Grade Keep Design Documentation

Description

An application that allows teachers to create classes for students to enroll in. Teachers can post

assignments to a class and enter grades. Students can hand in assignments and view their grades.

Requirements

1. **Define**

   An application that allows teachers to create classes for students to enroll in. Teachers can post

   assignments and grades to a certain class. Students can make submissions for assignments and

   view their scores.

2. **Describe**

   The application will be hosted on a website. The backend will consist of a postgreSQL database

   and flask server. The frontend will be made using react.

3. **Details**

   Each table has a unique id as one of their columns

   a. **teachers**

      Teachers have a first name, a last name, a username, and password which is stored as a

      hash.

   b. **students**

      Students have a first name, a last name, a username, and password which is stored as a

      hash.

   c. **classes**

      Each class has a title, and is owned by a single teacher.

    d. **enrollments**

        An enrollment relates a single class to a single student. Many students can enroll in one class.

    e. **assignments**

        An assignment has a title, instructions, a due date, and is attached to a certain class

    f. **submissions**

        A submission has a response, a returned_date, and is attached to a student and assignment

    g. **grades**

        Grades have a title, an amount of total points, and is attached to a class

    h. **scores**

        Scores have an earned points amount, and are attached to an enrollment

Permissions

1. **Teachers**

   A user can create an account as a teacher. As a teacher you can view your account information. Teachers can update their account information. Teachers can delete their account. Students can view a teacher's name if they are enrolled in that teacher's class.

2. **Students**

   A user can create an account as a student. As a student you can view your account information. Students can update their account information. Students can delete their account. Teachers can view a student's name if that student is enrolled in their class

3. **Classes**

   A class can be created by a teacher. Class information can be viewed by the teacher who has ownership. Class information can be updated by a teacher who has ownership. A class can be deleted by a teacher who has ownership. Students can view a class if they are enrolled in it.

4. **Enrollments**

Teachers can view and delete enrollments in their classes. Students can create enrollments.

5. **Assignments**

An assignment can be created by a teacher. Assignment information can be viewed by the teacher who has ownership. Assignment information can be updated by a teacher who has ownership. An assignment can be deleted by a teacher who has ownership. Students can view an assignment if they are enrolled in its respective class.

6. **Submissions**

Teachers can view submissions to classes they have ownership of. Students can create submissions to classes they are enrolled in. Students can view submissions they have ownership of. Students can update submissions they have ownership of. Students can delete submissions they have ownership of.

7. **Grades**

Teachers can create grades for classes they have ownership of. Teachers can view grades that belong to classes they have ownership of. Teachers can update grades that belong to classes they own. Teachers can delete grades that belong to classes they own. Students can view grades for classes they are enrolled in.

8. **Scores**

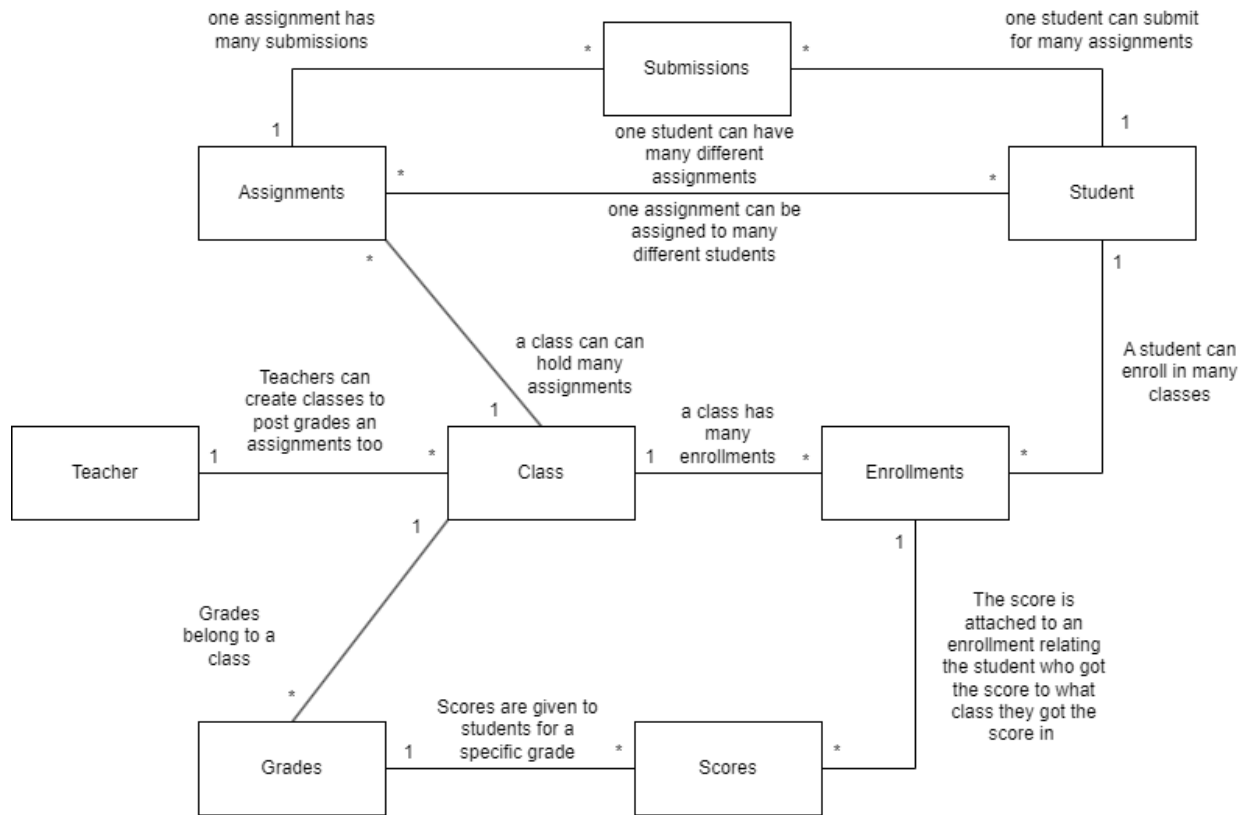Teachers can create scores for students that are enrolled in their class. Teachers can view the scores of students enrolled in their class. Teachers can update the scores of students enrolled in their classes. Students can view the scores attached to their enrollments.

9. **CRUD Operations**

SQL Table	User	Permissions
Teachers	Teacher	Create, Read, Update, Delete

	Student	Read
Students	Teacher	Read
	Student	Create, Read, Update, Delete
Classes	Teacher	Create, Read, Update, Delete
	Student	Read
Enrollments	Teacher	Read, Delete
	Student	Create
Assignments	Teacher	Create, Read, Update, Delete
	Student	Read
Submissions	Teacher	Read
	Student	Create, Read, Update, Delete
Grades	Teacher	Create, Read, Update, Delete
	Student	Read
Scores	Teacher	Create, Read, Update
	Student	Read

Domain Model

one assignment has
many submissions

Submissions

one student can submit
for many assignments

1

one student can have
many different
assignments

Assignments

Student

one assignment can be
assigned to many
different students

1

a class can can
hold many
assignments

Teachers can
create classes to
post grades an
assignments too

A student can
enroll in many
classes

1

Teacher

a class has
many
enrollments

Class

Enrollments

1

Grades
belong to a
class

The score is
attached to an
enrollment relating
the student who got
the score to what
class they got the
score in

1

Scores are given to
students for a
specific grade

Grades

Scores

Database Schema

Teachers

id (PK)
name
username
password

Classes

id (PK)
title
teacher_id (FK)

Enrollments

id (PK)
student_id (FK)
class_id (FK)

Students

id (PK)
name
username
password

Assignments

id (PK)
title
instructions
class_id (FK)
due date

Grades

id (PK)
title
total_points
class_id (FK)

PK = Primary Key
FK = Foreign Key

Submissions

id (PK)
response
assignment_id (FK)
student_id (FK)
submitted_date

Scores

id (PK)
points_earned
grade_id (FK)
enrollment_id (FK)