Software Requirements Specification

FOR

Doctoral progress Tracker

Version 1.0

Prepared by

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1.INTRODUCTION

1.1 Purpose

The **Doctoral Students Progress Tracker** is designed to streamline the management of Ph.D. students' academic progress by providing a structured and automated system. It enables students, Ph.D. supervisors, and coordinators to efficiently monitor key milestones, coursework, publications, and exam results.

1.2 Scope Summary

The Doctoral Student's Progress Tracker is designed to streamline the academic progress management of Ph.D. students. The system enables students, supervisors, and coordinators to efficiently track and manage key milestones, research activities, and coursework. The following functionalities define the scope of the system:

- **Student Management**: Students can log in via Gmail, update their profiles, change passwords, and communicate with supervisors and coordinators.
- **Comprehensive Exam Tracking**: Students can view their exam results, request re-examinations, and track exam status, with coordinators managing exam approvals and scheduling.
- **Publication Tracking**: Students can upload research publications, while Ph.D. coordinators review and verify them before approval.
- **Coursework & SWAYAM Management**: Students can register for SWAYAM and coursework requests, which coordinators review and approve or reject.
- **Personal Repository**: Students can maintain and access academic files in a personal repository for easy document management.
- **DC Meeting Management**: Students upload DC meeting minutes after meetings, supervisors review and suggest modifications, and coordinators provide final approval.
- **Supervisor Functionalities**: Supervisors track student progress, review research milestones, access submitted DC meeting minutes, and monitor students' publications.
- **Coordinator Functionalities**: Ph.D. coordinators oversee student registrations, faculty assignments, coursework approvals, publication verification, and academic progress monitoring.

This system ensures a structured and transparent approach to managing doctoral student progress, fostering efficiency in academic tracking and communication among all stakeholders.

1.3 Definitions, Acronyms and Abbreviations

S.No.	Abbreviations	Definition
1.	SRS	Software Requirements Specifications
2.	DC	Doctoral Committee
3.	User	Ph.D. Students
4.	Admin	Ph.D Coordinator

1.4 Document Conventions

This document follows the IEEE formatting requirements.

1.6 References and Acknowledgments

- https://online.visual-paradigm.com/diagrams/templates/use-case-diagram
- IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998

2. FUNCTIONAL REQUIREMENTS

2.1. User

F1 - Students should be able to log in with Gmail.

F2 - Students should have the ability to edit and update their profiles, including personal and academic details.

F3 - Students should be able to upload DC meeting minutes for review after the meeting.

F4 - Students should be able to track the status of their comprehensive exams.

F5 - Students should be able to request a re-examination .

F6 - Students should be able to upload research publications for verification.
F8 - Students should be able to register for SWAYAM coursework .

F9 - Students should receive notifications about approvals or rejections of SWAYAM coursework requests.

2.2 Ph.D. Supervisor Functional Requirements

F11 - Supervisors should be able to view student progress .

F12 - Supervisors should have access to students' submitted DC meeting minutes.

F13 - Supervisors should be able to approve or request modifications to DC meeting minutes.

F14 - Supervisors should be able validate to students' publications and research activities.

F15 – Supervisors approves examination requests .

2.3 Ph.D. Coordinator Functional Requirements

F18 - Coordinator should be able to publish exam results.

F20 - Coordinator should able to view student research publications.

F21 - Coordinator should uploads SWAYAM courses.

F22 – Coordinator announces exam dates.
F24- Coordinator approves/ reject Swayam course registration .

3. Non Functional Requirements

3.1 System Responsiveness:

The doctoral progress tracker is designed to respond to user actions within one or two seconds for standard operations such as logging in, tracking research milestones, viewing progress reports, and accessing academic resources.

3.2 Scalability:

The system is capable of handling a large volume of data, including information on doctoral candidates, their research milestones, publications, coursework, and committee reviews. It will support concurrent users to ensure smooth performance even during peak times.

3.3 Safety and Security Requirements

3.3.1 Data Security:

All user data, including personal and research-related information, will be securely stored in a protected database. Sensitive data will be encrypted to prevent unauthorized access.

3.3.2 User Privacy:

The system will comply with data privacy regulations, ensuring responsible data collection and limited access to authorized personnel such as students, advisors, and administrative staff.

3.4 Software Quality Attributes

3.4.1 Reliability:

The system will operate efficiently and provide accurate results without lag.

3.4.2 Adaptability:

The system can be extended to other institutions and academic organizations as needed.

3.4.3 Maintainability:

The system is designed with well-documented architecture to allow easy error rectification and future updates.

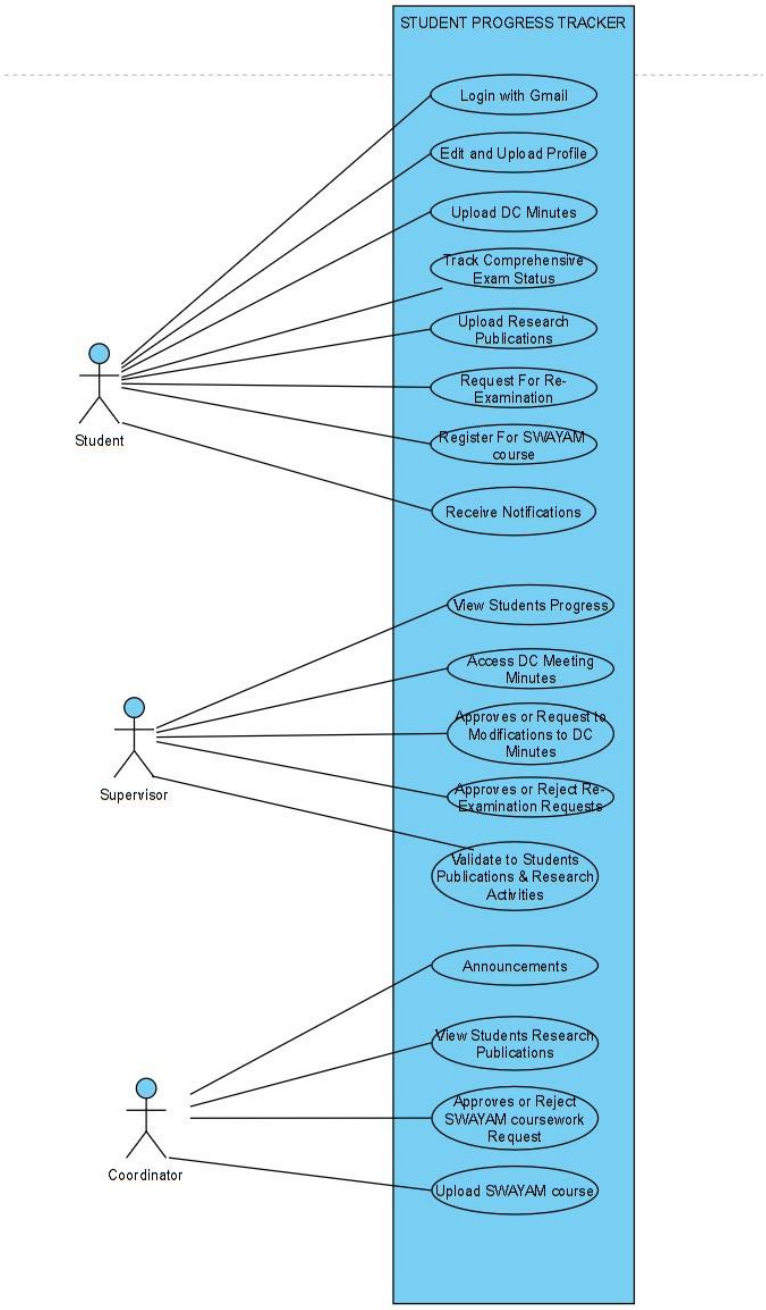
3.4.4 Portability:

The system can be deployed on multiple devices, including desktops, laptops, and mobile devices.

3.4.5 Cost-effectiveness:

The system is designed to be cost-efficient, making it feasible for adoption by academic institutions and research organizations.

4. Use cases Diagram



Use Cases for Student

1. **Student Use Cases**

1.1 Log in with Gmail

- **Actors**: Student
- **Preconditions**: Student has a valid Gmail account.
- **Steps**:
    1. Student enters Gmail credentials.
    2. System verifies authentication.

3. Student is granted access.

- **Postconditions**: Student is logged into the system.

1.2 Edit and Update Profile

- **Actors**: Student
- **Preconditions**: Student is logged in.
- **Steps**:
  1. Student navigates to the profile section.
  2. Updates personal and academic details.
  3. Saves changes.
- **Postconditions**: Updated profile is stored in the system.

1.3 Upload DC Meeting Minutes

- **Actors**: Student
- **Preconditions**: DC meeting has been conducted.
- **Steps**:
  1. Student accesses the meeting section.
  2. Uploads the meeting minutes.
  3. Submits for approval.
- **Postconditions**: Meeting minutes are sent to the Ph.D. Coordinator.

1.4 Track Comprehensive Exam Status

- **Actors**: Student
- **Preconditions**: Exam results have been published.
- **Steps**:
  1. Student accesses the exam status section.
  2. Views results and progress.
- **Postconditions**: Student sees updated exam status.

1.5 Request Re-examination

- **Actors**: Student
- **Preconditions**: Comprehensive exam has been conducted.
- **Steps**:
  1. Student submits a re-exam request.
  2. Coordinator reviews and approves/rejects request.

- **Postconditions**: Re-exam status is updated.

1.6 Upload Research Publications

- **Actors**: Student
- **Preconditions**: Research paper is ready for submission.
- **Steps**:
    1. Student uploads the publication.
    2. Coordinator reviews and verifies submission.
- **Postconditions**: Paper is approved or rejected.

1.7 Register for SWAYAM Courses

- **Actors**: Student
- **Preconditions**: Course registration is open.
- **Steps**:
    1. Student selects SWAYAM course.
    2. Submits enrollment request.

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    3. Coordinator approves/rejects request.
- **Postconditions**: Enrollment status is updated.

1.8 Receive Notifications

- **Actors**: Student
- **Preconditions**: Notifications are available.
- **Steps**:
    1. Student receives system-generated alerts.
- **Postconditions**: Student is informed of important updates.

2. Ph.D. Supervisor Use Cases

2.1 Track Student Progress

- **Actors**: Ph.D. Supervisor
- **Preconditions**: Student progress data is available.
- **Steps**:
    1. Supervisor views student progress records.
    2. Reviews milestones and achievements.
- **Postconditions**: Supervisor is updated on student status.

2.2 Access DC Meeting Minutes

- **Actors**: Ph.D. Supervisor
- **Preconditions**: Student has uploaded minutes.
- **Steps**:
    1. Supervisor views meeting minutes.
- **Postconditions**: Supervisor accesses meeting records.

2.3 Approve or Request Modifications to DC Meeting Minutes

- **Actors**: Ph.D. Supervisor
- **Preconditions**: Student has submitted meeting minutes.
- **Steps**:
    1. Supervisor reviews submission.
    2. Approves or requests changes.
- **Postconditions**: Meeting minutes are updated accordingly.

2.4 validate Students' Publications

- **Actors**: Ph.D. Supervisor
- **Preconditions**: Student has submitted a publication.
- **Steps**:
    1. Supervisor views publication status.
- **Postconditions**: Supervisor tracks student research output.

2.5 Approve or Reject Re-examination Requests

- **Actors**: supervisor
- **Preconditions**: Student has requested re-exam.
- **Steps**:
    1. supervisor reviews request.
    2. Approves or rejects request.

Postconditions: Re-exam status is updated.

3. Ph.D. Coordinator Use Cases

3.1 Approve or Reject Student swayam coursework Registration Requests

- **Actors**: Ph.D. Coordinator

- **Preconditions**: Student registration is pending approval.
- **Steps**:
    1. Coordinator reviews registration details.
    2. Approves or rejects request.
- **Postconditions**: Student status is updated.

3.2 View DC Meeting Minutes

- **Actors**: Ph.D. Coordinator
- **Preconditions**: Student has submitted DC meeting minutes.
- **Steps**:
    1. Coordinator reviews meeting records.
- **Postconditions**: Meeting minutes are finalized.

3.3 Publish and Manage Exam Results

- **Actors**: Ph.D. Coordinator
- **Preconditions**: Exam results are available.
- **Steps**:
    1. Coordinator uploads exam results.
- **Postconditions**: Students can view results.

3.4 Veiw Student Research Publications

- **Actors**: Ph.D. Coordinator
- **Preconditions**: Student has submitted a publication.
- **Steps**:
    1. Coordinator reviews research work.
    2. Approves or requests revisions.
- **Postconditions**: Publication is validated.

3.5 Manage SWAYAM course Enrollment Approvals

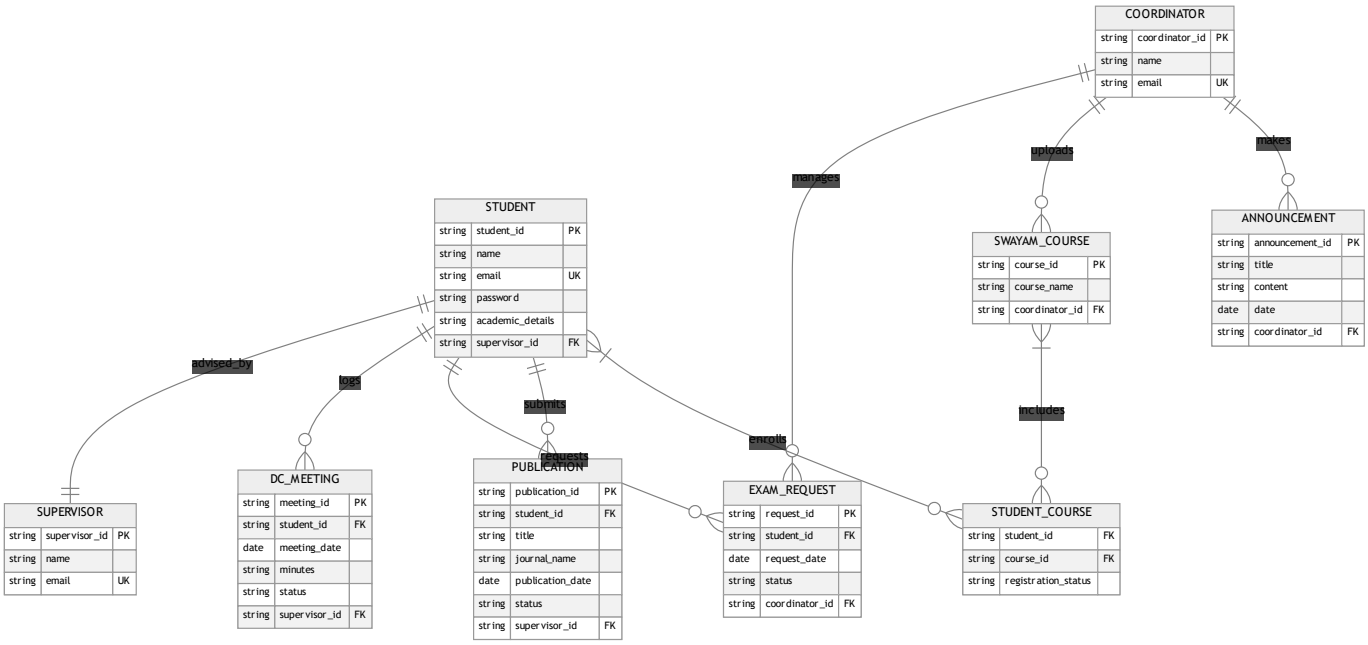
- **Actors**: Ph.D. Coordinator
- **Preconditions**: Students have submitted requests.
- **Steps**:
    1. Coordinator reviews coursework requests.
    2. Approves or rejects requests.
- **Postconditions**: Enrollment status is updated.

5. Software Requirements:

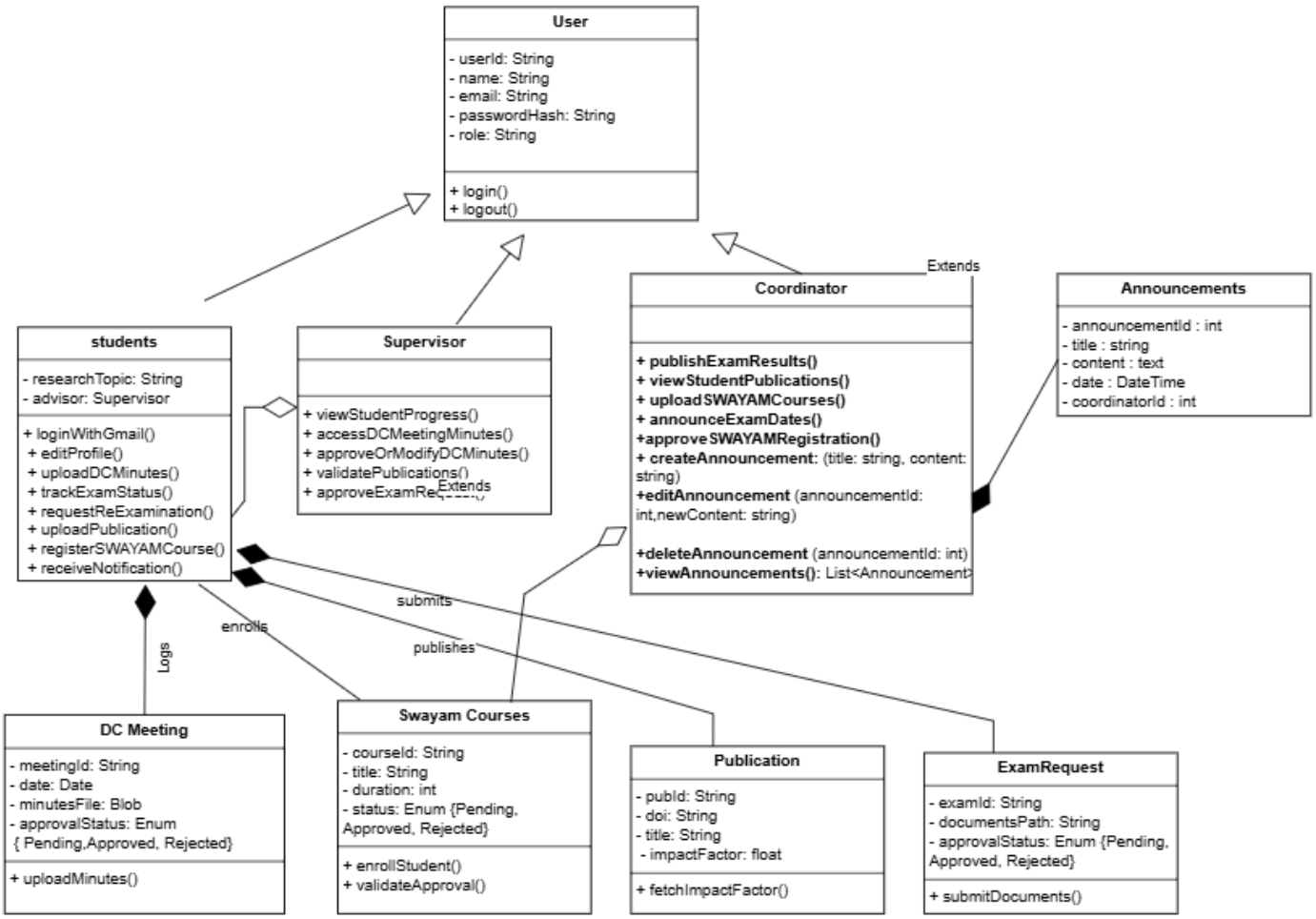
5.1 System Requirements

- Operating System: Compatible with Windows, Linux, and macOS.
- RDBMS: MySQL

6.Database Diagram (ER diagram)



7.Class Diagram



5.2 Technology Stack

- Frontend: HTML, Thymeleaf
- Backend: Java Spring Boot
- Database: MySQL
- Development Tools: Maven

THANK YOU !