

Test Fault

System for evaluating students knowledge in some spheres of academic science.

Proposes the flexible system to create the tests the group of students (here they are named as “classrooms”)

Students have the ability to take tests in one or multiple attempts in strict and specified time limits, with possibility to watch their grades, appeal the score to the teachers & watch their overall progress statistics in a convenient way.

The test creator suggests a big range of flexibility for creating the tasks with different kind of answers. Teachers can watch all the answers, set the marks or grades where necessary and watch overall success.

Subsystems

Basically, there are three major components in the “Test Fault” system:

1. Account management
2. Classroom management
3. Test management

Roles

There are two roles systems: per entire site and per classroom (the group of people who are shared with the same test base and where people create/pass tests)

Per-site:

1. **Unauthorized/anonymous/guest** - by default. Cannot create or participate in tests, should sign in or sign up to
2. **Authorized user.** Can create or participate in the groups called “classrooms” (via invite from third person or self enrolment options)

Per classroom.

1. **Student.** Can take tests in predefined strict time limits with limited attempts number, watch the grade of passed test, correct answers (after user passed test, depending on configurations - after ALL took tests, time expired or just after finishing all attempts), statistics, and overall progress inside classroom. Can appeal the results of tests to the teachers. Cannot create new test inside the classroom, but can leave classroom.
2. **Teacher.** The creator of classroom or another user who was granted with this role.

Can create, edit or delete tests and tasks for the tests, watch all the answers, set or correct marks for every student, satisfy or reject student appeals, watch overall statistics of the classroom, invite other students, set self-enrolment options, tests time and attempt limits. Can take unlimited attempts of tests, though results won't be taken into account..

3. **Classroom creator.** The same as teacher, except it can edit overall info about classroom (for now, it's just assigning other teachers) and delete classroom.

Use case tables

Account management

#	Role name	Cases	Details
1	Unauthorized user	Sign in or sign up.	Email, password
2	Authorized user	Logout.	
3		Create a group called "classroom".	
4		Participate in other classrooms	Classroom participants are "students", unless they are assigned by classroom creators as "teachers". Can be invited or self-enrolled.
5		Enroll oneself into classroom as "student"	Unique test identifier, password
6		See all classrooms user manages or participates in	

Classroom management (all users mentioned are authorized)

#	Role	Cases	Details
1	Student	Watch list of tests	Including pending, active, skipped and passed tests
2		Take tests	Allowed in time limits specified by test settings
3		Watch overall progress & statistics	
4		Leave classroom	
5	Teacher	Create tests	
6		Update tests	
7		Delete tests	
8		Set self-enrolment options	Set ID and password valid for certain period of time
9		Invite other students	
10		(inherits "Student" cases)	With absence of limits for taking the test, though their results won't be saved and taken into account
11	Creator	:(inherits "Teacher" cases) -	
12		Assign teachers	
13		Delete classroom	Irreversible action

Test Management (all users mentioned are authorized and in the same classroom)

1.

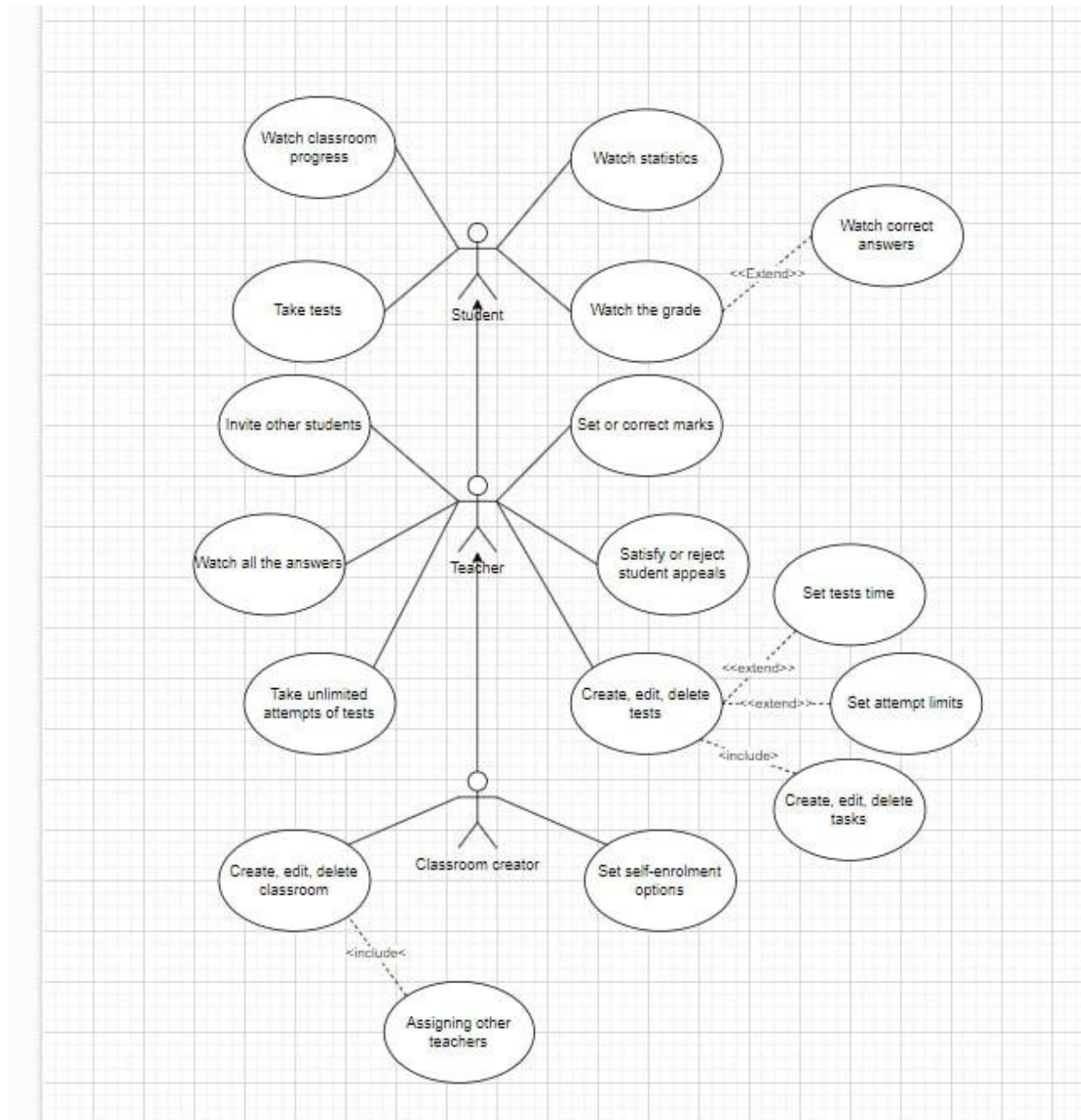
#	Role	Cases	Details
1	Student	Take test attempt	Conditions: <ol style="list-style-type: none"> 1. There are more available attempts 2. The time limits for test allow to take one more attempt
2		Answer the question(during test attempt)	The question can be: <ol style="list-style-type: none"> 1. Radiobutton - one correct answer with choices 2. Checkboxes - zero, one, or more correct answer with choices 3. Boxes (numerical, text) - with predefined correct answer or not 4. Text fields - open answers, require manual checking 5. File attachments Student allowed to answer not all questions to finish the attempt
3		Navigate the questions (during test attempt, if allowed)	
4		Watch the grade	There are several options: <ol style="list-style-type: none"> 1. Student can see all answers right after attempt 2. Student can see all the answers after ALL attempts 3. Student can see all answers after ALL passed exam (time expired) 4. The student cannot see correct answers at all, only total grade (after attempts) 5. The student cannot see correct answers at all, only total grade (after all passed or time expire) If test contains tasks that require manual checking, it will show the range of pending score, actual score, and percentage of obtained score at the moment
5		Watch correct answers & gained marks per test	

6		Appeal the test result to the teacher	It's the form with short textbox and file attachments (images etc), where student supposed to argue the obtained score and justify why. The appeal can be satisfied (in any side, from increasing grade to decreasing), or rejected
7	Teacher/creator	Add, edit or delete question in questions base	Set questions, type of answer, correct answer Set marks per task, allow/disallow negative scores per task
8		Change test settings	Time limits, Number of tasks, Attempts number, Allow/deny to watch correct answer
9		Watch statistics of passed tests, grades	
10		Watch answers	
11		Change marks manually	
12		Return other grade for the test	
13		Watch appeals, approve or reject them	

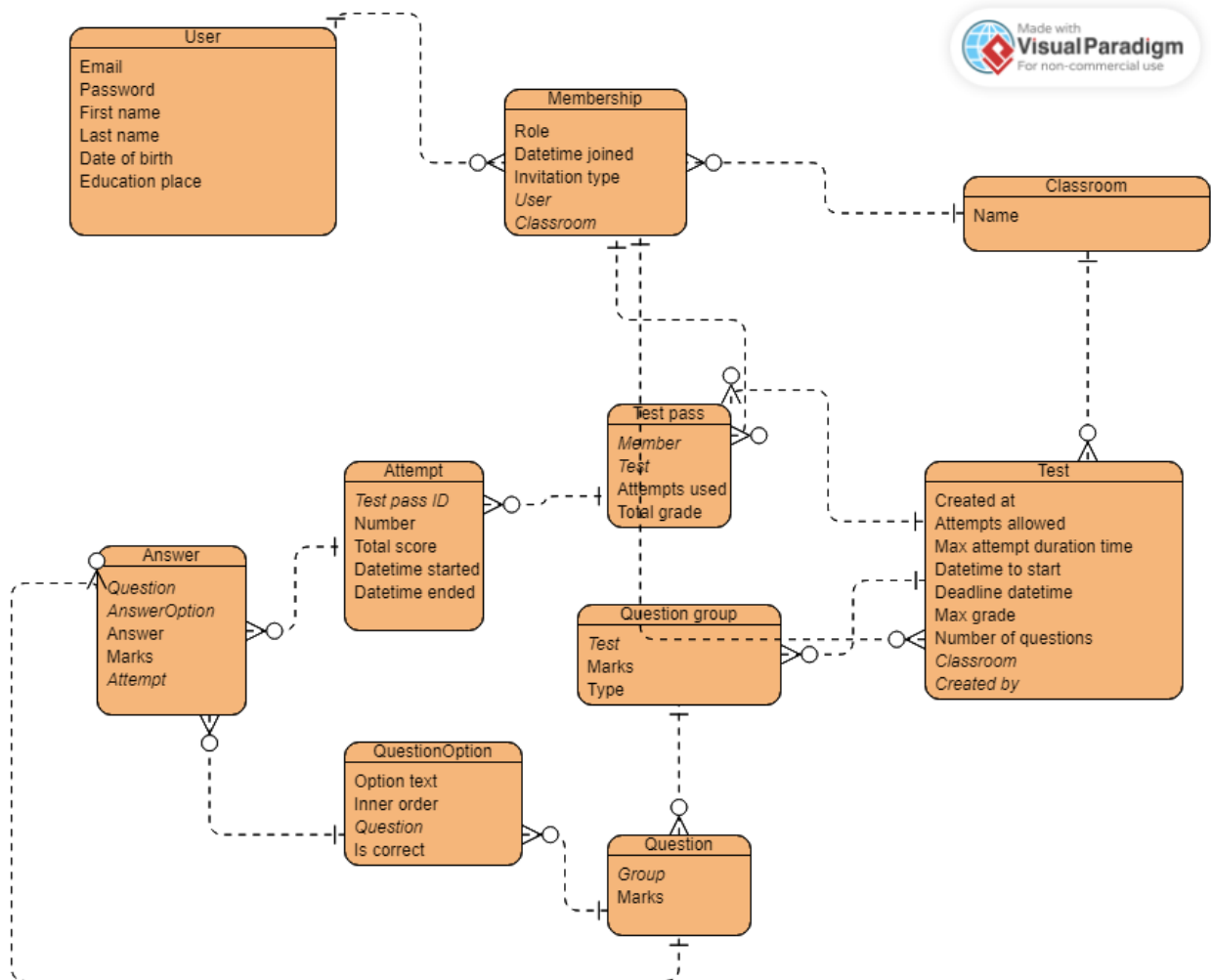
Sequence diagram

[\(click link to see\)](#)

Use-case diagram



ER-diagram



Mockups

(in process)