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Sathyamangalam - 638401 Erode District, Tamil Nadu, India

SOFTWARE REQUIREMENT SPECIFICATION FOR NPTEL COURSE EXEMPTION

Name	KUDIARASU S
Roll number	7376222AD158
Project Id	15
Project Title	NPTEL Course Exemption
Seat No	245

Technical Components :

Components	Tech Stack
Front end	Reactjs
Backend	Express js
Database	MongoDB
API	Restful API services

Implementation Timeline :

Phase	Deadline	Status	Note
Stage 1		In progress	Planning and Requirement Gathering
Stage 2		Not Started	Design and Prototyping
Stage 3		Not Started	DB Design and Implementation
Stage 4		Not Started	Backend Implementation
Stage 5		Not Started	Testing & Implementation

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Introduction

The purpose of this document is to present a detailed description of the NPTEL course exemption project. The NPTEL course exemption project aims to recognize and exempt students from certain university course requirements based on their successful completion of equivalent courses offered by the National Programme on Technology Enhanced Learning (NPTEL). This system will facilitate the exemption process, enable students to submit course details, upload certificates, choose reward points or course exemptions, and allow administrators to review and monitor student progress.

System Overview

The NPTEL course exemption system is designed to streamline the process of recognizing and granting course exemptions to students who have completed relevant NPTEL courses. The system will:

- Allow students to submit their NPTEL course details.
- Enable students to upload their weekly assessment marks and exam certificates.
- Provide options for students to choose between reward points or course exemptions.
- Enable administrators to review and monitor student progress, review certificates, and grant exemptions or reward points.

User Roles

Students

- Submit course details including course name, description, duration, and course provider.
- Upload weekly assessment marks.
- Upload exam certificates.
- Choose between reward points and course exemption.
- Provide additional details based on their choice.
- View the status of their course exemption requests.

Administrators

- Review and approve or reject course exemption requests.
- Monitor weekly progress of students.
- Review submitted certificates.
- Grant course exemptions or reward points based on the student's choice.
- Access detailed reports on student performance and course details.

Functionalities

For Students

- **Course Submission:** Submit details of the completed NPTEL course.
- **Weekly Assessment Upload:** Upload weekly assessment marks for the completed course.
- **Certificate Upload:** Upload the exam certificate.
- **Choose Exemption Type:** Choose between reward points or course exemption.
  - **Reward Points:** Submit the mark percentage obtained in the exam.
  - **Course Exemption:** Provide details of the semester, course code, and course name for which the exemption is requested.
- **Status Tracking:** Track the status of their course exemption or reward points requests.

For Administrators

- **Review Submissions:** Review course details, weekly assessment marks, and certificates submitted by students.
- **Progress Monitoring:** Monitor the weekly progress of students.
- **Approval/Rejection:** Approve or reject course exemption or reward points requests based on provided information.
- **Granting Rewards/Exemptions:** Provide course exemptions or reward points based on student preferences.
- **Reporting:** Generate detailed reports on student progress and course details.
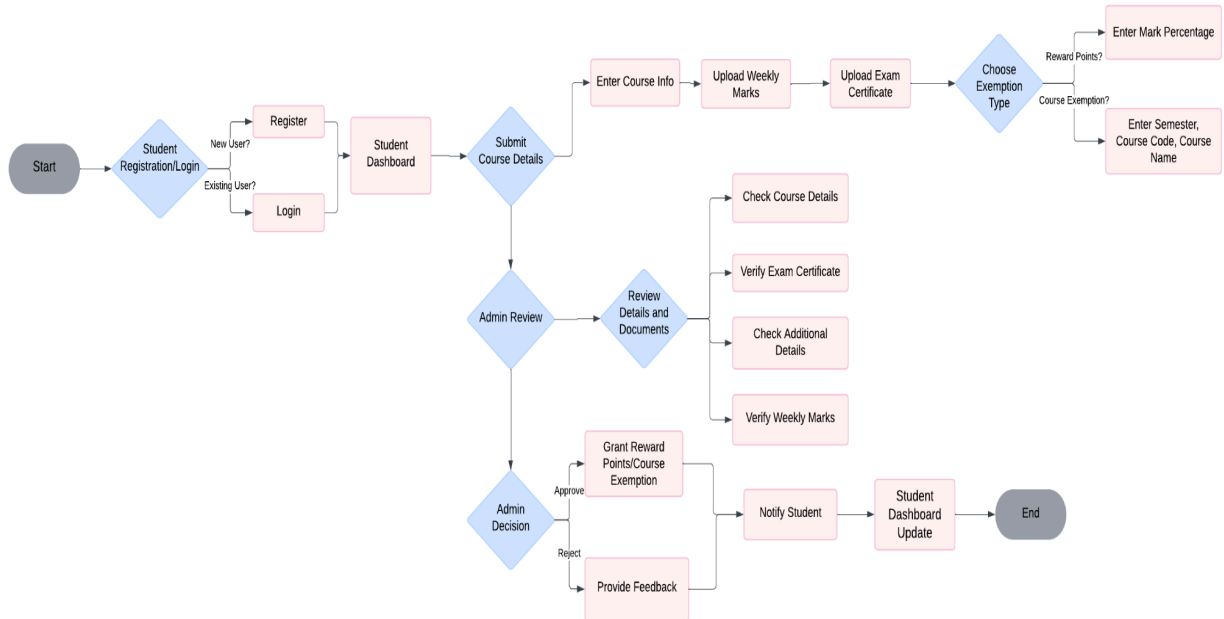
Functional Requirements

Student Portal

1. **Login/Registration:** Students must be able to register and log in to the system.
2. **Course Submission Form:** Students should fill out a form to submit their NPTEL course details.
3. **Weekly Assessment Upload:** Interface for students to upload their weekly assessment marks.
4. **Certificate Upload:** Interface for students to upload their exam certificates.
5. **Choose Exemption Type:** Form for students to choose between reward points or course exemption and provide additional details.
6. **Status Dashboard:** Dashboard for students to view the status of their exemption or reward points requests.

Administrator Portal

1. **Login:** Secure login for administrators.
2. **Review Dashboard:** Dashboard displaying all pending course exemption or reward points requests.
3. **Student Progress Monitoring:** Tools to monitor and review weekly progress of students.
4. **Certificate Review:** Interface to review submitted certificates.
5. **Approval/Rejection:** Interface to approve or reject course exemption or reward points requests.
6. **Granting Rewards/Exemptions:** Tools to provide course exemptions or reward points based on student preferences.
7. **Reporting Tools:** Generate reports on student submissions and performance.

FLOW CHART :

Technical Specifications

- **Frontend:** ReactJS
- **Backend:** Node.js, Express.js
- **Database:** MongoDB
- **Authentication:** JWT (JSON Web Tokens)
- **Hosting:** AWS

Implementation Details

1. **Frontend Development:**
   - Develop user interfaces for students and administrators.
   - Implement forms for course submission, weekly assessment uploads, and certificate uploads.
   - Create dashboards for status tracking and progress monitoring.

2. **Backend Development:**
   - Set up server and database connections.
   - Implement API endpoints for course submission, assessment uploads, certificate uploads, and review processes.
   - Ensure secure authentication and authorization.
3. **Database Design:**
   - Design schema for storing course details, assessment marks, certificates, and user information.
   - Implement data validation and integrity checks.
4. **Testing:**
   - Conduct unit testing for individual components.
   - Perform integration testing to ensure seamless interaction between components.
   - Conduct user acceptance testing (UAT) to validate functionality.

Future Enhancements

- **Automated Notifications:** Implement email or SMS notifications for status updates and reminders.
- **Advanced Reporting:** Develop advanced analytics and reporting features for deeper insights.
- **Mobile App:** Create a mobile application for easier access and convenience.
- **Integration with University Systems:** Integrate with university's existing systems for seamless data exchange.

Conclusion

The NPTEL course exemption project aims to simplify the process of recognizing and exempting students from university course requirements based on their completion of NPTEL courses. By providing a platform for students to submit their course details, weekly assessments, and certificates, and for administrators to monitor and review progress, this system will enhance the efficiency and transparency of the exemption process. Future enhancements will further improve functionality and user experience, making it a valuable tool for both students and administrators.