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** provides key functionalities for students, supervisors, and coordinators:

- **Student Management**: Students can update their profiles and passwords.
- **DC Meeting Management**: Students request meetings, coordinators approve/reject slots, and supervisors oversee meetings and minutes.
- **Comprehensive Exam Tracking**: Students track results and request re-examinations.
- **Publication Tracking**: Students upload publications, and coordinators verify them.
- **Coursework & SWAYAM Management**: Students register for courses, submit requests, and coordinators approve/reject them.
- **Personal Repository**: Students store and access academic files.
- **Supervisor Functionalities**: Supervisors track student progress, review milestones, and manage meetings.

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 Roles & Functionalities

2.1.1 Student

- Profile Management – Update personal details, change passwords.
- DC Meetings – View scheduled meetings, upload discussion write-ups, and access meeting logs.
- Comprehensive Exam – View results and request re-examinations.
- Publication Tracking – Upload and track research publications.
- Swayam Courses – Register for courses and submit enrollment requests.
- Coursework Requests – Submit coursework-related approvals.

- Personal Repository – Maintain and access academic files.

2.1.2 Ph.D. Supervisor

- DC Meetings – Organize and manage student meetings.
- Monitor Student Progress – Track student participation and research milestones.

2.1.3 Ph.D. Coordinator

- Student & Faculty Management – Approve student requests, assign supervisors.
- DC Meeting Coordination – Announce schedules, oversee meeting outcomes.
- Results & Publications Management – Approve and publish exam results, monitor research publications.
- Comprehensive Exam Management – Review and process exam requests, manage re-examinations.
- Publication Approval – Verify and approve student research publications.
- Coursework Approvals – Approve or reject coursework and SWAYAM course requests.

2.2 DC Meeting Functionality

2.2.1 DC Meeting Process

1. **Student Requests a DC Meeting**

   . Student submits a request with **proposed slots**.

   . The system records the request and notifies the **Ph.D. Coordinator**.

2. **Ph.D. Coordinator Reviews & Approves/Rejects**

   . The Coordinator checks **faculty availability** and **confirms a slot**.

. If approved, the student and faculty receive a **confirmation notification**.

. If rejected, the student must **resubmit** with different slots.

3. **Meeting Conducted**

. Students and faculty participate in the approved meeting slot.

. Discussions and decisions are noted.

4. **Student Uploads Meeting Minutes**

. After the meeting, the student uploads the meeting minutes.

. The Coordinator reviews and **approves/rejects** the minutes.

5. **Final Approval & Submission**

. If approved, the student prints the signed minutes and submits them to the department**.**

. If rejected, the student must **edit and resubmit**.

2.3 Paper Publication Workflow

2.3.1 Student Submits a Paper

. Student uploads the research paper along with necessary metadata.

. The system records the submission and notifies the Ph.D. Coordinator.

Ph.D.

2.3.2 Coordinator Reviews & Approves/Rejects

- The Coordinator verifies the submission for compliance and relevance.
- If approved, the paper is marked as "Accepted" and can be tracked.
- If rejected, the student must revise and resubmit.

2.3.2 Publication Tracking

. Students can monitor the status of their submitted publications.

. Once published, DOI or journal details are added to the system.

2.4 SWAYAM Course Workflow

2.4.1 Student Requests Course Enrollment

- Student selects a SWAYAM course and submits an enrollment request.
- The request is recorded and forwarded to the Ph.D. Coordinator.

2.4.2 Ph.D. Coordinator Reviews & Approves/Rejects

- The Coordinator evaluates the course relevance and availability.
- If approved, the student is enrolled and notified.
- If rejected, the student must select a different course.

2.4.3 Completion & Certification

- Students complete the course and upload certification proof.
- The Coordinator verifies the completion and updates student records.

2.5 Comprehensive Exam Workflow

2.5.1 Student Request a Comprehensive Exam

- Student submits a request to schedule a comprehensive exam.
- The request is forwarded to the Ph.D. Coordinator.

2.5.2 Exam Conducted & Results Processed

- The exam is conducted as per the schedule.
- The evaluation committee reviews the student's performance.

2.5.3 Student Views Results & Requests Re-Examination

- Results are uploaded and made accessible to students.
- If necessary, the student can submit a request for a re-examination.

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 numerous doctoral candidates, their research milestones, publications, coursework, and committee reviews. It will also support a high number of concurrent users, ensuring smooth performance even during peak usage times.

3.3 Safety and Security Requirements

3.3.1 Data Security:

All user data, including personal and research-related information, will be stored securely 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 that user data is collected and stored responsibly, with access limited to authorized personnel such as students, advisors, and administrative staff.

3.4 Software Quality Attributes

3.4.1 Reliability:

The system will operate without lag and provide instant and accurate results to all users.

3.4.2 Adaptability:

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

3.4.3 Maintainability:

In case of errors, they can be rectified by any developer due to the ease of maintenance and well-documented system architecture.

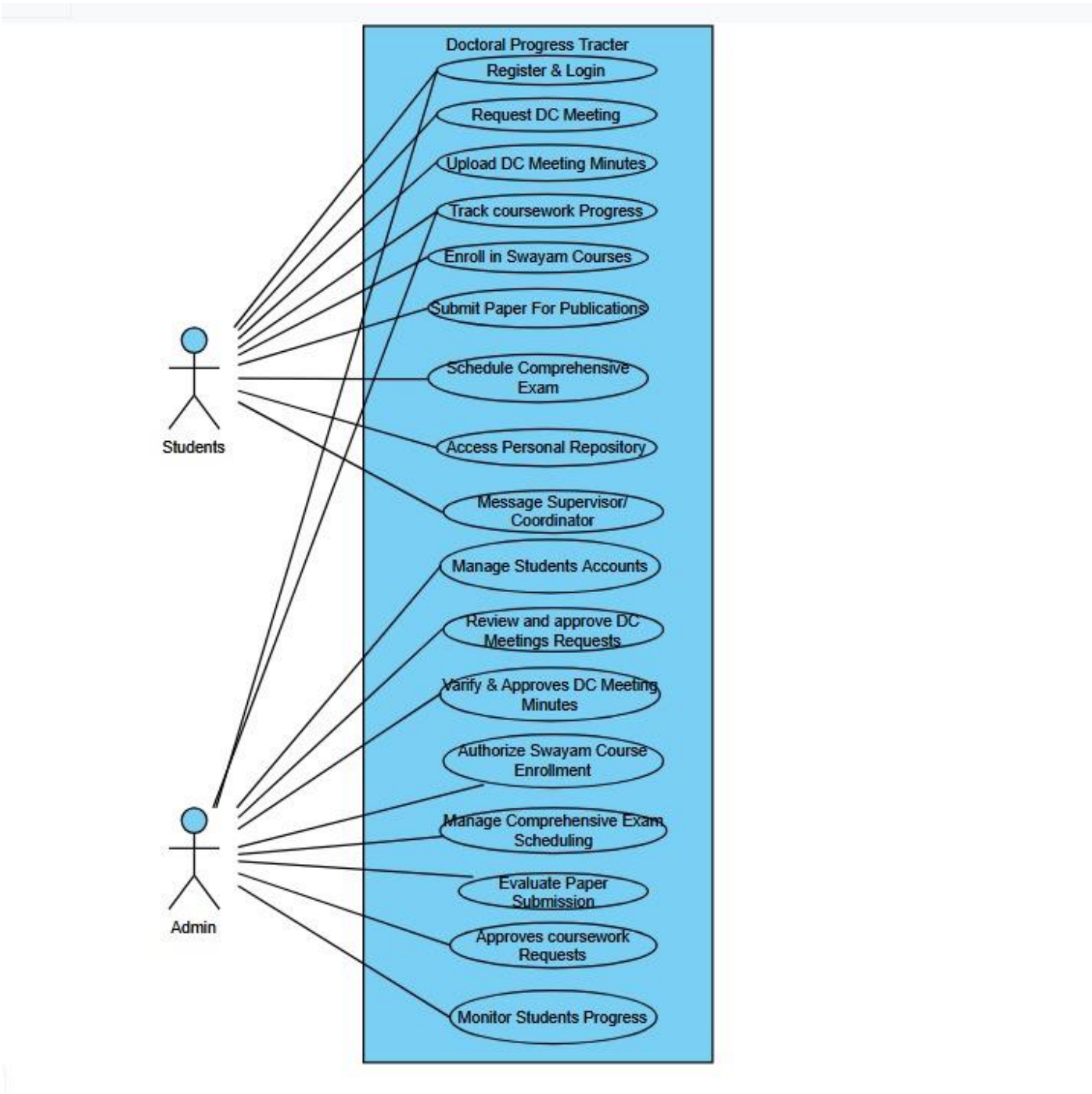
3.4.4 Portability:

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

The database is structured for user-friendly interaction.

3.4.5 Cost-effectiveness:
The system is designed to be cost-effective and feasible for adoption by any academic institution or research organization.

4. Use cases Diagram



Use Cases for Student

1. **Register & Login**
   .Student registers an account.
   . Logs in using credentials.
2. **Request DC Meeting**
   Submits a request with proposed slots.

- Receives confirmation/rejection notification.

3. **Upload DC Meeting Minutes**

   .Uploads meeting minutes after approval.

   . Resubmits if rejected.

4. **Track Coursework Progress**

   .Views approved courses.

   . Requests new coursework approval.

5. **Enroll in SWAYAM**

   . Requests enrollment.

   . Uploads completion certificate.

6. **Submit Paper for Publication**

   . Uploads research paper details.

   . Tracks publication status.

7. **Schedule Comprehensive Exam**

   . Requests exam scheduling.

   . Views exam results and requests re-examination.

8. **Access Personal Repository**

   . Uploads and stores research documents.

   . Retrieves past academic records.

9. **Message Supervisor/Coordinator**

   . Sends inquiries or updates about progress.

Use Cases for Admin (Coordinator/Supervisor)

1. **Manage Student Accounts**

   . Approves/rejects student registration.
   Resets passwords.

2. **Review & Approve DC Meeting Requests**

   . Confirms faculty availability.

   . Approves/rejects meeting requests.

3. **Verify & Approve DC Meeting Minutes**

   . Reviews uploaded meeting minutes.

   . Approves or requests changes.

4. **Approve Coursework Requests**

. Validates and approves coursework selection.

5. **Authorize SWAYAM Course Enrollment**
   . Reviews student enrollment requests.
   . Confirms completion and certifies records.
6. **Evaluate Paper Submissions**
   . Checks compliance and relevance.
   . Approves or asks for revision.
7. **Manage Comprehensive Exam Scheduling**
   . Schedules exams for students.
   . Uploads and manages exam results.
8. **Monitor Student Progress**
   . Views reports on student milestones.
   . Sends feedback and recommendations.

5. Software Requirements:

5.1 System Requirements

- Operating System: Compatible with Windows, Linux, and macOS.
- RDBMS: MySQL or equivalent.
- Web Browser: Latest versions of Google Chrome, Mozilla Firefox, and Safari.

5.2 Technology Stack

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

THANK YOU !