ADMINISTRATOR REPORT SYSTEM FORMOODLE

PROJECT SYNOPSIS
OF MAJOR PROJECT

BACHELOR OF TECHNOLOGY
COMPUTER SCIENCE & ENGINEERING

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1. Introduction

Moodle is a popular open-source learning management system (LMS) that provides a platform for creating and managing online courses and educational content. It is widely used by educational institutions, businesses, and other organizations to deliver online learning environments that support a range of features and tools, such as discussion forums, quizzes, multimedia content, and more. Moodle allows instructors to create and manage courses, add content, and interact with students. It also provides a variety of features to support assessment and grading, reporting and analytics, communication and collaboration, and customization. With its flexibility and extensive range of features, Moodle is an effective and reliable tool for delivering online education to a wide range of learners.

It provides various tools and plugins for managing attendance. Here are some of the ways you can set up an attendance system in Moodle:

Install and activate the Attendance module: Moodle has a built-in Attendance module that allows you to create and manage attendance activities for your courses. You can install this module from the Moodle plugins directory and activate it in your course settings.

Create attendance sessions: Once the Attendance module is activated, you can create attendance sessions for your course. You can set up attendance sessions for each class or meeting, and specify the start and end times for each session.

Mark attendance: Students can mark their own attendance in Moodle by logging in and clicking on the attendance activity. You can also mark attendance for students manually if necessary.

Set up attendance grading: You can set up grading criteria for attendance in Moodle, which can be linked to your course gradebook. You can specify the weighting of attendance in the final grade and set up rules for calculating grades based on attendance.

Monitor attendance: Moodle provides various tools and reports for monitoring attendance, including an attendance report that shows attendance data for each student in your course.

By setting up an attendance system in Moodle, you can streamline attendance tracking, improve communication with students, and enhance the accuracy of attendance data.

1.1 Objectives

1. To provide an interface to track attendance.
2. To provide permission setup for Administrator, Teacher and Student to keep records maintain.
3. To provide an interface for principal to check the live attendance.

2. SYSTEM REQUIREMENTS

2.1 SOFTWARE REQUIREMENTS

Operating System	Linux(Prefered), Windows 10 or above
Database	Mariadb/Mysql
Framework	Frappe framework, Moodle

Table 1: Software Requirements

2.2 HARDWARE REQUIREMENTS

RAM	4GB or higher
Hard Disk	512 GB or Higher
Processor	Intel Core or Pentium IV or higher

Table 2: Hardware Requirements

3. SOFTWARE REQUIREMENT ANALYSIS

We need to create the Administrator Report for Moodle project to improve the management and effectiveness of the Moodle learning management system, specifically in tracking the attendance and other activities of teachers.

This project can help administrators to monitor and analyze teacher activities more efficiently and effectively, allowing them to identify trends, issues, and areas for improvement. With access to detailed data on teacher activities, administrators can provide targeted support and feedback to individual teachers, improving their effectiveness and ultimately enhancing student outcomes.

Without a dedicated module for tracking attendance and other activities of teachers, administrators may struggle to manage and analyze data, resulting in inconsistent reporting and limited visibility into teacher activities. The project can help address these problems and improve the overall management and effectiveness of the Moodle learning management system

The key features of the module which we are creating includes:

Attendance tracking: The module allows administrators to track attendance data for individual teachers, including the number of classes attended, the number of classes missed, and the percentage of classes attended.

Progress tracking: The module provides an easy way for administrators to track the progress of individual teachers over time, including improvements or declines in attendance and other activities.

Reporting: The module can generate a wide range of reports on teacher activities, including attendance, grading, assignment submissions, and online discussion participation. These reports can be customized to meet the needs of individual administrators or departments.

Dashboard: The module includes a user-friendly dashboard that provides a quick overview of teacher activities, including attendance data and other key metrics.

3.1 DEFINE MODULES AND FUNCTIONALITIES

The Administrator Report for Moodle project is a custom module designed to help administrators track the attendance and other activities of teachers within the Moodle learning managementsystem. The module consists of several key modules and functionalities that work together to provide administrators with a comprehensive view of teacher activities. These modules and functionalities include:

Attendance tracking module: This module is designed to track attendance data for individual teachers. It allows administrators to mark attendance, track tardiness or early departures, and generate alerts or notifications for excessive absences. The attendance tracking module may also include features such as customizable attendance settings, automatic attendance grading, and attendance history tracking.

Activity tracking module: The activity tracking module is designed to track other activities of teachers such as grading, assignment submissions, and participation in online discussions. It allows administrators to monitor and analyze teacher activity data, identify trends and patterns, and provide targeted support and feedback to individual teachers.

Reporting module: The reporting module generates a wide range of reports on teacher activities, including attendance, grading, assignment submissions, and online discussion participation. The reports can be customized to meet the needs of individual administrators or departments and may include charts, graphs, or other visualizations to aid in data analysis.

Dashboard module: The dashboard module provides an easy-to-use interface for administrators to view key metrics and data on teacher activities, such as attendance rates, grading performance, and participation in online discussions. The dashboard may include real-time data updates and customizable settings to meet the needs of individual users.

Configuration module: The configuration module allows administrators to customize the settings and features of the Administrator Report for Moodle module. It provides options such as setting attendance thresholds, configuring grading metrics, and selecting report types and formats.

3.2 FRAMEWORKS

3.2.1 MOODLE

Moodle is an open-source learning management system (LMS) that provides educators with a framework for creating, managing, and delivering online courses. The Moodle framework is designed to be flexible and customizable, allowing educators to tailor their courses to meet the needs of their learners.

The Moodle framework is based on a modular architecture that includes a core set of features and functionality, as well as a wide range of plugins and extensions that can be added to extend the platform's capabilities. The core features of the Moodle framework include:

Course Management: Moodle provides educators with tools for creating and managing online courses, including the ability to organize course content into sections and topics, create assignments and quizzes, and track student progress.

User Management: Moodle allows administrators to manage user accounts, assign roles and permissions, and track user activity within the platform.

Communication and Collaboration: Moodle provides a range of communication and collaboration tools, including discussion forums, messaging, and web conferencing.

Assessment and Grading: Moodle allows educators to create assessments and grade student work, including the ability to provide feedback and gradebook management.

Reporting and Analytics: Moodle provides tools for generating reports and analyzing student data, including attendance reports, course completion reports, and learning analytics.

3.2.2 FRAPPE

Frappe Framework is an open-source web application framework that is built on top of the Python programming language and uses the popular JavaScript framework, jQuery, on the front end. It is designed to be modular, extensible, and easy to use, allowing developers to quickly create web applications and customize them to meet their specific needs.

The Frappe Framework includes a number of key features, including:

Database Management: Frappe provides a powerful database abstraction layer that makes it easy to interact with databases from within the framework. It supports multiple databases, including MySQL, MariaDB, and PostgreSQL.

User Interface: Frappe provides a clean and modern user interface that is easy to use and customize. It includes a number of built-in UI components, including forms, tables, and charts, as well as support for responsive design.

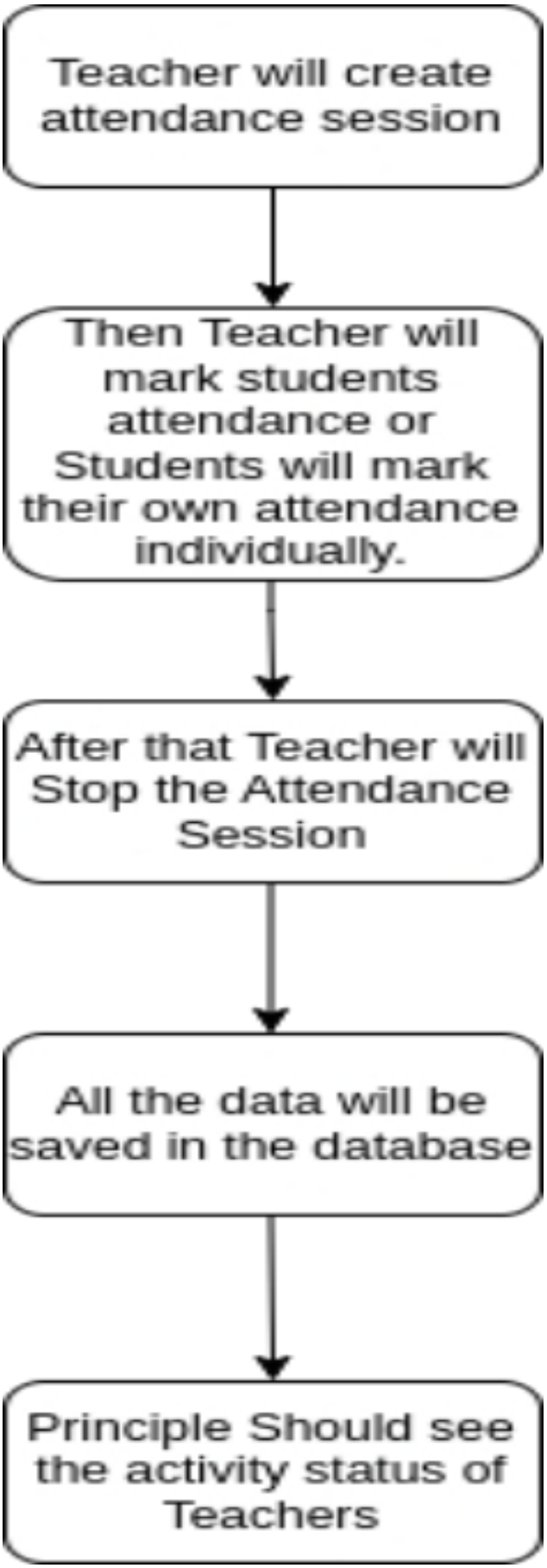
Workflow Management: Frappe includes a powerful workflow engine that makes it easy to manage complex business processes. It supports both linear and non-linear workflows, as well as automated notifications and alerts.

Security: Frappe includes robust security features, including encryption of sensitive data, role-based access control, and support for two-factor authentication.

Internationalization: Frappe includes support for multiple languages, making it easy to create applications that can be used in different regions of the world.

Extensibility: Frappe is highly extensible, allowing developers to add custom functionality through the use of apps, plugins, and custom scripts.

4. DATA FLOW DIAGRAM



5. CODING/CORE MODULE

5.1 INSTALLING MOODLE IN UBUNTU

1. Update the package index and upgrade the system:

sudo apt-get update

sudo apt-get upgrade

2. Install Apache web server, MySQL database, and PHP:

sudo apt-get install apache2 mysql-server php php-mysql libapache2-mod-php

3. Create a database for Moodle in MySQL and grant privileges to a new user:

sudo mysql -u root -p

CREATE DATABASE moodle DEFAULT CHARACTER SET utf8mb4 COLLATE utf8mb4_unicode_ci;

CREATE USER 'moodleuser'@'localhost' IDENTIFIED BY 'password';

GRANT ALL PRIVILEGES ON moodle.* TO 'moodleuser'@'localhost';

FLUSH PRIVILEGES;

exit;

4. Download and extract the latest Moodle package:

cd /tmp

wget https://download.moodle.org/stable$(curl https://download.moodle.org/stable | grep -oP '\/[0-9.]+\/moodle-[0-9.]+\.tgz' | head -1)

tar -zxvf moodle-*.tgz

sudo mv moodle /var/www/html/

5. Set the correct permissions on the Moodle directory:

sudo chown -R www-data:www-data /var/www/html/moodle

sudo chmod -R 755 /var/www/html/moodle

6. Configure Moodle by accessing your server's IP address or domain name in a web browser:

http://localhost/moodle

5.2 INSTALLING FRAPPE IN UBUNTU

1. Update the package index and upgrade the system:

sudo apt-get update

sudo apt-get upgrade

2. Install the required packages:

sudo apt-get install python3-minimal build-essential python3-setuptools python3-wheel python3-pip redis-server nginx mariadb-server libmariadb-dev libssl-dev libffi-dev libxml2-dev libxslt-dev libjpeg8-dev zlib1g-dev wkhtmltopdf

3. Create a new user for Frappe and grant it sudo privileges:

sudo adduser frappe

sudo usermod -aG sudo frappe

4. Switch to the frappe user and install the latest version of Frappe:

sudo su frappe

cd ~

pip3 install frappe-bench

5. Initialize a new Frappe site:

bench init frappe-bench --frappe-branch version-13 --skip-redis-config-generation

cd frappe-bench

bench new-site site1.local

6. Install and start the Frappe services:

bench --site site1.local install-app erpnext

bench start

7. Configure Nginx to serve the Frappe site:

sudo nano /etc/nginx/sites-available/frappe

8. Add the following configuration:

```
server {
    listen 80;
    server_name your_server_domain_or_ip;

    location / {
        proxy_pass http://localhost:8000;
        proxy_set_header Host $host;
        proxy_set_header X-Real-IP $remote_addr;
    }
}
```

9. Then, enable the Nginx site and restart the service:

sudo ln -s /etc/nginx/sites-available/frappe /etc/nginx/sites-enabled/

sudo nginx -t

sudo systemctl restart nginx

5.3 DATABASE TABLES AND THEIR FIELDS

5.3.1 REPORT BUILDER TABLE

Id	Int
Name	Varchar
Source	Varchar
Type	Int
Uniquerows	Int
Conditiondata	Longtext
Settingsdata	Longtext
Contextid	Int
Component	Varchar
Area	Varchar
Itemid	Int
Usercreated	Int
Usermodified	Int
Timecreated	Int
Timemodified	int

5.3.2 mdl_attendance_log TABLE

Id	Int
Sessionid	Int
Studentid	Int
Statusid	Int
Statusset	Char
Timetaken	Int
Takenby	Int
Remarks	Char
Ipaddress	char

6. PERFORMANCE OF THE PROJECT DEVELOPED SO FAR

Near about 50% of the project “Administrator Report for Moodle” has been completed till now. Teachers already taking the attendance of the students easily. All the data should record in database. Which is helpful to make a Report for Principal. Now Principal will see each and every activity status of teachers. All Teachers record successfully recorded in database with the help of the Report Builder Module of Moodle which we created for this project. Now we are working on to integrate this Report Builder Module in Frappe framework which is more userfriendly so Principal Sir will easily operate the Teachers Records. Now we are struggling about how to integrate this module in frappe.

7. OUTSCREENS

7.1 Create the course category

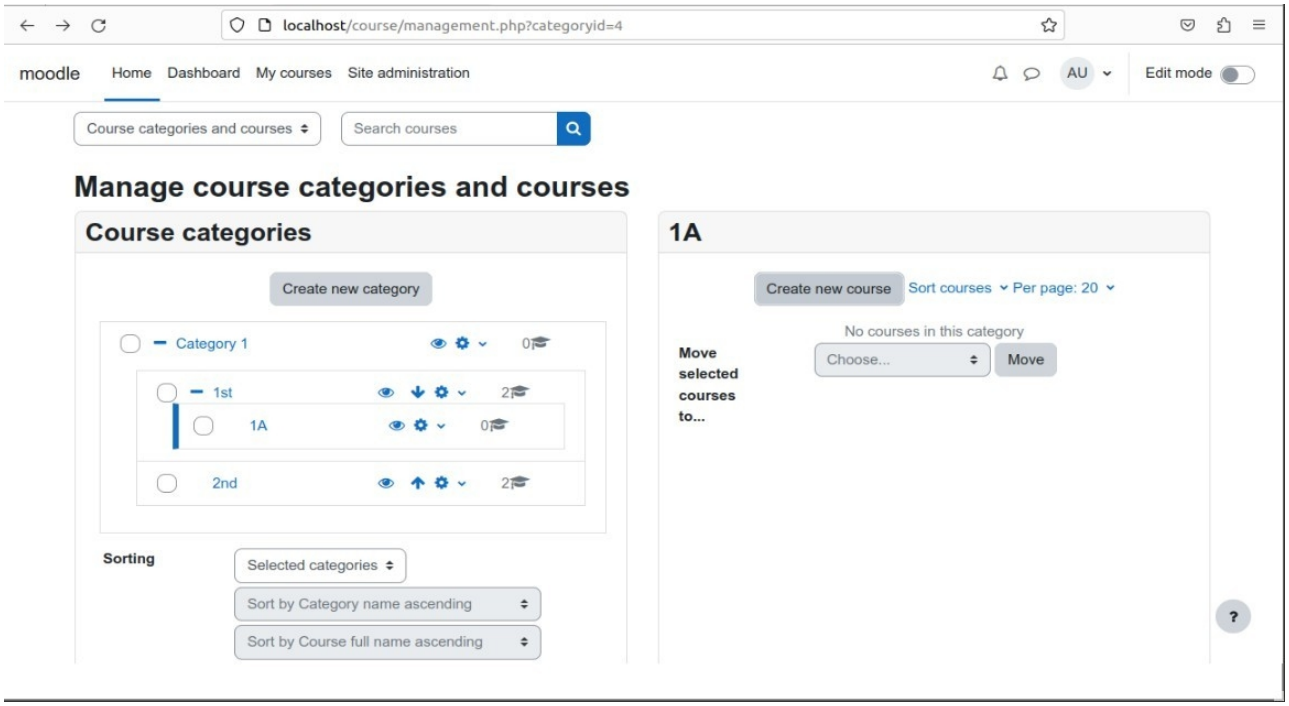


Figure 1: Course Category

7.2 Create the course under the category

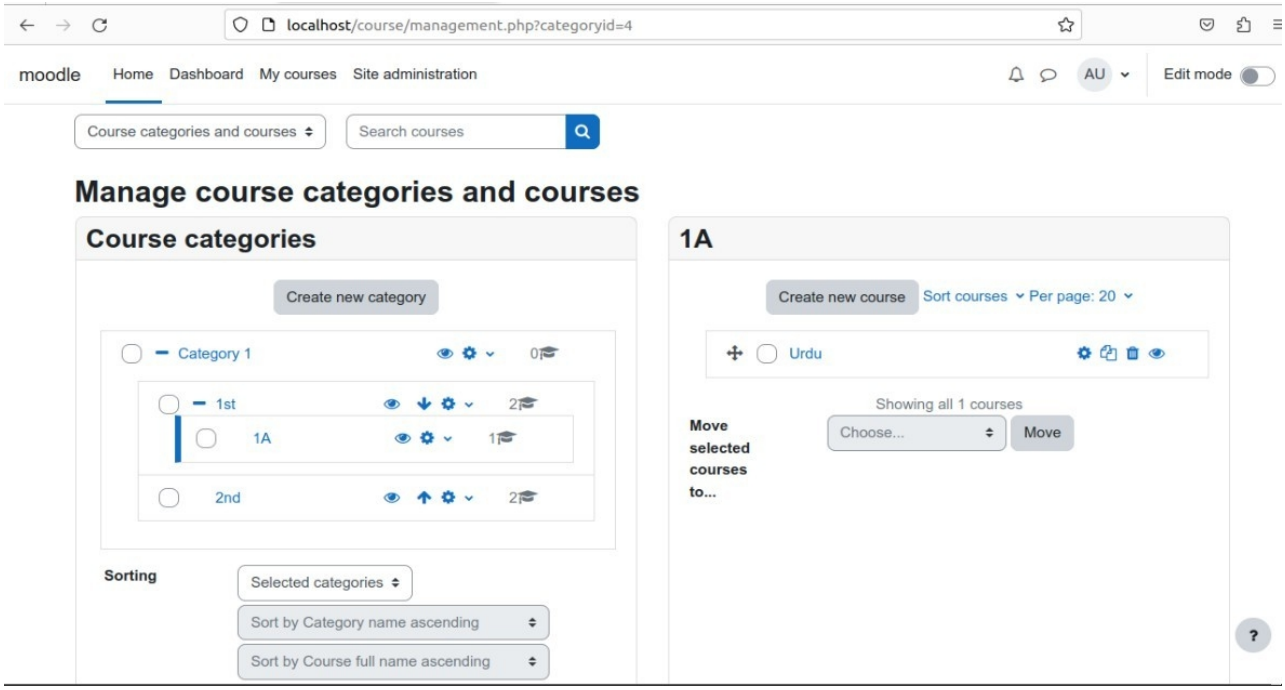


Figure 2: Course Created

7.3 Add the student in the course.

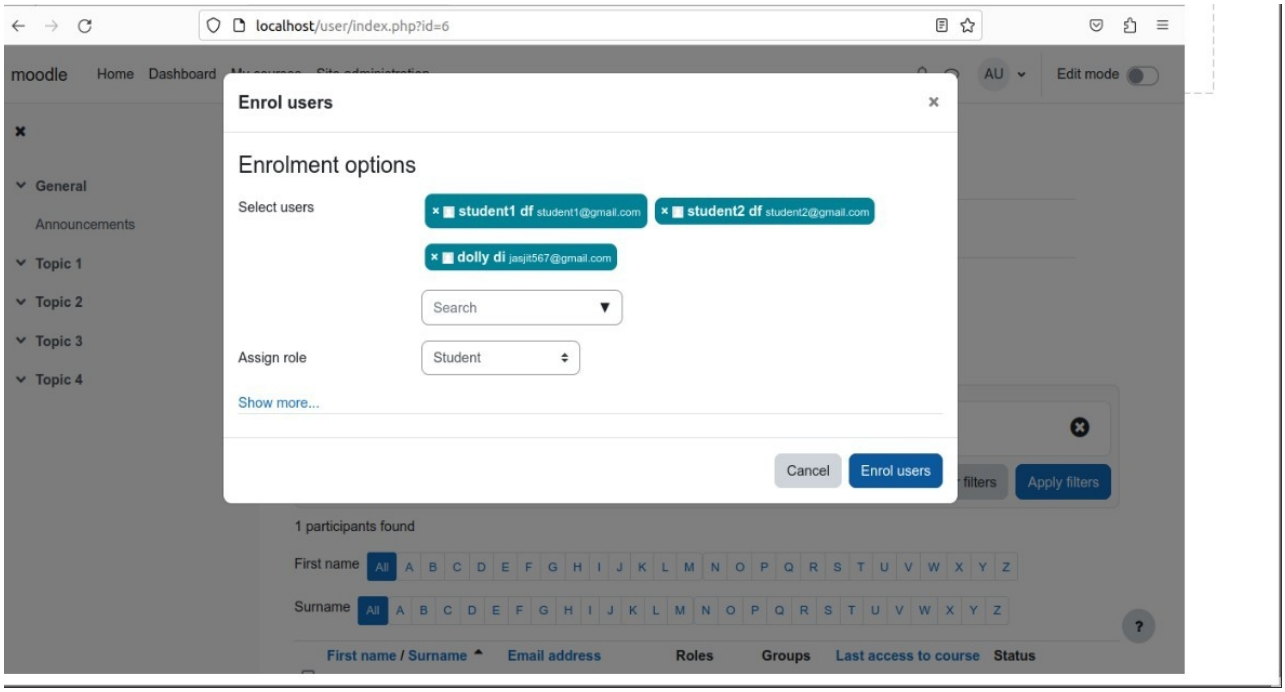


Figure 3: Add Student

7.4 Add attendance activity by turn on edit mode.

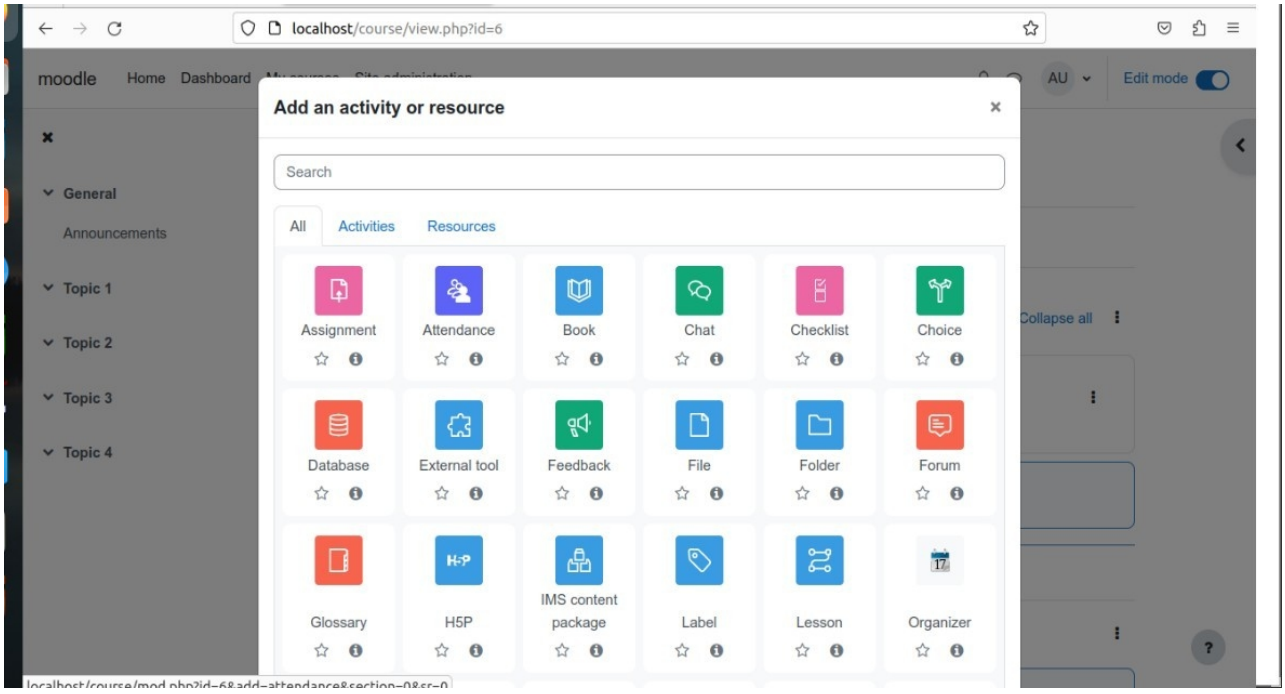


Figure 4: Attendance Activity

7.5 Create the attendance session in the course.

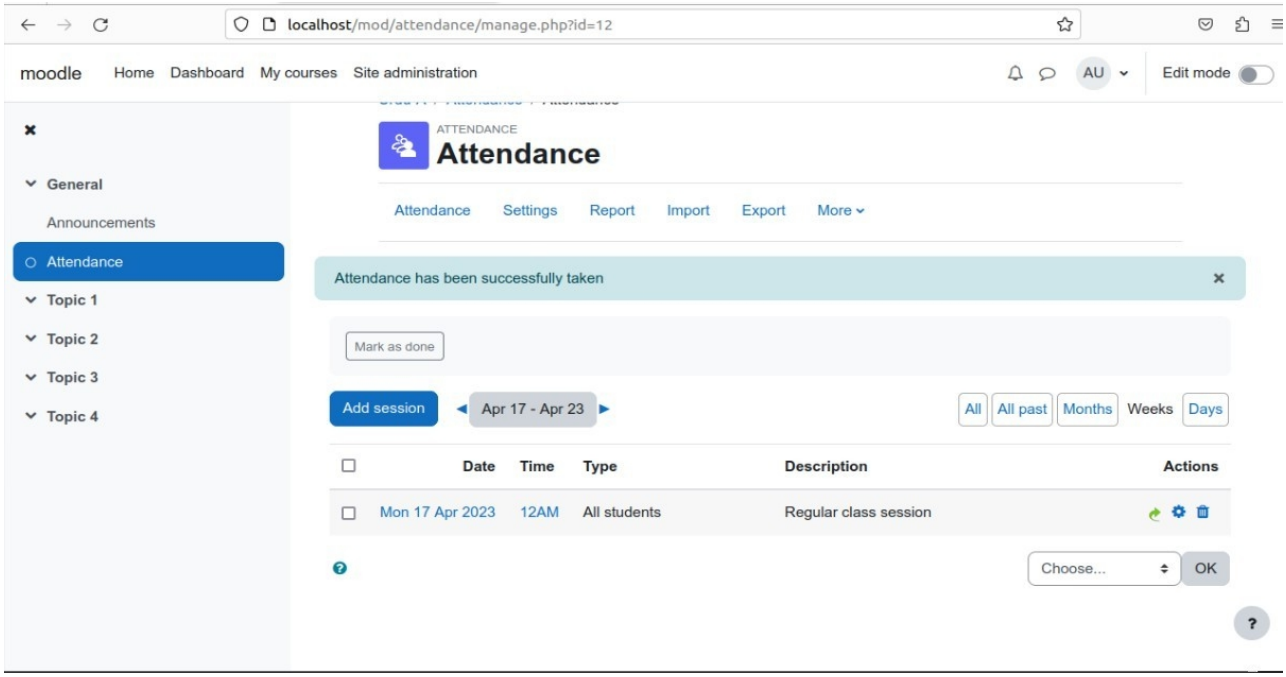


Figure 5: Attendance session

7.6 Check the teacher activity under Report session(Logs).

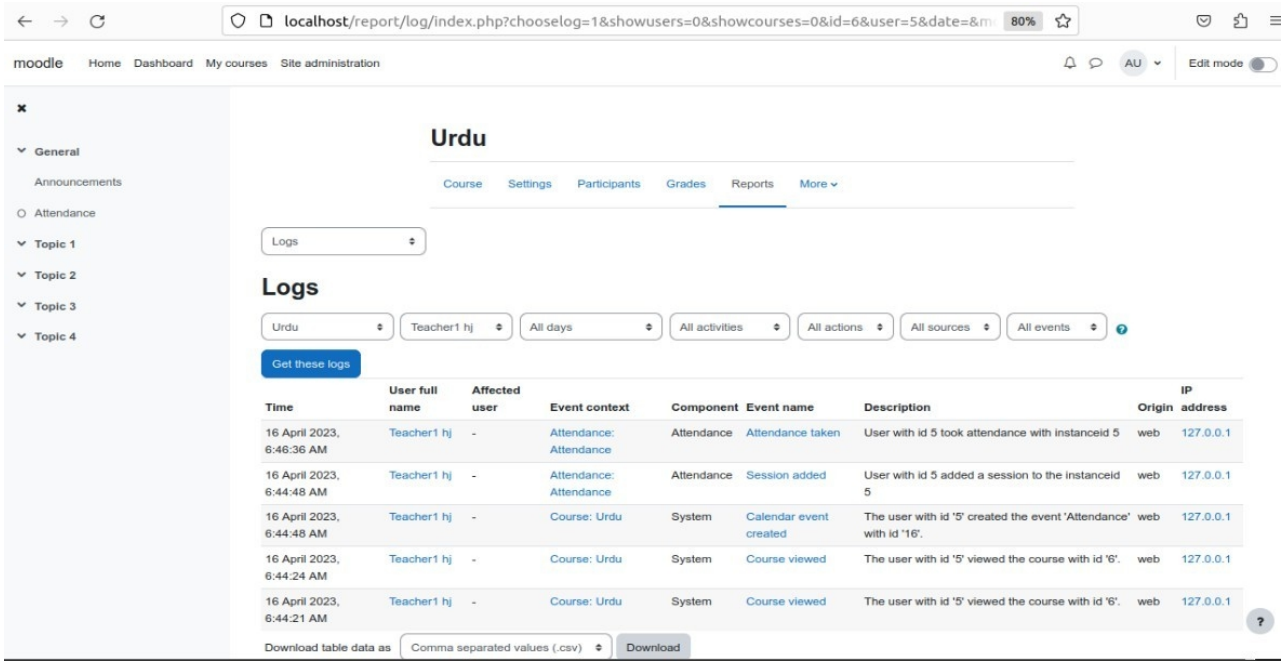


Figure 6: Teacher Activity

7.7 Generate the report using report builder.

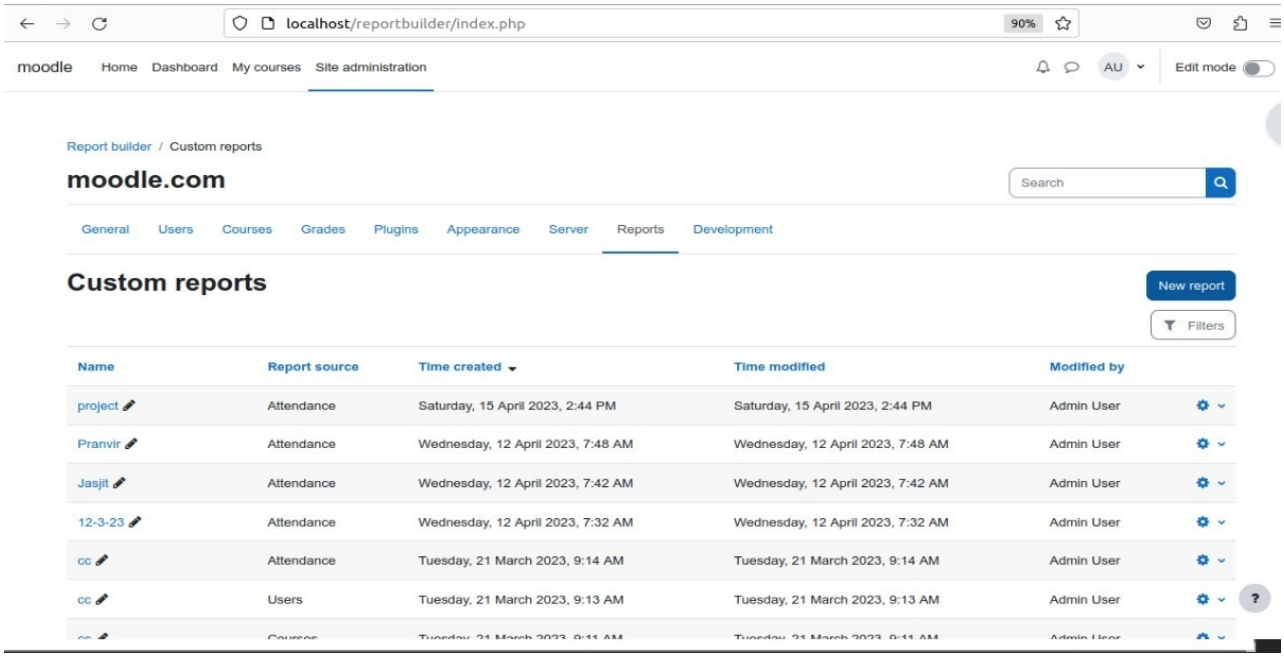


Figure 7: Generate Report

7.8 Download the csv of recent attendance report.

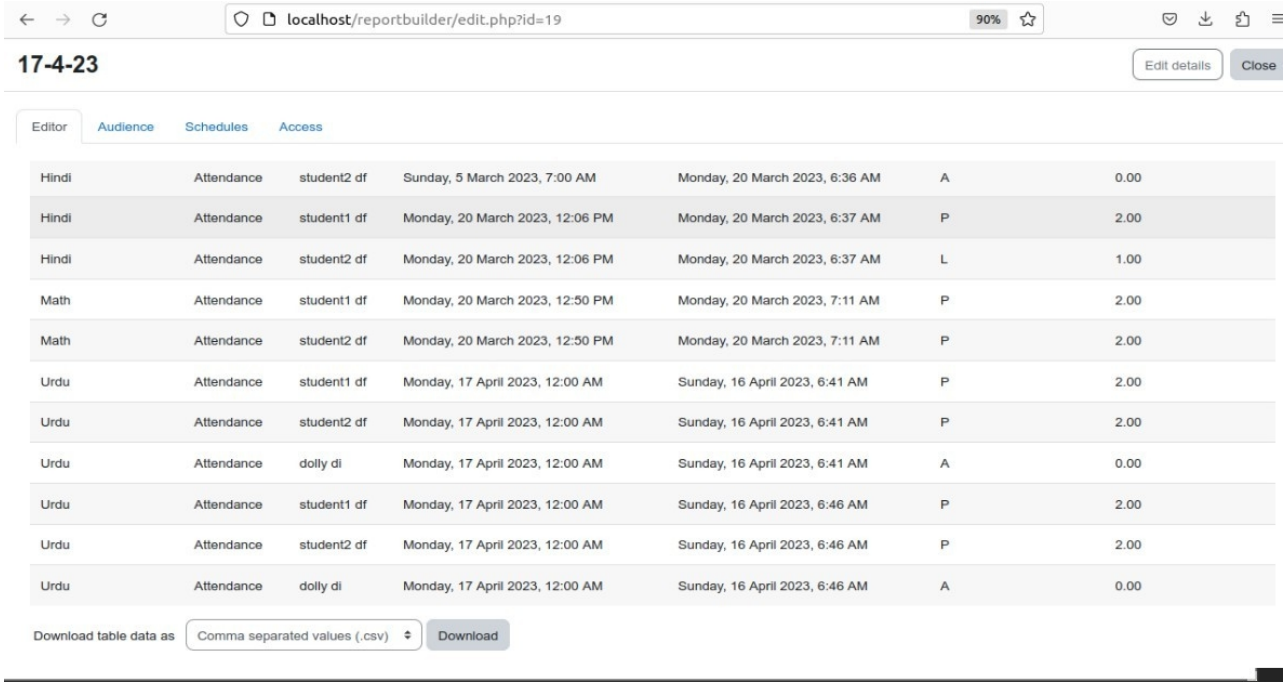


Figure 8: csv file

7.9 Webservice section add customservice (report manager)

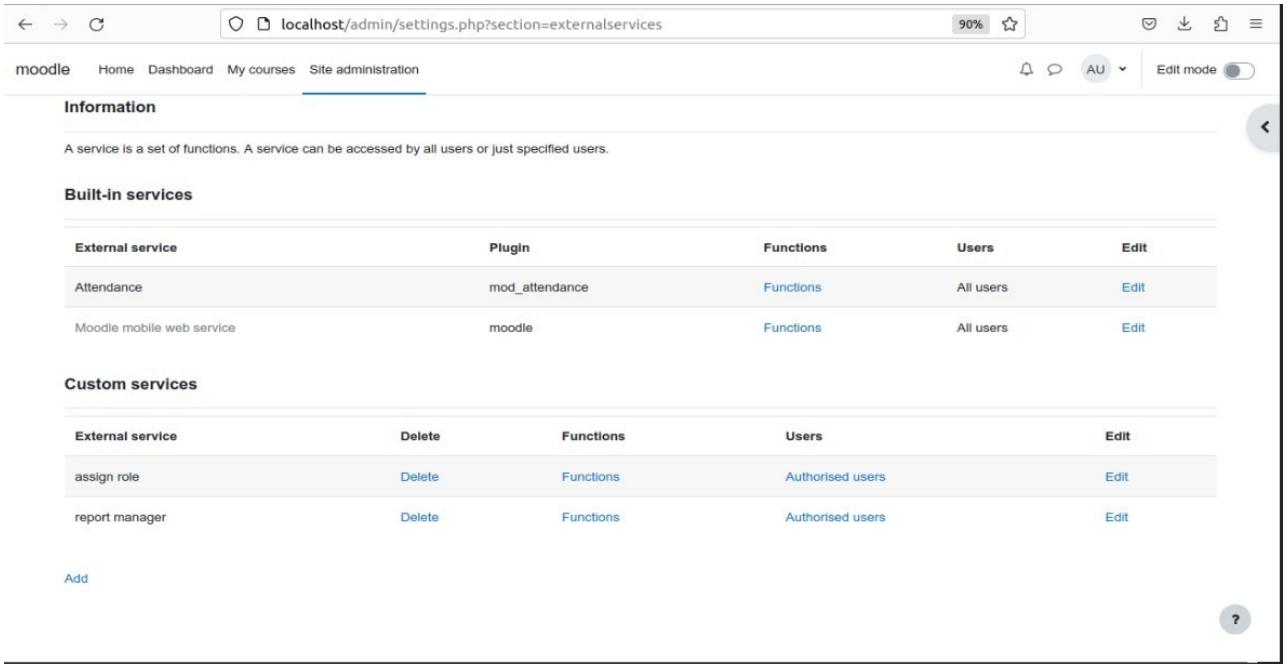


Figure 9: webservice

7.10 In manage protocol enable the rest protocol.

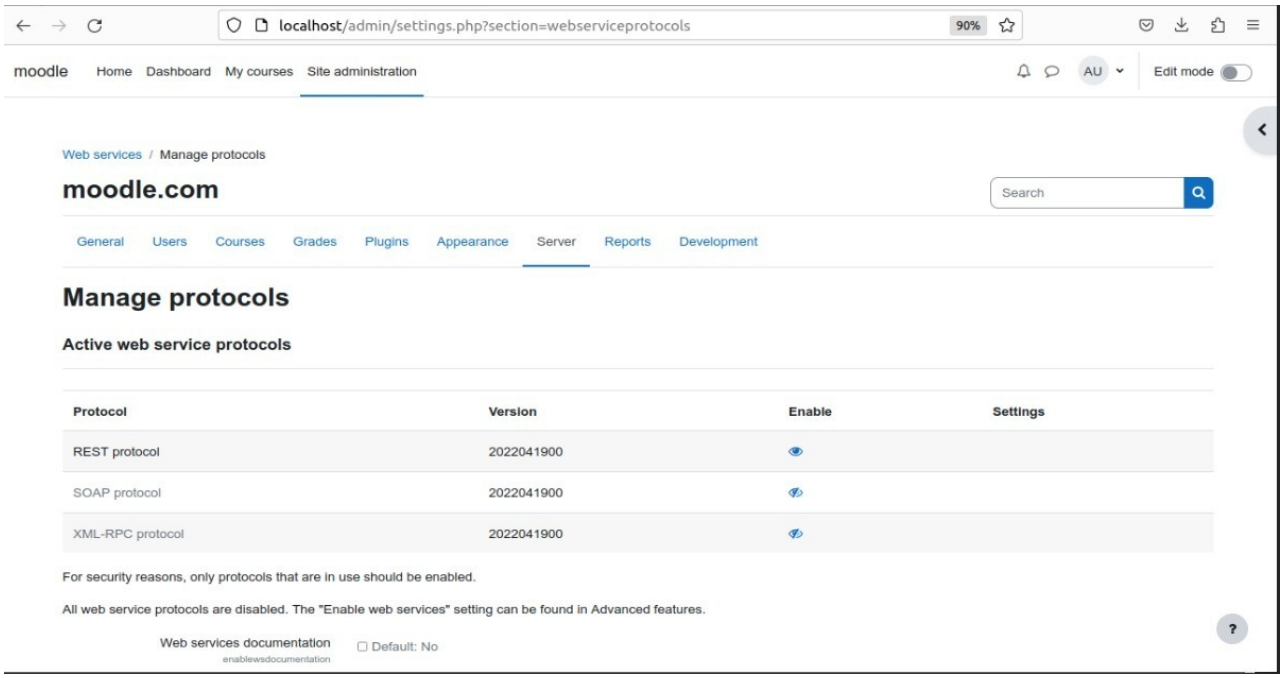


Figure 10: Manage Protocol

7.11 Manage token create the token and give a specific role to one user.

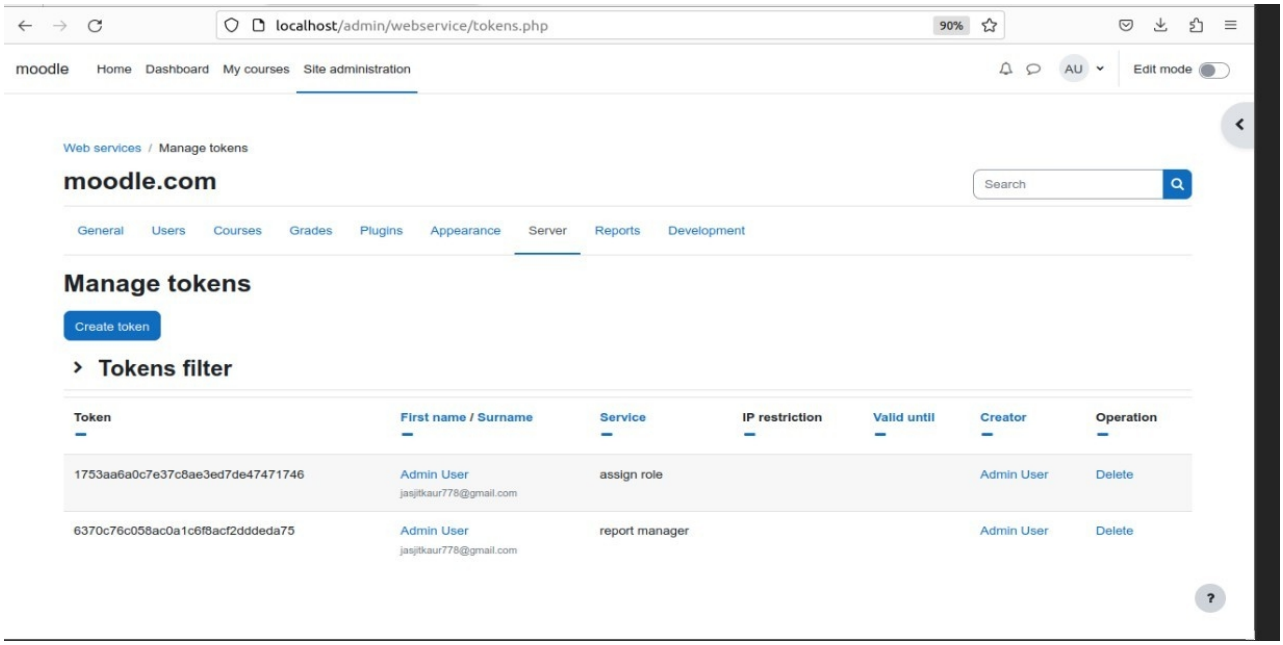


Figure 11: Generate Token

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