

Databases and Information System Lab

## **Course Management System**

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# **1 Introduction**

A course management system is a set of tools that enables the instructor to create online course content and post it on the Web without having to handle HTML or other programming languages. Course management system become an integral a part of the upper education system. They create teaching and course management easier by providing a framework and set of tools for instructors. The executive aspects of such systems could include class rosters and therefore the ability to record students' grades. the system is very reliable and attributable to the safety features, provides for the course management system, unauthorized users cannot access the system.

## 2 About The Database

### 2.1 Database Schema

student(student\_id,password,fname,lname,street,city,pincode)

instructor(instructor\_id,password,fname,lname,email,phone,)

admin(admin\_id,password,fname,lname,email,phone)

assignment(assignment\_id)

course(course\_id,course\_name,course\_description,credits)

takes(course\_id,student\_id,,

foreign key student\_id references student(student\_id),

foreign key course\_id references course(course\_id))

have(course\_id,student\_id,assignment\_id,grade,status,

foreign key student\_id references student(student\_id),

foreign key course\_id references course(course\_id),

foreign key assignment\_id references assignment(assignment\_id))

offers(course\_id,instructor\_id,

foreign key instructor\_id references instructor(instructor\_id),

foreign key course\_id references course(course\_id))

assigns(course\_id,admin\_id,student\_id,performance ,

foreign key student\_id references student(student\_id),

foreign key course\_id references course(course\_id),

foreign key admin\_id references admin(admin\_id))

feedback(feedback\_id)

gets(course\_id,feedback\_id,instructor\_id,feedback\_message

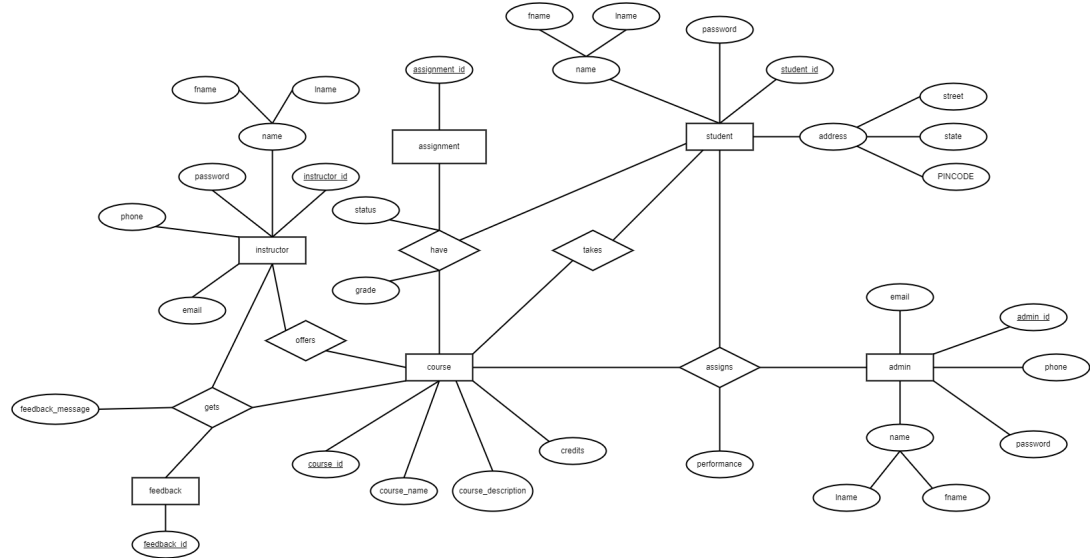
foreign key course\_id references course(course\_id),

foreign key feedback\_id references feedback(feedback\_id),

foreign key instructor\_id references instructor(instructor\_id))

## 2.2 ER Model

The entity-relationship diagram represents a conceptual design for the database. All entities with their attributes are shown with relationships between them.



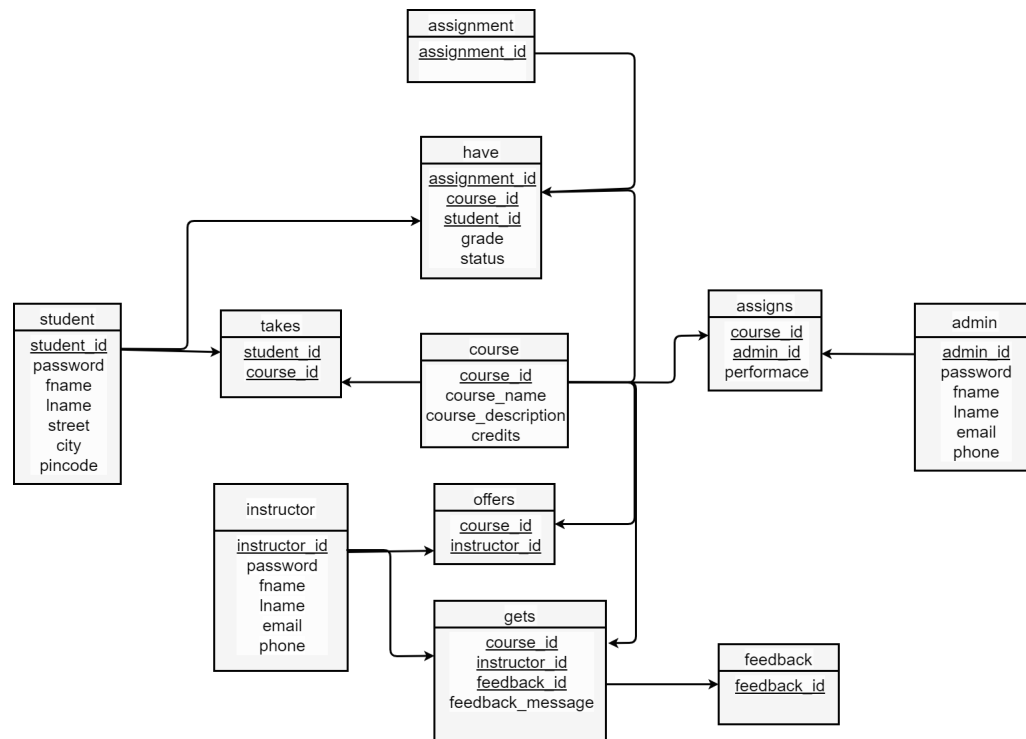
## 2.3 Integrity Constraints

Table	Primary Key	Foreign Key
student	student_id	-
instructor	instructor_id	-
course	course_id	-
offers	instructor_id, course_id	instructor_id, course_id
takes	student_id, course_id	student_id, course_id
assignment	assignment_id	-
have	student_id, course_id, assignment_id	student_id, course_id, assignment_id
assigns	student_id, course_id, admin_id	student_id, course_id, admin_id
feedback	feedback_id	-
gets	feedback_id, course_id, instructor_id	feedback_id, course_id, instructor_id
admin	admin_id	-

Database is created in default user 'root'.

## 2.4 Relational Database Design

Following Relational database design (RDD) models information and data into a set of tables with rows and columns. Each row of a relation/table represents a record, and each column represents an attribute of data.



### 3 Languages and Technologies used

This project is created using HTML, Javascript, CSS.

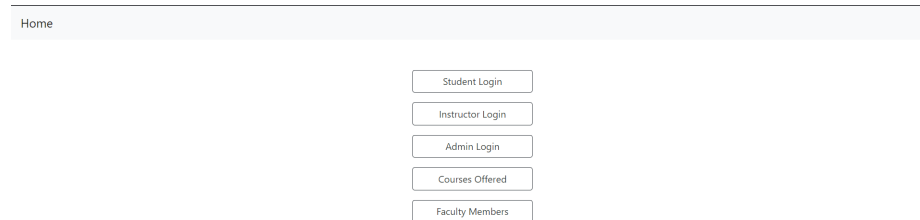
Frameworks and tools used are NodeJs, ExpressJs, Bootstrap, ejs, express-sessions, mysql, nodemon.

Express is a minimal and flexible NodeJS framework that provides a robust set of features for web applications like routing, sessions, caching, etc. Comparing Node JS vs Node JS Express, the latter manages all the clutter that comes with setting up a server and gives you a simple interface to build your routes and then use them for handling requests made by the users.



## 4 Transactions involved in Project

### 4.1 Home Page



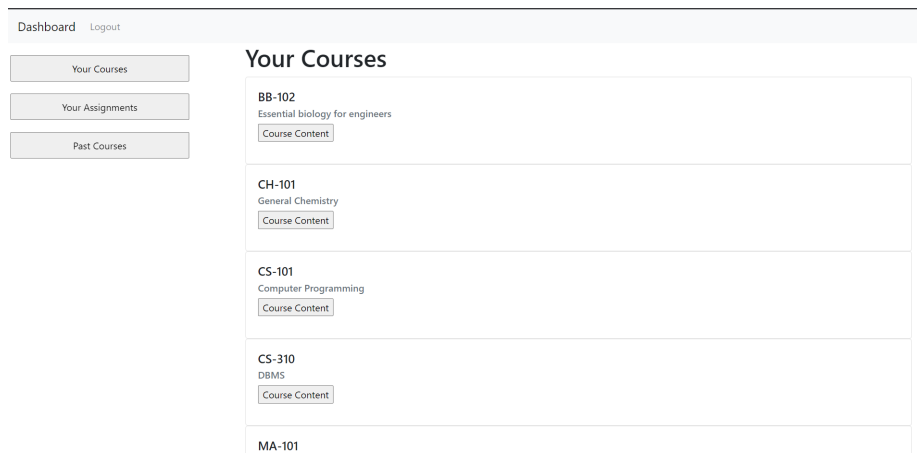
Shown image is the Home Page of our website from here all users can log into there respective domain.

Home Page have 5 buttons as:

- **Student Login:** Student user can log into its respective Student Dashboard where student can see it's enrolled & past courses and submit the assignment for each course.
- **Instructor Login:** Instructor user can log into it's respective Instructor Dashboard where instructor can see course which he offers and enrollments in that particular course. Instructor can also post new assignments and grade them for each individual student.
- **Admin Login:** Admin user can log into it's respective Admin Dashboard where Admin can see students, instructors, courses which are in college, admin have authorities to propose new instructors, courses, students and also admin gives the final passing grades for particular course to each student.
- **Course Offered:** This page shows all the course details of the course offered in the college.
- **Faculty Members:** This page shows all the instructor details who's teaching in the college.



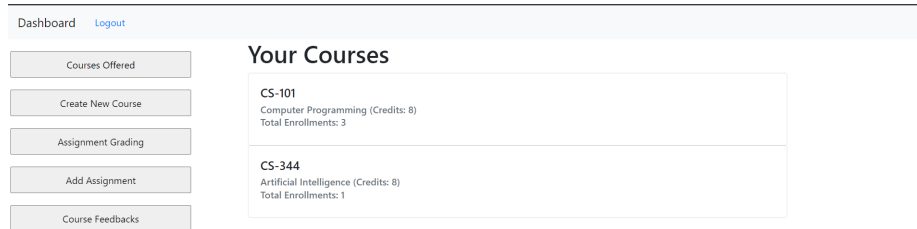
## 4.2 Student Dashboard



Student Dashboard contains all buttons and section where students do academic activities.

- **Your Courses:** The student can see courses they are enrolled in and content for each course can be viewed.
- **Your Assignments:** Student can view and submit the assignments created by instructor and see grades on the assignments.
- **Past Courses:** Student can view the courses which have been completed and also can give feedback on courses. Performance of the student in each course can also be viewed.

## 4.3 Instructor Dashboard



Instructor dashboard consists of five main activities.

- **Your Courses:** This button shows all courses offered by the instructor and total enrollments in each course.
- **Create New Course:** Instructor can create new course and add course content, credits in new course and only admin can enroll students in this new course.
- **Assignment Grading:** In this page instructor can see which students have submitted the assignments and can grade them. Instructor can add new assignment and remove completed assignment.
- **New Assignment:** This button makes adding assignments easy.
- **Course Feedbacks:** Instructor can see feedback given by students when they complete the course. Feedback related to each course offered by that instructor can be seen. Instructor cannot see the id of student who have given the feedback.

## 4.4 Admin Dashboard

Dashboard

Logout

Show Instructor

Show Course

Show Student

Assign Course For Student

Assign Instructor to New Course

Student Grading

Instructor ID	Instructor Name
5001	Rajshekhar K
5002	Sagnik S
5003	Nilkamal M
5004	Bhalchandra T
5005	Siba N
5006	Kedar K

ADD Instructor

Admin Dashboard consists of Six main Activities.

- **Show Instructor:** This button shows all instructors available in college and have the functionality which allows admin to Add New Instructor in college.
- **Show Course:** This button shows all courses available in college and have the functionality which allows admin to Add New Course in college.
- **Show Student:** This button shows all students enrolled in college and have the functionality which allows admin to Add New Student in college.
- **Assign Course For Student:** This button allows admin to Enroll the students in different courses available in college.
- **Assign Instructor to New Course:** This button allows admin to Assign Instructor for the New Courses proposed by admin himself.

## 5 Conclusion

Course Management System helps the institute to automate all the monotonous tasks and reduces the workload of the employees. The implementation of a Course Management System is likely to make their job easier. The Course Management System keeps track of all the student activities, performance with respect to the course and exams, assignment and instructor activities, feedbacks with respect to the each course.