Model::Main

DatabaseItem

+id: string

+add_to_database(): bool
+remove_from_database(): bool
+update_in_database(new_props: Map): bool
+saved_in_db(): bool

Facultry

-name: string

Database

-connection_key: string

+initialize_db(key: string): void
-Database()
+remove_item(item: DatabaseItem): bool
+add_item(item: DatabaseItem): bool
+get_instance(): Database&
+get(string, Map)

User

#username: string
#password_hash: string
#email: string
#faculty: string
#name: string

+User(username: string, email: string, password: string)
+get_username(): string
+get_email(): string
+set_email(): void
+set_username(): string
+check_password(password: string): bool

Course

-credit_hours: int
-professor: string
-teaching_assistants: string[0..6]
-textBook: string

+get_credit_hours(): int
+set_credit_hours(): void
+get_professor(): Instructor
+get_teaching_assistants(): Instructor
+get_students(): Student[*]
+get_textbook(): string
+get_assignments(): string[*]

Student

-courses_registartions: string[0..6]

+Student(username: string, email: string, password: string)
+getCourses(): Course[*]
+register_course(course_id: string): bool
+drop_course(course_id: string): bool
+view_total_grade(course_id: string): double
+get_average_grade_in_all_courses(): double
+get_GPA(): double

Administrator

+add_user(user: User): bool
+Administrator(username: string, email: string, password: string)
+register_course_for_student(student: string, course: string): bool
+remove_user(user: User): bool
+add_course()
+list_pending_registrations(): course_registration[*]

AssignmentSubmission

-ID: string
-student: string
-assignment: string
-grade: double

+getStudent(): student
+getAssignment(): Assignment
+getGrade(): Grade
+setGrade(grade: double): bool

Assignment

-course: string
-submissions: string[*]
-type: AssignmentType

+getCourse(): Course
+getSubmissions(): AssignmentSubmission[*]
+getMinimumGrade(): double
+getMaximumGrade(): double
+getAverageGrade(): double

Instructor

-Courses: string[0..5]

+Instructor(username: string, email: string, password: string)
+add_course(course: Course): bool
+remove_course(course: Course): bool
+modify_grade(submission: AssignmentSubmission): bool
+modify_grade(student: Student, Assignment: Assignment): bool
+get_maximum_grade(course_id: string)
+get_minimum_grade(course_id: string)
+get_average_grade(course_id: string)
+add_teaching_assistant(course_id: string, TA: Instructor): bool
+add_student(student: Student, course: Course)

CourseRegistration

-Course: string
-Student: string
+state: CourseRegistrationState

«enumeration»
AssignmentType

Paper
Online

«enumeration»
CourseRegistrationState

Current
Finished
Dropped
AwaitingApproval

The method modify_grade will either add of update a grade if existent

add_teaching_assistant will work in case the instructor is the professer of the course chosen and return true, otherwise return false