HTL LEONDING
NACHHILFEBÖRSE

System Specification

Nachhilfebörse HTL Leonding

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4AHIF
2016/17

1. Initial Situation and Goal

1.1 Initial Situation

At the HTL Leonding there is one teacher who is responsible for all extra – educational questions of students. This job is called the student consultant and at the moment it is done by Mrs Keck. Among her numerous responsibilities she is maintaining the tutoring platform of our school.

Unfortunately this system has a number of shortcomings:
1. No images on the contact list -> students are sometimes too shy to ask for the chosen tutor in front of the whole class -> contact barrier
2. System is outdated, inefficient and time-consuming for the administrator
3. Displaced and ancient form of publication. Students who need coaching are mostly not aware that there is a tutoring market
4. No quality assurance of the data. The information on the list might be incorrect and everyone can get personal information about the tutors
5. No other information, like availability times, minimum remuneration etc.

Available Software in the market
There are various products in the market, here are three of them:

- **talentify.me**: An austrian-wide tutoring market, with an attractive web-design. One clear disadvantage of this platform is the lengthy sign-up procedure where a student id, a user name, and an extra password has to be provided.
- **lernquadrat.at**: A tutoring market for Austria, Germany and Switzerland, which offers plenty of possiblities of tutoring (single & group tutoring, crash courses) in a lot of convenient locations. One advantage of this website is the easy registration process, but on the other hand the user cannot choose his/her teacher and the design is not appealing.
- **www.betreut.at/nachhilfe**: An austrian-wide tutoring offering website. Clear disadvantages of this website are that the searching criterias are not specialised on tutoring (the user has to enter details of his/her family when he/she wants to sign up) and the website has a few bugs.

1.2 Application Domain

In order to collect all students, who want to give tutoring lessons, the student consultant hands out a list to the class teachers where the students can write down their name, subjects, class and E-Mail. The form teachers then collect all the data and give it back to the student consultant. After reviewing the applications, she enters the information in a Microsoft Access Database, where all tutors with their personal data are saved. Afterwards the list appears in the internal area of the HTL Leonding website in the Nachhilfebörse tab. Additionally the list is printed and then hung up in every first-grad-class and in front of the room E33.

When students want to address a possible coach they have to consult the list, find the student in his/her class or contact him/her via email and agree on a price and meeting times.

1.3 Glossary

Tutoring: A student helping another younger student in a certain subject

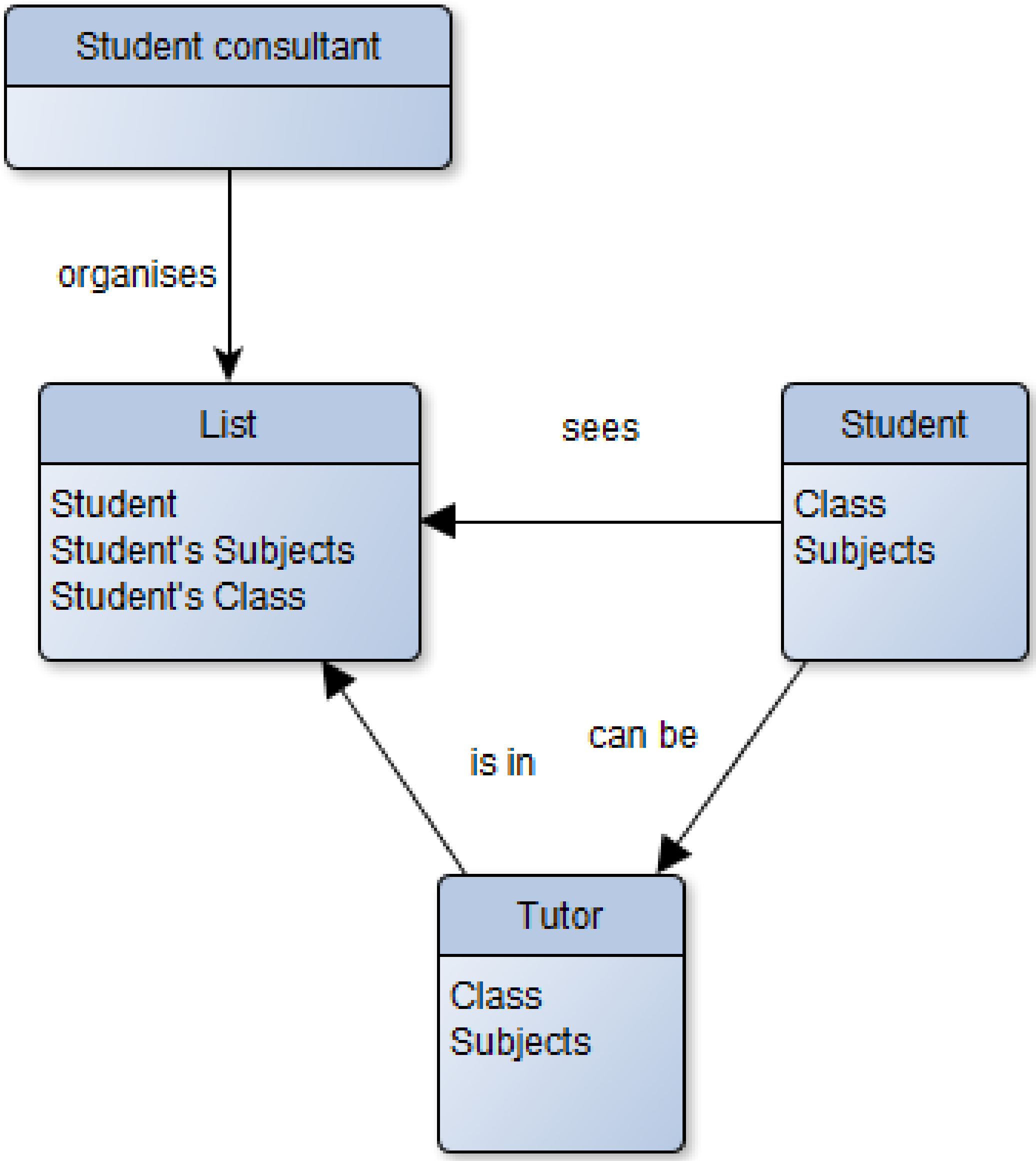
Tutoring market: A place where students, who are searching for tutors, can find an appropriate tutoring teacher

Internal area of the HTL Leonding website: A section on the HTL Leonding website, where a login is required. This means not everyone can have a look at the information in the internal area.

Student consultant: A Person, who advises students in questions of education.

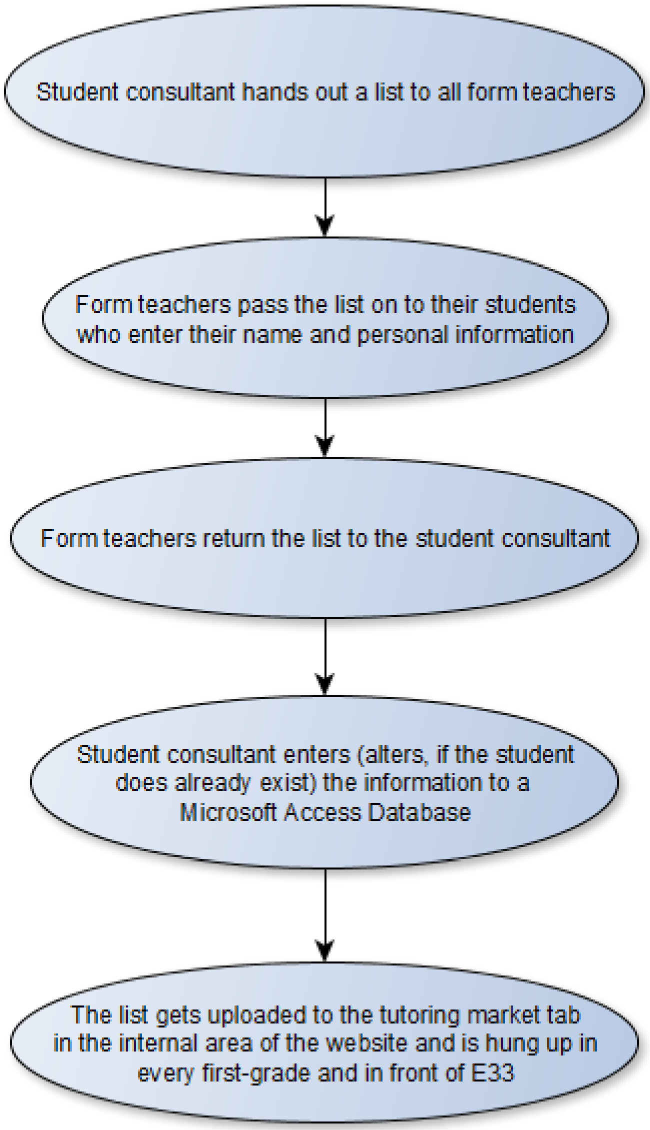
Master data: Data, which may change every year. In detail master data means: name and number of classes, name and number of subjects, name and number of the departments.

1.4 Model of the Application Domain

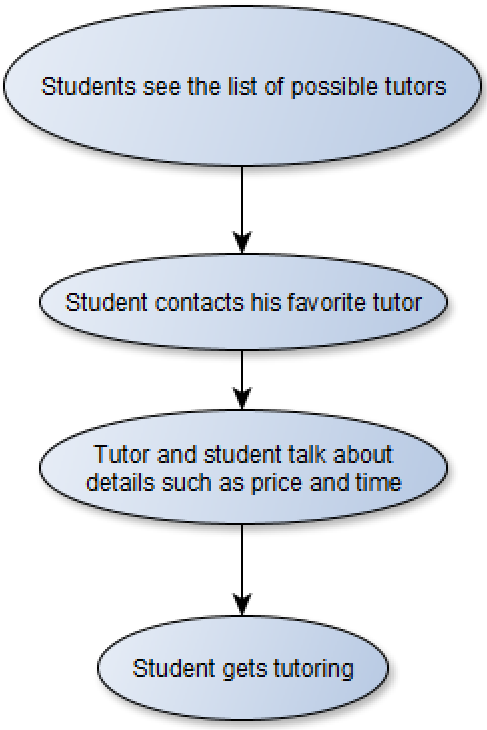


1.5 Overview of the Business Processes

1.5.1 Collect all tutors


Student consultant hands out a list to all form teachers
Form teachers pass the list on to their students who enter their name and personal information
Form teachers return the list to the student consultant
Student consultant enters (alters, if the student does already exist) the information to a Microsoft Access Database
The list gets uploaded to the tutoring market tab in the internal area of the website and is hung up in every first-grade and in front of E33

1.5.2 Students find an appropriate tutor


Students see the list of possible tutors
Student contacts his favorite tutor
Tutor and student talk about details such as price and time
Student gets tutoring

1.6 Description of the Business Processes

Collect all tutors

Triggering Event:	Beginning of the school year
Result:	A complete and up-to-date list of tutors
Contributors:	Student consultant, Class teachers, Tutors

Student finds tutor

Triggering Event:	Need of a tutor
Result:	A fitting team of a student and a tutor who improve the student’s grades
Contributors:	Found tutor, student

1.7 Goal Definition

The main idea of our project is to ease the process for searching for the right tutor and also decrease the work hours for the student consultant.

If a student wants to use our website he/she first has to login with his/her school account, because the data privacy of our students if very important to our headmaster.

After logging in the student has to decide whether he/she wants to take or give tutoring. If he/she wants to give tutoring he/she has to make a detailed profile with his/her name, a picture of him/her, his/her department, his/her grade, the subjects he/she wants to give tutoring in and more information about himself/herself. If he/she wants to take tutoring lessons he/she can immediately start searching for the right teacher.

On the technical side, the tutors data gets saved in a database. When the user now starts to filter the teachers to find the right one he/she always gets a refreshed list of possible matching tutors. This list can be filtered by department, grade, subject, rating or remuneration and then the list can be sorted by grade, remuneration or rating.

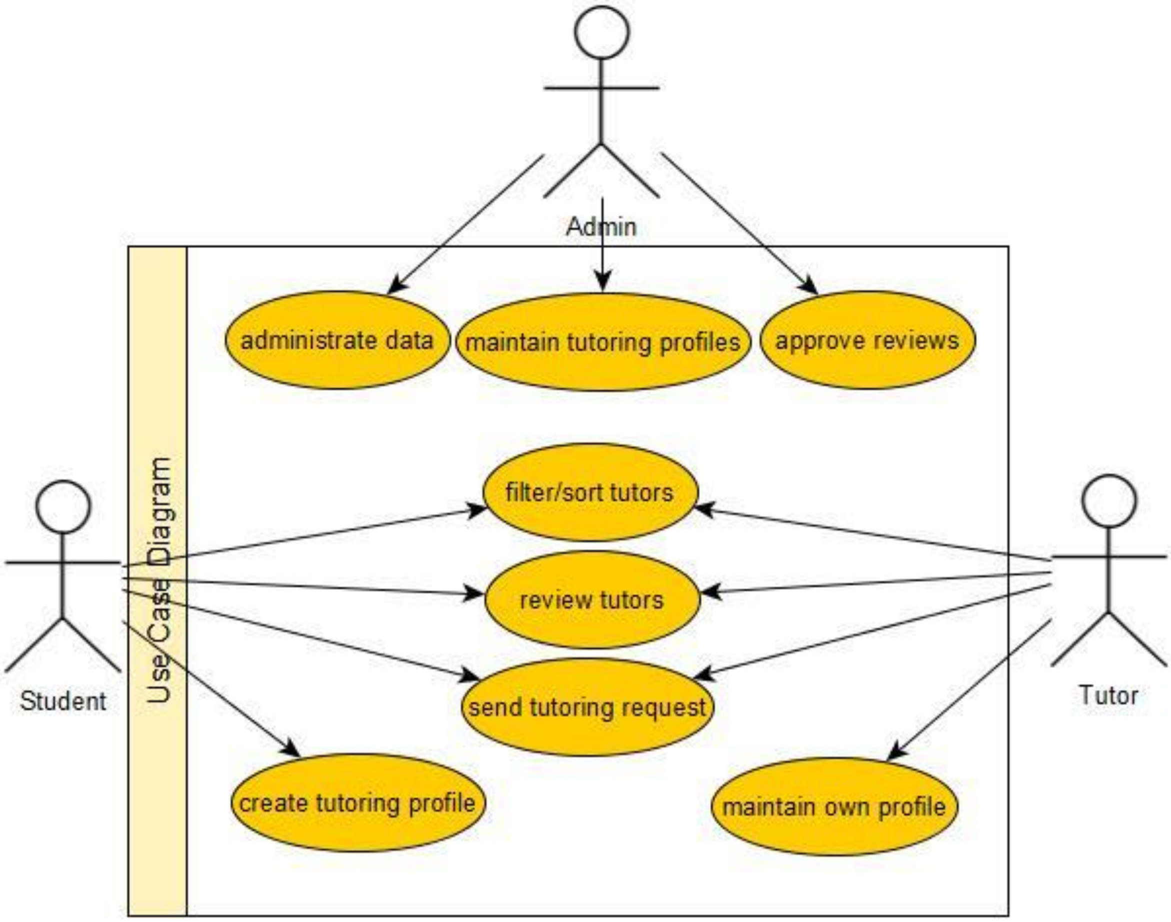
The user also can send the tutor a request via E-mail or SMS. However, we will implement this feature via interfaces so that the future owners of the program can easily add new contacting methods.

We also want to implement a rating system so every student can rate his tutor. The user can rate the tutor with 1-5 books (5 books is the best) and with a comment, which is required. With this function we want to differ good from bad teachers. Furthermore it helps students to get a more precise impression of the tutoring teacher. Before the ratings will actually appear on the website, the student consultant will have a look on the ratings and check if there are no fake or insulting ratings.

Our website will be responsive so the students can use it on their phones too.

2. Functional Requirements

2.1. Use Case Diagram



2.2. Use-Case Details

2.2.1. Administrate data

The admin account maintains the master data. Examples could be:

- the subjects change
- a new department has been created
- there is a new administrator
- classes appear/disappear

2.2.1.1. Characteristic Information

Superior business process:	-
Goal:	Master data is up to date
Precondition:	Master has to be changed
Postcondition:	Master data (e.g. available subjects) are up to date
Involved User:	Administrator
Triggering Event:	Available subjects have changed

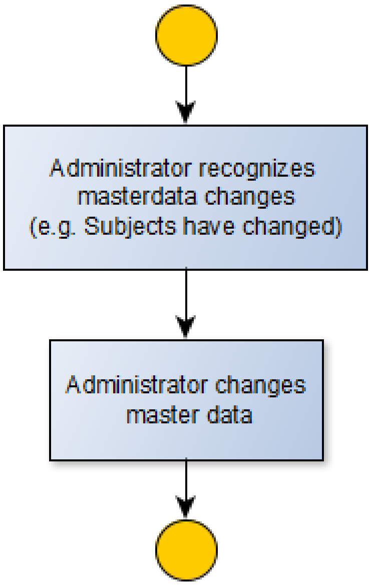
2.2.1.2. Scenario for the good case

Step	User	Activity
1	admin	Choose master data
2	admin	Change master data
3	server	Save new data on server

2.2.1.3. Scenario for the bad case

Step	User	Activity
1	admin	Choose master data
2	admin	Change master data
3	server	● Connection to server failed => the data will not be changed ● Required fields are not filled => “Bitte füllen Sie die notwendigen Felder ein” ● Timeout: Changes will not saved

2.2.1.4. Workflow


Administrator recognizes masterdata changes (e.g. Subjects have changed)
Administrator changes master data

2.2.2. **Maintain tutoring profiles**

The administrator is going to be able to edit the tutor’s profiles (only the subjects can be edited) and also delete whole profiles if it is a fake account or inappropriate or inactive or the student is not anymore at school.

2.2.2.1. Characteristic Information

Superior business process:	-
Goal:	Incorrect or inappropriate information of a tutor must be edited; tutor's profile is deleted
Precondition:	Information (e.g. tutor's subject) of the tutor must be changed (e.g. a teacher told the administrator that the tutor is not good enough to be a tutor) or the tutor left the school
Postcondition:	The information about the tutor is correct
Involved User:	administrator, tutor
Triggering Event:	Tutor's profile is inappropriate, Tutor left the school, recommendation against the tutor

2.2.2.2. Scenario for the good case

Step	User	Activity
1	admin	Choose a tutors profile
2	admin	Changes or deletes the profile
3	server	Saves the changed profile on server or deletes the profile from server

2.2.2.3. Scenario for the bad case

Step	User	Activity
1	admin	Choose a tutors profile
2	admin	Changes or deletes the profile
3	server	● Connection to server failed => the changes will not be saved ● List of subjects is empty => "Bitte füllen Sie die notwendigen Felder ein" ● Timeout: Changes will not be saved

2.2.2.4. Open Points

Report user: If a tutoring account seems to be created for fun (for example:an unserious picture or an inappropriate description of a tutor), then there should be a possibility for other users to report this tutor.

2.2.2.5. **Approve Reviews**

The administrator can approve or reject reviews. He/she will be able to delete ratings to pretend insulting or inappropriate ratings.

2.2.2.5.1. Characteristic Information

Superior business process:	-
Goal:	Review is rejected/approved
Precondition:	A user rates a tutor
Postcondition:	Rating is shown on the tutor's profile/Rating is deleted
Involved User:	Administrator, User, Tutor
Triggering Event:	User rates a tutor

2.2.2.5.2. Scenario for the good case

Step	User	Activity
1	admin	Choose one of the pending ratings
2	admin	Approves/Deletes the rating
3	server	Admin approves the rating => server saves the rating Admin deletes the rating => server deletes the rating from server

2.2.2.5.3. Scenario for the bad case

Step	User	Activity
1	admin	Chooses one of the pending ratings
2	admin	Approves/Deletes the rating
3	server	● Connection to server failed => admin must approve/remove the rating again

2.2.2.6. **Filter/Sort tutors**

The user can filter the list of tutors by department, grade, subject, gender, rating or remuneration. He also can sort the list by grade, remuneration or rating.

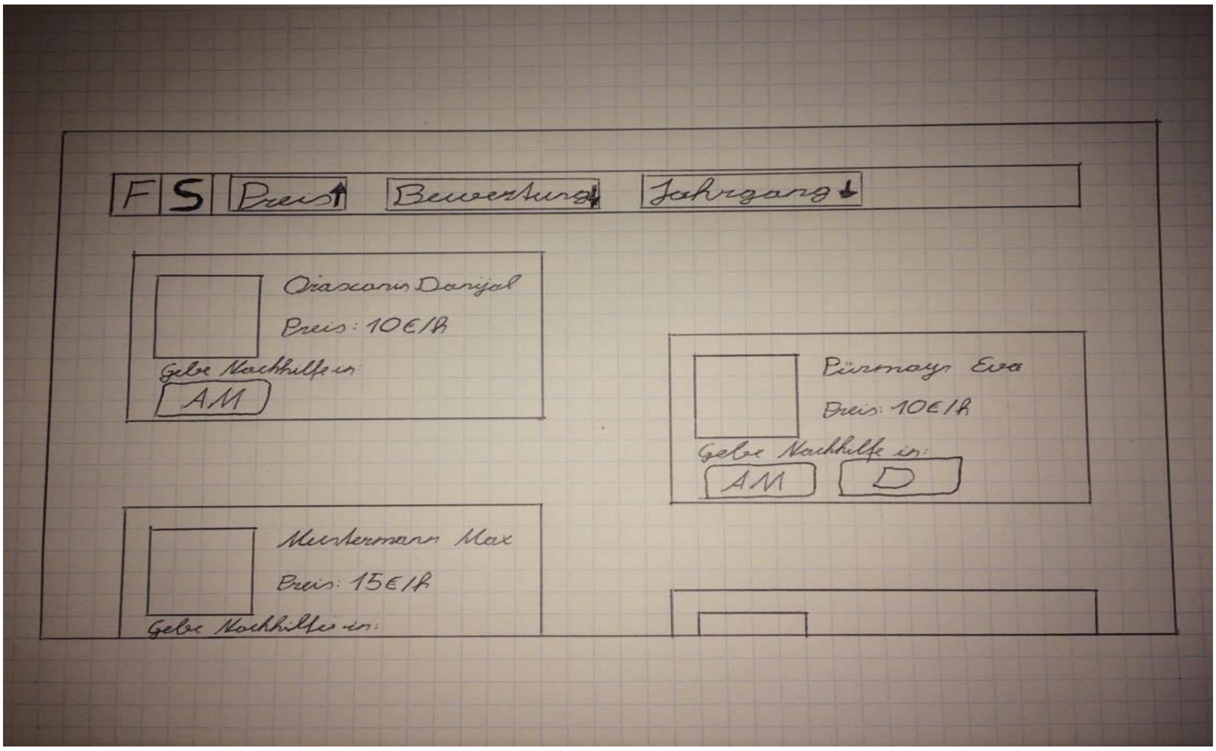
2.2.2.6.1. Characteristic Information

Superior business process:	Collect all tutors
Goal:	A filtered/sorted list of tutors is displayed
Precondition:	The user wants to search a tutor by a certain criteria or wants to see a sorted list
Postcondition:	A sorted/filtered list of tutors appears
Involved User:	User
Triggering Event:	The user starts searching and wants a filtered/sorted list

2.2.2.6.2. Scenario for the good case

Step	User	Activity
1	student / tutor	Choose a filter for the list
2	server	Filters the list of tutors
3	server	New filtered list gets displayed
4	student / tutor	Chooses a criteria for sorting the list
5	server	Sorts the list of tutors
6	server	New sorted list gets displayed

2.2.2.6.3. Gui to call the good case



2.2.2.6.4. Scenario for the bad case

Step	User	Activity
1	student / tutor	Choose a filter for the list
2	server	Filters the list of tutors
3	server	● Connection failed => List will be displayed without the filter ● No tutors in the filtered list => “Leider entspricht kein Nachhilfelehrer den vorgegebenen Kriterien” ● “Filter” button is pressed but no criteria is selected => “Sie haben kein Filterkriterium eingegeben”
4	student / tutor	Chooses a criteria for sorting the list
5	server	Sorts the list of tutors
6	server	● Connection failed => List will be displayed, but unsorted

2.2.2.7. **Review tutors**

The users can also rate their tutors anonymously with 1-5 books (5 books are the best) and a comment, which is required.

2.2.2.7.1. Characteristic Information

Superior business process:	-
Goal:	A rating of a tutor is saved in the database
Precondition:	A user wants to give feedback, so that other pupils can see the ratings of the tutor
Postcondition:	The rating appears on the tutor's profile
Involved User:	User, admin (has to check the ratings)
Triggering Event:	User rates tutor

2.2.2.7.2. Scenario for the good case

Step	User	Activity
1	student / tutor	Choose a tutor
2	student / tutor	Reviews the tutor
3	server	Save the review

2.2.2.7.3. Scenario for the bad case

Step	User	Activity
1	student / tutor	Choose a tutor
2	student / tutor	Reviews the tutor
3	server	● Connection failed => The review will not be saved Timeout: Changes will not be saved ● “Bewerten”-Button is pressed but amount of ‘books’ is not selected => “Bitte bewerten Sie den Nachhilfelehrer, indem Sie 1-5 Bücher vergeben” ● “Bewerten”-Button is pressed but comment field is empty => “Bitte füllen Sie das Kommentarfeld aus”

2.2.2.8. **Send tutoring request**

The user can send a request to the tutor via email or if indicated via Sms.

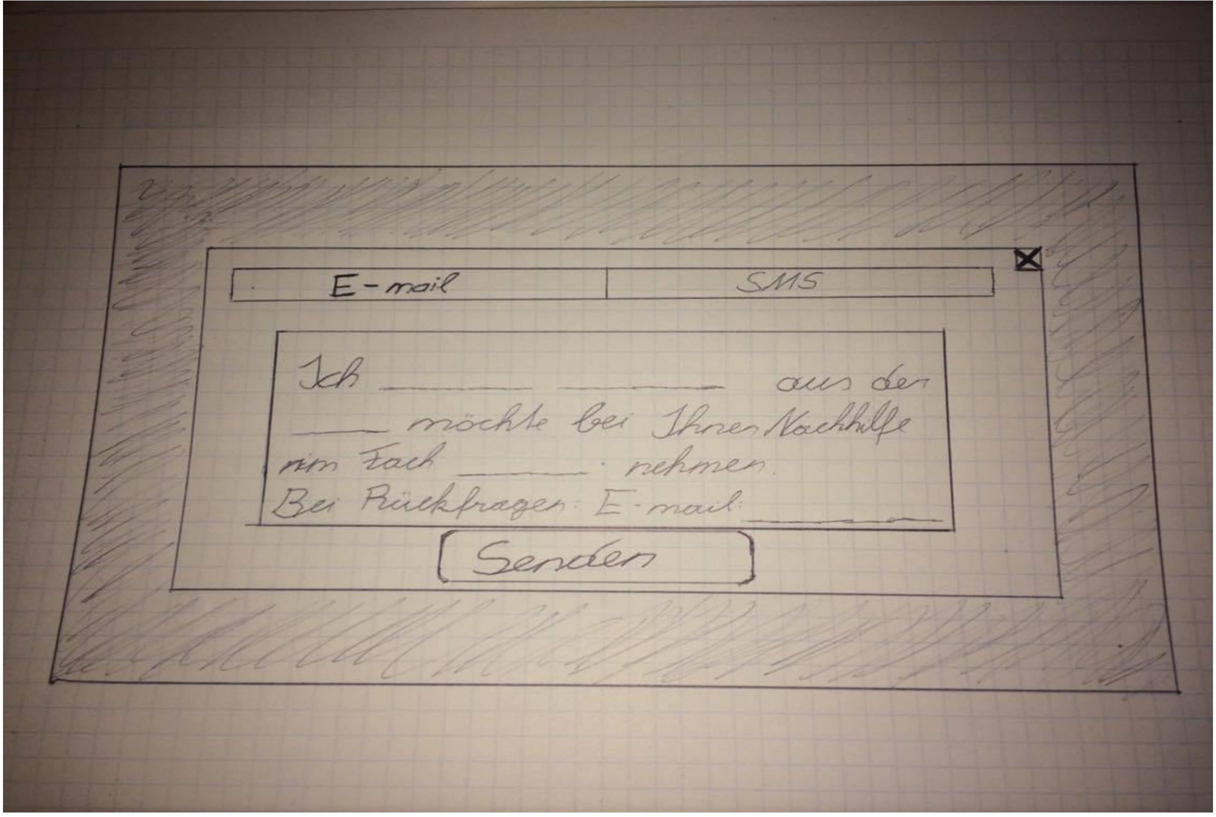
2.2.2.8.1. Characteristic Information

Superior business process:	Student finds an appropriate tutor
Goal:	The tutor gets a message, which tells him that a user is interested in tutoring
Precondition:	A user wants to contact a tutor
Postcondition:	Tutor is informed about the user’s interest
Involved User:	Tutor, user
Triggering Event:	A user wants to contact a tutor

2.2.2.8.2. Scenario for the good case

Step	User	Activity
1	student / tutor	Choose a tutor
2	student / tutor	Sends a request
3	server	Sends the request

2.2.2.8.3. Gui to call the good case



Ich ______ ______ aus der ____ möchte bei Ihrer Nachhilfe im Fach ______ nehmen.
Bei Rückfragen: E-mail: ______

2.2.2.8.4. Scenario for the bad case

Step	User	Activity
1	student / tutor	Choose a tutor
2	student / tutor	Sends a request
3	server	● Connection failed => Request will not be sent ● Tutor did not enter his mobile phone number => Request can only be sent as an email ● Student deleted the suggested text and the text box is empty => “Bitte geben Sie Ihre Nachricht ein. <Link>Mustertext wiederherstellen<Link> ● Student did not enter his name/class/email/phone number => “Bitten füllen Sie die notwendigen Felder ein”

2.2.2.9. **Create tutoring profile**

If a student wants to become a tutor he has to create a profile. He has to enter Information about himself like his class, year, name, expected wage, time, teachers, email, age, subjects and a picture.

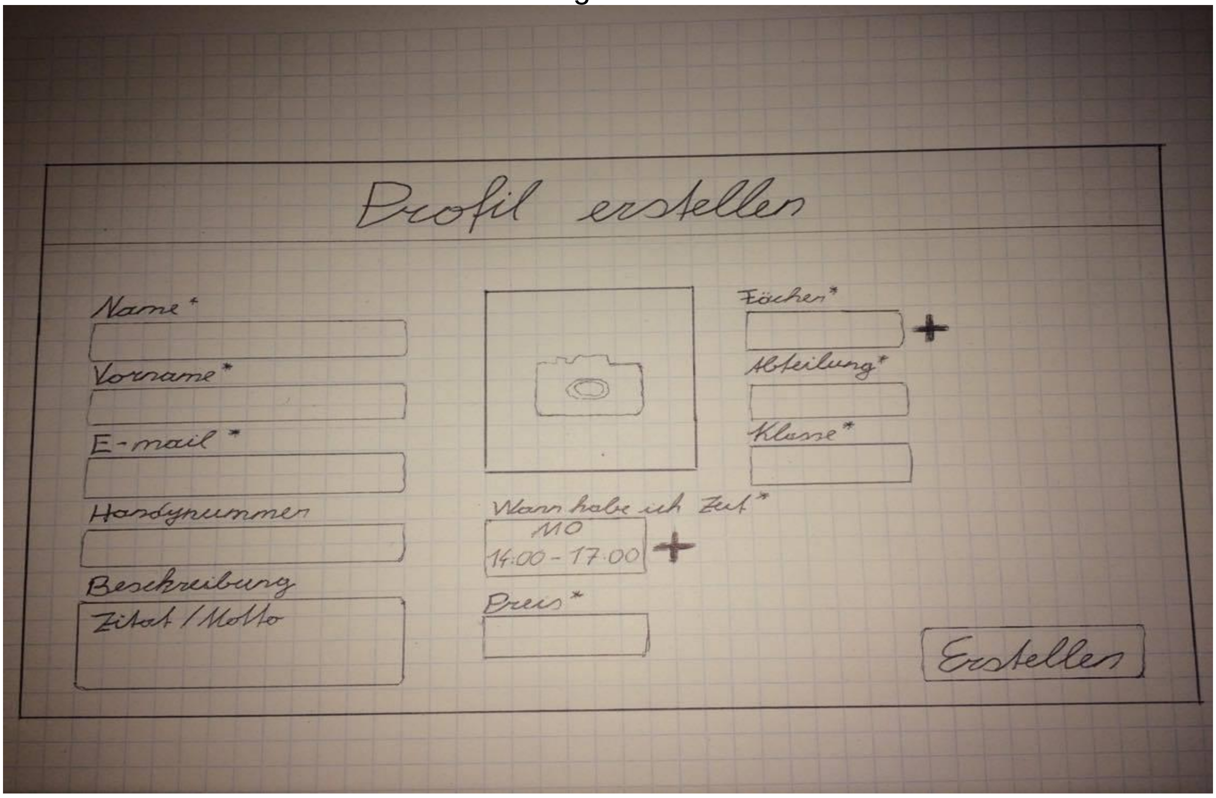
2.2.2.9.1. Characteristic Information

Superior business process:	-
Goal:	A tutoring profile is created
Precondition:	A user wants to become a tutor
Postcondition:	The user has her/his own tutoring profile
Involved User:	User
Triggering Event:	The user want to become a tutor

2.2.2.9.2. Scenario for the good case

Step	User	Activity
1	student	Fill in information
2	student	Press register button
3	server	Save tutor on server

2.2.2.9.3. Gui to call the good case



2.2.2.9.4. Scenario for the bad case

Step	User	Activity
1	student	Fill in information
2	student	Press register button
3	server	● Connection failed => Tutoring profile will not be created ● Timeout =>Changes will not be saved ● Missing information => “Bitte füllen Sie die notwendigen Felder ein”

2.2.2.10. **Maintain own profile**

The tutor can edit his own profile if some of his information have changed. Of course he is also able to delete his profile.

2.2.2.10.1. Characteristic Information

Superior business process:	-
Goal:	The data of the tutor is up to date
Precondition:	Information of the tutor has changed
Postcondition:	The information is up to date again
Involved User:	Tutor
Triggering Event:	Personal information has changed

2.2.2.10.2. Scenario for the good case

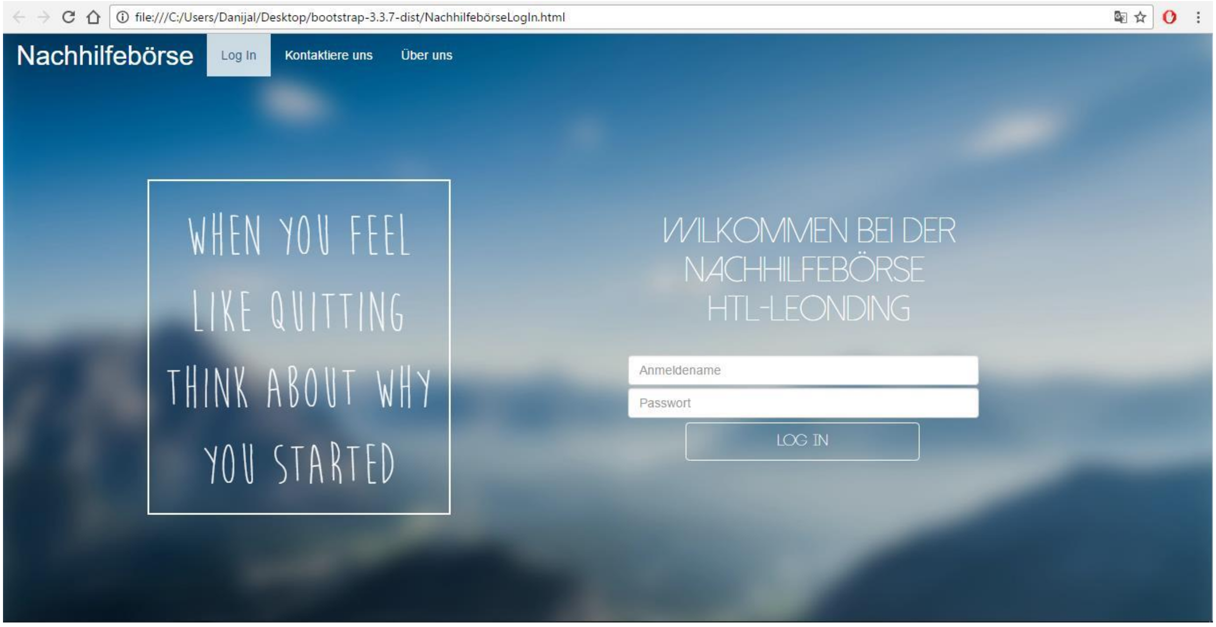
Step	User	Activity
1	tutor	Edit or delete profile
2	server	Saves the changed profile on server or deletes the profile from server

2.2.2.10.3. Scenario for the bad case

Step	User	Activity
1	tutor	Edit or delete profile
2	server	● Connection failed / information is not valid => changes will not be saved ● Timeout => Changes will not be saved ● Empty fields => “Bitte füllen Sie die notwendigen Felder aus”

2.3. Other GUIs

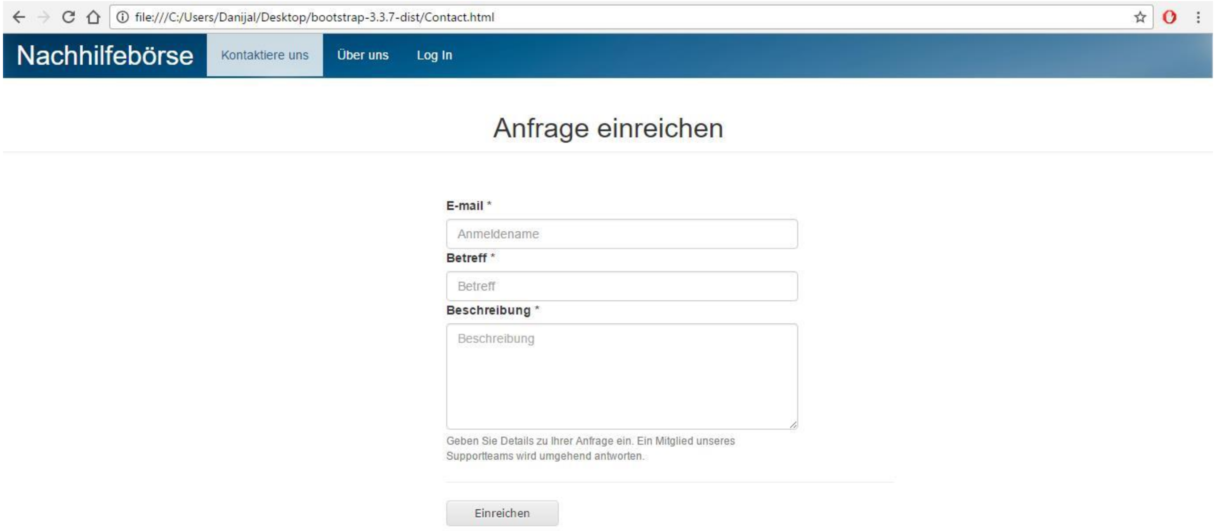
Login


file:///C:/Users/Danijal/Desktop/bootstrap-3.3.7-dist/NachhilfebörseLogIn.html
Nachhilfebörse
Log In
Kontaktiere uns
Über uns
Anmeldename
Passwort
LOG IN

WHEN YOU FEEL LIKE QUITTING THINK ABOUT WHY YOU STARTED

WILKOMMEN BEI DER NACHHILFEBÖRSE HTL-LEONDING

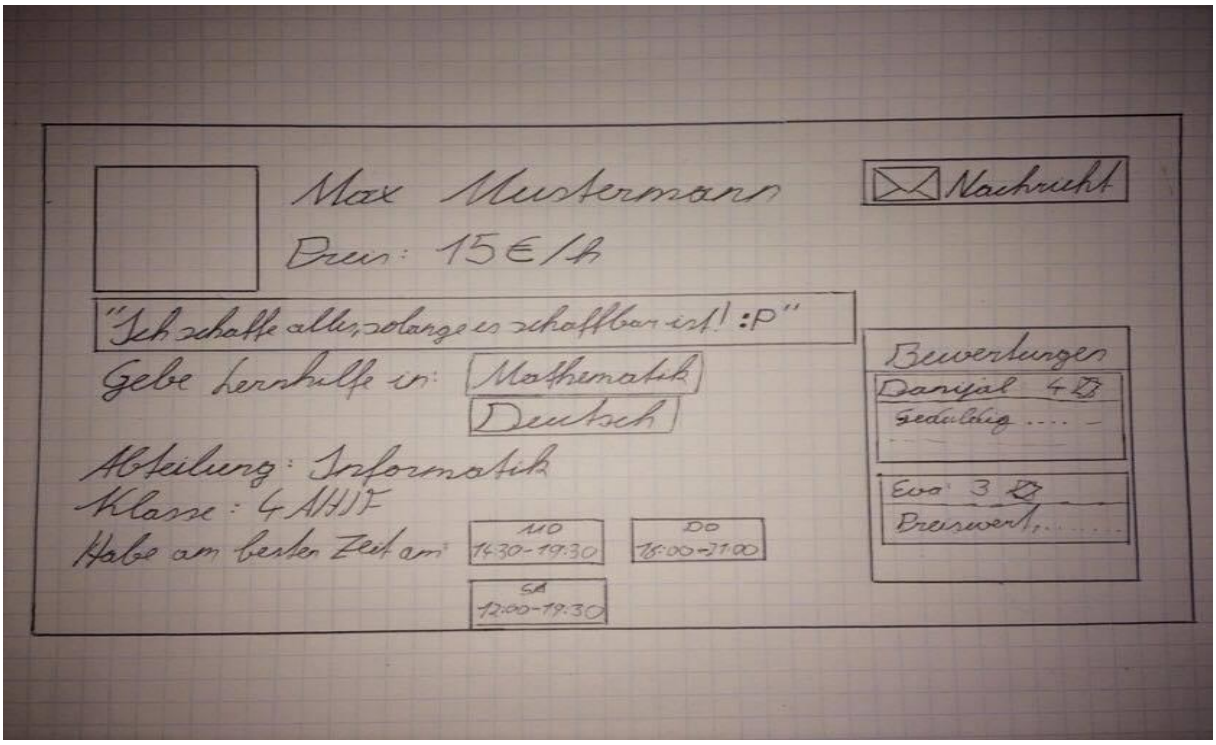
Ask questions



Anfrage einreichen

Geben Sie Details zu Ihrer Anfrage ein. Ein Mitglied unseres Supportteams wird umgehend antworten.

Detailed information of a tutor



Max Mustermann

Preis: 15€/h

Nachricht

"Ich schaffe alles, solange es schaffbar ist! :P"

Gebe Lernhilfe in: Mathematik

Deutsch

Abteilung: Informatik

Klasse: 4AHIF

Habe am besten Zeit am: MO 14:30-19:30 DO 18:00-21:00

SA 12:00-19:30

Bewertungen

Danijal 4 ☆

Geduldig ....

Eva: 3 ☆

Preiswert, ...

3. Non-functional Requirements

ID:	NFR_001
Name:	Modern Design
Type:	USE
Description:	In order to create modern and appealing website, a nice design is needed.
Assigned use cases:	filter/sort tutors, create tutoring profile

ID:	NFR_002
Name:	Data security
Type:	SEC
Description:	The system must guarantee that no one but the students can see private data of the tutors (solution: login with student id and password)
Assigned use cases:	filter/sort tutors, create tutoring profile

ID:	NFR_003
Name:	correct Data
Type:	SEC
Description:	The tutor’s data eg. phone number, name must be correct so that they can be contacted by interested students (solution: Hint while registration)
Assigned use cases:	send tutoring request

ID:	NFR_004
Name:	Waiting time
Type:	EFFIC
Description:	The system must respond after three seconds.
Assigned use cases:	filter/sort tutors

ID:	NFR_005
Name:	Changeable Data
Type:	MAINT
Description:	Data (for example available subjects) must be changeable without editing the code.

Assigned use cases:	administrate data

4. Quantity Structure

The expected number of tutors is about 100 tutors (4 departments * 2nd-5th grade = 4 grades * 2 classes on average * 3 tutors in a class) .Per tutor an image, the name, class, department, prefered times and remuneration, subjects, given ratings and additional information must be saved. This indicates the use of a database.

5. System Architecture and Interfaces

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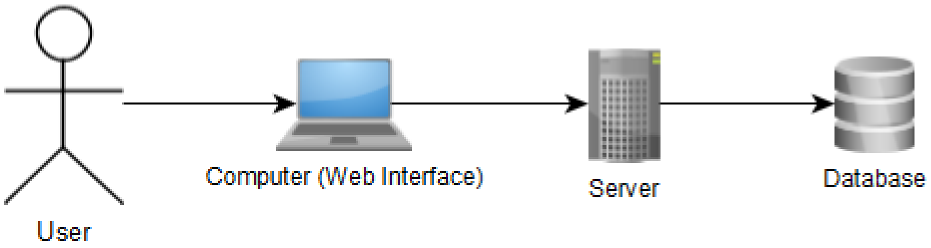

The tutoring market will be available online, via a web interface. We will also use a server and a database, but due to the missing information about the final implementation in the school system, we do not have further details about that.

6. Acceptance Criteria

6.1. Login

Test Step	Expected Behaviour	Test fails if
Login attempt with correct username or password	User is logged in	Username or password is incorrect
Login attempt with incorrect username or password	Error message	Username and password are correct

6.2. Sort/filter tutors

Test Step	Expected Behaviour	Test fails if
Choose a sort category & press “Search”	Sorted list appears	No tutor is registered
Choose filter categories & press “Search”	Filtered list appears	No tutor with those filter categories can be found
Press “Search” without any filter categories	Standard list appears	-

6.3. Show tutor’s profile

Test Step	Expected Behaviour	Test fails if
Pick a tutor and click on it	User gets linked to a page, where the selected tutor is shown	-

6.4. Create tutoring profile

Test Step	Expected Behaviour	Test fails if
User clicks on the button “Become a tutor”	A page appears, where the user can enter his personal data	-
User fills in the required data and presses the “Save” button	User becomes a tutor and his registration is successful	Information is missing

6.5. Maintain tutoring profile

Test Step	Expected Behaviour	Test fails if
Tutor clicks on the button “My profile”	A page appears, where the user can edit her/his personal data	-
User edits information clicks on the “Save” button	Changes were successful	Information is missing or incorrect
User clicks on the “Delete my profile”	Profile gets deleted and user gets linked to the start page	-

6.6. Review tutors

Test Step	Expected Behaviour	Test fails if
User enters the number of books, adds a comment and clicks on the button “Rate”	The rating is added to the list, which must be approved by the administrator	Rating criterias are not filled in or comment field is empty

6.7. Send tutoring request

Test Step	Expected Behaviour	Test fails if
User clicks on the “Contact” button and then on the “Email” button	Tutor gets an automatic email, which informs her/him about the requesting user	User has already sent a contact request
User clicks on the “Contact” button and then on the “SMS” button	Tutor gets an automatic sms, which informs her/him about the requesting user	User has already sent a contact request

6.8. Approove reviews

Test Step	Expected Behaviour	Test fails if
Administrator goes to the administrator section and clicks on the button “Pending ratings”	Pending ratings are shown	There are no pending ratings
Administrator reads the ratings and clicks “Approve”	On the tutors page, the rating is listed	-

Administrator reads the ratings and clicks “Decline”	The ratings is deleted	-

6.9. Adminsitrate data

Test Step	Expected Behaviour	Test fails if
Administrator goes to the administrator section and clicks on the button “Edit permanent information”	Permanent data isshown	-
Administrator selects data which should be changed and clicks “Change”	The permanent data is changed	Data which must be filled in is missing