation and can use inheritance to separate responsibilities into different classes.
The class diagram is self explanatory.

DESIGN PATTERNS (STRUCTURAL)

4. FACADE

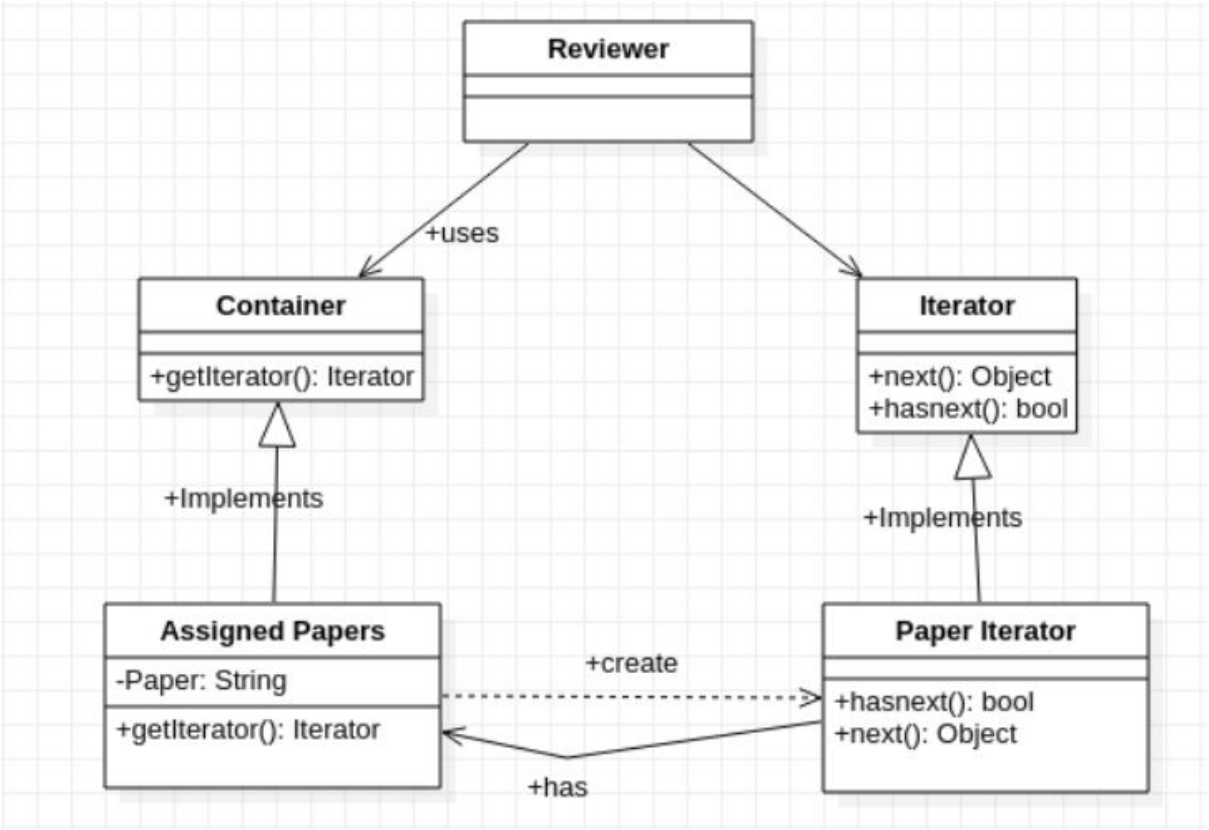


Def: A facade is an object that serves as a front-facing interface masking more complex underlying or structural code. It has common interface for a complicated set of interdependent subsystems.

Here, **RegisterFacade** is the front facing interface for the underlying complex subsystems, i.e., filling the paper details, payment and camera ready paper which are interdependent on each other.

DESIGN PATTERNS (BEHAVIORAL)

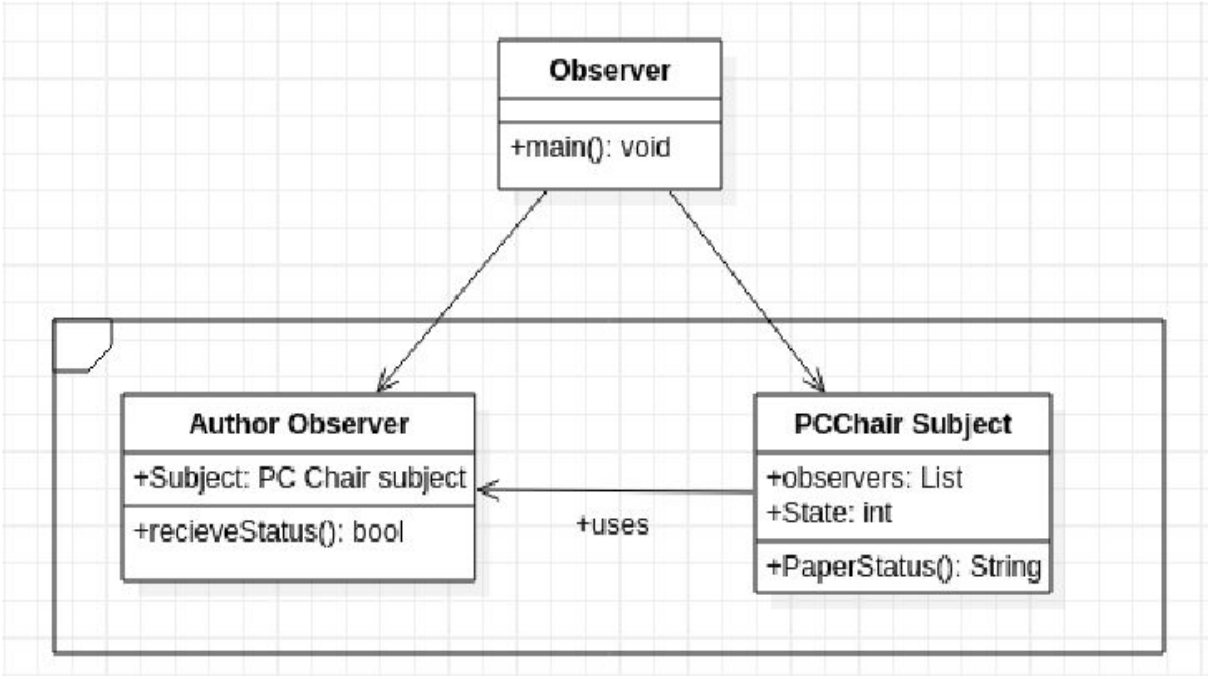
5. ITERATOR



Def: Iterator pattern is a pattern in which an iterator is used to traverse a container and access the container's elements. The iterator pattern decouples algorithms from containers.
Here, **Reviewer** creates a container which contains the papers assigned to him and the iterator is used to access the elements of the container.

DESIGN PATTERNS (BEHAVIORAL)

6. OBSERVER



Def: Observer pattern is a pattern in which an object, called the subject, maintains a list of its dependents, called observers, and notifies them automatically of any state changes, usually by calling one of their methods.
Here, **PC Chair object** is the **subject** which maintains a list of the **authors (observers)** where in the PC Chair notifies the authors of the status by calling the PaperStatus method .

THANK YOU