

<b>ProTeach System</b>	
System-Wide Requirements Specification	Date: April 12 <sup>th</sup> , 2016

# ProTeach System

## System-Wide Requirements Specification

### 1. Introduction

The ProTeach will be designed for teaching institutions to enable their staff easy, simple and fast examination of students. The system will provide teachers intuitive interface for creating the exams and provide information to keep up students status and advancement. Statistics can point them out which questions are hardest and which part of subject needs better attention. On the other side students will have instant results from their exams and more insight in their knowledge gaps. The system can be used for homework and that allow teacher to understand which part of the lesson it was clear (by statistics).

Everything will be stored online so both sides can use at any time. Students and teachers would not need to make appointments for checking exam results and mistakes, everything can be easily accessed using web browser. There is also advantage in removing usage of the paper and storage space..

### 2. System-Wide Functional Requirements

- The student can prints the result of the test.
- The teacher can prints a list of the students that do the test and the statistics about a course.

### 3. System Qualities

#### 3.1. Usability

- User-friendly interface can easily and quickly create test,make the test and manage the system.
- Fluid functioning system - this means that the system should make a response to a request in a matter of few seconds. Very low loading times to gather data and fast response to user actions.

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### 3.2. Reliability

- System security – users can access only the system functions they’ve been given clearance for (for example, the student can’t have access to the module for teacher or administrator )
- System backup and recovery – all services can be made available after the system crash within 1 day. All data will be backed up daily.
- System reliability – the data must be available to the users 99.99% of the time (in correspondence with the system availability).
- System availability – the system can be offline **at most** 24 hours in a year.

### 3.3. Performance

- The ProTeach intranet infrastructure, this includes all the devices internally connect to the System. The infrastructure needs to handle all requests and support a large number of devices, and maintain a fluid experience at any service that it provides. Because it can happen that many student make the test in the same time, so the system must have performance for manage all student.
- A dedicated server machine (hosts DBMS, HTTP server, email server etc.)

### 3.4. Supportability

- The correct behavior of the system is not guarantees to version before of Windows OS (Windows 8) , OSX 10.11.1 , Linux 3.0

## 4. System Interfaces

### 4.1. User Interfaces

The user interfaces are provided in separate document.

### 4.2. Interfaces to External Systems or Devices

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## 5. Business Rules

### 1. Operation Constraint Rules

- 1.1. Student must perform a test at most 1 Each test must have only 1 grade.
- 1.2. time.
- 1.3. Career must have at least 1 course.
- 1.4. Test must be performed by 1 student.
- 1.5. Course must be taught by 1 teacher.
- 1.6. Each test must belong to only 1 course.
- 1.7. Each test must have at least 1 question.
- 1.8. Each course must have at least 1 test.
- 1.9. Student can do a test only if he/she is enrolled in the test's course.
- 1.10. Teacher must define start time and end time (deadline) of a test.
- 1.11. Student can start a test only if deadline has not expired.
- 1.12. A test must be evaluated only after it is marked as "completed".

### 2. Inference Rules

- 2.1. A course must be considered passed if all of its test are passed with a sufficient grade.
- 2.2. A test must be considered passed if it is evaluated with a sufficient grade.
- 2.3. A grade must be considered sufficient if it is greater than 2.
- 2.4. A test must be considered complete when the student sends it to the system.

### 3. Computation rules

- 3.1. The final grade for a course must be computed as follow: (sum of grade for each test belonging to the course) / number of grade.
- 3.2. The test duration must be calculated as the difference between the time in which the test is marked as "completed" and the time in which the test is marked as "started".

### 4. Stimulus/Response Rules

- 4.1. When a student access the test, test is marked as "started".
- 4.2. When a student submits his/her answers for the test or when deadline expires,

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test is marked as “completed”.

- 4.3. When a teacher submit the result of a test the system updates the statistic about test and course.

## **5. Structural assertion**

### **5.1. Terms**

- 5.1.1. User.
- 5.1.2. Administration personnel.
- 5.1.3. Teacher.
- 5.1.4. Course.
- 5.1.5. Student.
- 5.1.6. Test.
- 5.1.7. Career.
- 5.1.8. Grade.
- 5.1.9. Question.
- 5.1.10. Open question.
- 5.1.11. Single/multiple choice question.
- 5.1.12. Answer.

### **5.2. Facts**

- 5.2.1. Administration personnel manage teachers. (Teachers are managed by Administration personnel.)
- 5.2.2. Administration personnel create courses. (Courses are created by Administration personnel.)
- 5.2.3. Teacher teach a course. (A course is taught by a teacher.)
- 5.2.4. Teacher create a test. (A test is created by a teacher.)
- 5.2.5. Teacher evaluate a test. (A test is evaluated by a teacher.)
- 5.2.6. A course have test. (A test belong to a course.)
- 5.2.7. Student attends a course. (Course is attended by a student.)
- 5.2.8. Student perform a test. (A test is performed by student.)
- 5.2.9. Test have a grade. (A grade belong to a test.)
- 5.2.10. Student manage his/her career. (A career is managed by a student.)
- 5.2.11. Career consist of course.
- 5.2.12. Final grade is an attribute of course.

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5.2.13. Test consist of question.

5.2.14. A question must be an open question or a single/multiple choice question.

5.2.15. A single/multiple choice question consist of at least two answer.

5.2.16. "Correct" is an attribute of answer.

## 6. **System Constraints**

- Language: Java JDK
- Platform : Netbeans
- A server must have recently CPU, RAM because java system server has high resource demand.
- The server must have many GB of memory because in a University has many courses, teachers and students .

## 7. **System Compliance**

### 7.1. **Licensing Requirements**

### 7.2. **Legal, Copyright, and Other Notices**

### 7.3. **Applicable Standards**

## 8. **System Documentation**

- A document for help the student to show how he can subscribe a course and the steps to do the test.
- A document for help the teacher to do a Test and shows the statistics
- A document for help the administrator to add a Teacher and join him with a course.