

Res version 2

Group 24

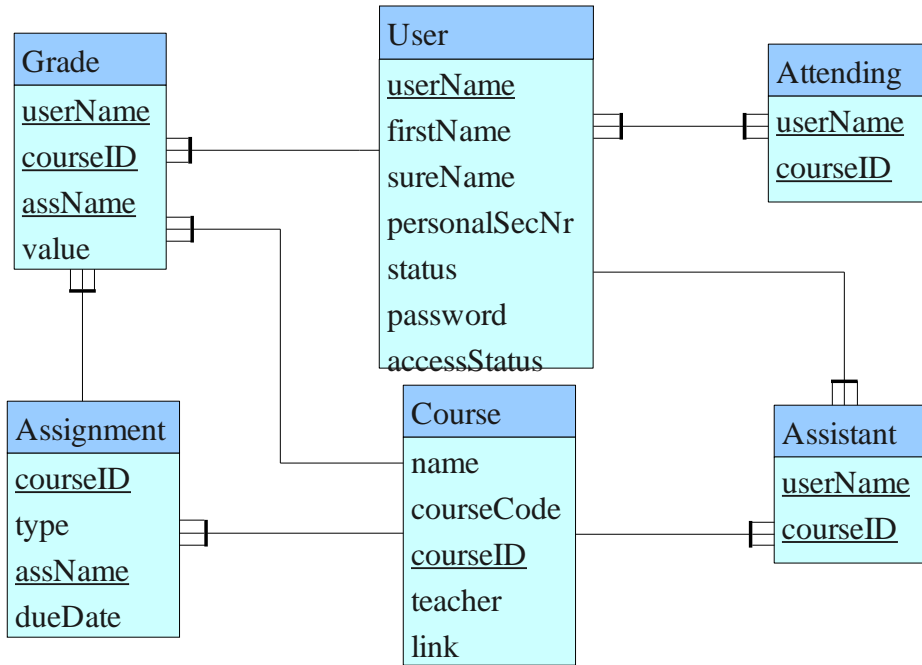
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5.5 Detailed Design

5.5.1 Database Design



User:

Column:	Type:	Constraints
<u>userName</u>	varchar(20)	primary key
surName	varchar(20)	not null
firstName	varchar(20)	not null
personalSecNr	varchar(10)	not null
status	varchar(4)	
password	varchar(40)	not null
accessStatus	varchar(10)	not null

Course:

Column:	Type:	Constraints
<u>courseID</u>	varchar(10)	primary key
name	varchar(20)	not null
courseCode	varchar(6)	not null
teacher	varchar(20)	not null
link	varchar(100)	

Assistant:

Column:	Type:	Constrains
<u>userName</u>	varchar(20)	foreign key
<u>courseID</u>	varchar(10)	foreign key

Attending:

Column:	Type:	Constrains
<u>userName</u>	varchar(20)	foreign key
<u>courseID</u>	varchar(10)	foreign key

Assignment:

Column:	Type:	Constrains
<u>courseID</u>	varchar(10)	foreign key
<u>assName</u>	varchar(20)	primary key
type	varchar(20)	not null
dueDate	varchar(10)	not null

Grade:

Column:	Type:	Constrains
<u>courseID</u>	varchar(10)	foreign key
<u>userName</u>	varchar(20)	foreign key
<u>assName</u>	varchar(20)	foreign key
value	varchar(10)	not null

5.5.2 Classes

Class: User

- Boolean loggedIn;
- String username;
- String firstName;
- String surName;
- String personalNumber;
- String status;
- String accessStatus;
- Database db;

+ User(String username, String password, Database db); //Attempts to login the user and
//retrieve the user information from the database

Class: Login

-

+ boolean display(ServletResponse response); //Displays the login screen
+ boolean rejected(ServletResponse response); //Tells the user that the login failed
+ boolean loggedIn(ServletResponse response); //Displays the main page (And main menu) after
logging in

Class: HTMLPage

- User user;
- Database db;

+ HTMLPage(ServletRequest request, ServletResponse response, Database db, User user);
+ boolean display(); //Displays the header of a subpage, and calls the overloaded body() .
+ abstract boolean body();

Class: UpdateAssignmentPage

-

+ boolean body(); //Displays the body of this sub page

Class: DisplayAssignmentPage

-

+ boolean body(); //Displays the body of this sub page

Class: ValidateCoursePage

-

+ boolean body(); //Displays the body of this sub page

Class: CourseCreationPage

-

+ boolean body(); //Displays the body of this sub page

Class: DisplayCoursePage

-

+ boolean body(); //Displays the body of this sub page

Class: ListStudentsPage

-

+ boolean body(); //Displays the body of this sub page

Class: ListCoursePage

-

+ boolean body(); //Displays the body of this sub page

Class: AdministrateUserPage

-

+ boolean body(); //Displays the body of this sub page

Class: UpdateCoursePage

-

+ boolean body(); //Displays the body of this sub page

Class: CreateAssignmentPage

-

+ boolean body(); //Displays the body of this sub page

Class: GradeAssignmentPage

-

+ boolean body(); //Displays the body of this sub page

Class: JoinCoursePage

-

+ boolean body(); //Displays the body of this sub page

Class: Database

- String address; //The address to the database
- String username; //The username to the database
- String password; //The password for the database
- Database db; // A handle to the databaseconnection

+ boolean connect(); //Attempts to connect to the database, return true if successful, false otherwise
void disconnect(); //Disconnects from the database server
+ boolean updateUser(String username, String firstName, String surname, String personalNumber, String status, String password, String accessStatus); //Attempts to update the user information, returns true if successful (Administrator), false otherwise.
+ boolean createUser(String username, String firstName, String surname, String personalNumber, String status, String password, String accessStatus); //Creates a new user
+ boolean CreateCourse(String name, String courseCode, String courseID, String teacher, String link); //This attempts to create a course, true if successful, false otherwise
+ boolean validateCourse(String courseID); // Validates the course requested by a teacher
+ boolean requestCourse(String name, String courseCode, String courseID, String teacher, String link); //Sends a request to create a course, must be validated by an administrator
+ Course retrieveCourse(courseID); //Returns an object to describe this course
+ boolean createAssignment(String courseID, String type, String name, String dueDate); //Attempts to create a new assignment attached to the specified course. True if successful, false if failed (Due to you not being the teacher of the course or for whatever reason)
+ boolean updateAssignment(String courseID, String type, String name, String dueDate); //NULL fields are preserved in the database, the other fields are updated. Returns true if successful and false if

it failed

```
+ boolean addAssistant(String username, String courseID); //Tags the user as assistant in the course specified
+ boolean removeAssistant(String username, String courseID); // Withdraw the assistant permissions from this user in the course specified
+ boolean isAssistant(String username, String courseID); //Returns true if the specified user is an assistant in the given course
+ vector<String[]> listStudents(String courseID); //Returns a list of students attending to the given course
+ boolean gradeAssignment(String courseID, String assignmentName, String username, String grade); // Updates the grade of a specific assignment handed in by the given user
+ Assignment retrieveAssignment(String courseID, String assignmentName); // This call will return an object describing the assignment and a list of students attending to the relevant course
+ Course[] listCourses(); // Returns a list of all courses
+ boolean joinCourse(String username, String courseID); // The user joins the course, true if successful
+ Database(String address, String username, String password); //Constructs the database object, storing the login information
```

Class: Assignment

```
- String courseID;
- String type;
- String name;
- String dueDate;
- String username;
- String grade;
```

```
+ String getCourseID(); // Returns what course this assignment belongs to
+ String getType(); //Returns what type of assignment it is
+ String getName(); //Returns the name of the assignment
+ String getDueDate(); //Returns the due date of the assignment
+ String getUsername(); //Returns the username of the person handed in this assignment
+ String getGrade(); // Returns the grade of this assignment
```

Class: Course

```
- String name;
- String courseCode;
- String courseID;
- String teacher;
```

- String link;

+ String getName(); // Returns the name of the course

+ String getCourseCode(); //Returns the coursecode

+ String getCourseID(); // Returns the course ID

+ String getTeacher(); // Returns the username of the teacher of this course

+ String getLink(); // Returns the URL to the course page

5.6 Package Diagram

