

The background of the slide features a dynamic, abstract shape composed of various shades of blue and purple liquid or paint. It has a thick, dark base on the right side and thin, wispy streams rising towards the top center.

JGRADER

Project Portfolio

Human Computer Interaction

Spring 2014

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Tyler Buchmann, Sourabh Lal

Introduction

The scope of this project is to design a new and better version of the existing coursework management tool named jGrader, which is available at Jacobs University Bremen. The focus is on designing for a good user experience, while making the platform more usable for students than it is now. Furthermore, the website was designed following the principles of good Interaction Design and using the appropriate design tools.

The project started with every member of the group conducting independent Design Research. The results of the entire course were collected and used to construct an affinity diagram. We found out that there are many things to be improved in jGrader, starting from the basic layout design including choice of color and structure of the presented information, up to useful functionalities such as having a good overview of upcoming deadlines, an easier way to request extensions, and a better way to communicate with other students and TAs from a specific course.

Team Description

Our team consisted of six people, two from the field of Information Management and systems, and three from computer science. Our diverse knowledge backgrounds, mixed with technical skills and a focus on good-looking and high quality design build an extraordinary ground for our project work.

Since all of us interact with computers on a daily basis, by using them for our studies, for our jobs, and even for pursuing our hobbies, we understand the necessity and importance of good interaction design, and are thus very enthusiastic about presenting the ideas and solutions that we have come up with for this project. We hope you enjoy our prototypes!

Meet the Team



Tyler Buchmann

Age: 21

Country: USA

Major: Computer Science

Hobby: Basketball

Responsibilities: Use case creation, website implementation, coding phase coordination



Mihai Fieraru

Age: 21

Country: Romania

Major: Computer Science

Hobby: Soccer

Responsibilities: Scenario creation, website implementation



Radu Homorozan

Age: 23

Country: Romania

Major: Information Management and Systems

Hobby: Gym and Jogging

Responsibilities: Portfolio creation, use case creation, overall use case, scenario and persona adjustments



Sourabh Lal

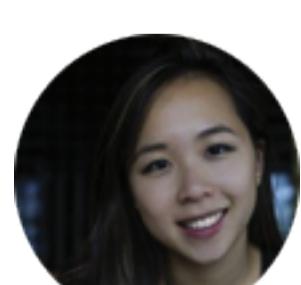
Age: 21

Country: India

Major: Computer Science

Hobby: Cricket

Responsibilities: Scenario creation, website implementation



Katharine Lee

Age: 22

Country: Australia

Major: Information Management and Systems

Hobby: Jogging

Responsibilities: Website and documentation design, persona creation, project coordination

Katharine Lee, Radu Homorozan, Mihai Fieraru, Tyler Buchmann, Sourabh Lal

Persona 1: Anastasiya Sliva



Anastasiya Sliva

"There are some perks attached to being a wallflower."

Age: 21

Nationality: Russian

Personality: Timid

Relationship Status: Single

Likes: Reading, writing, cycling

Dislikes: Things that are too loud or "in your face"

Friends: 10

Background

Anastasiya Sliva is 21 and was born in Moscow, Russia where she lived her entire life until she made the move to England when she was 16. Now she is studying in Germany at Jacobs University Bremen, where she is pursuing a degree in Computer Science. Anastasiya has always been a quiet, timid girl who rarely was the first to make an introduction or start a conversation. She was the type of girl who would sit in class and never raise her hand. People that know her have often described her as a bystander or observer. She has always been a sort of viewer to an event rather than a part of it or a direct influencer. Nonetheless, Anastasiya is content in her ways and enjoys her life as it is. Having only a handful of friends, she keeps to herself and her studies.

Interaction with J-Grader

Anastasiya is a student in a class at Jacobs University called Databases and Web Applications. She must take this course as a mandatory credit within her major. During this course she must make full use of Jacobs University's online jGrader platform. Anastasiya has been using the platform for a while now, and considers herself an advanced user. She knows all the system "tricks", uses shortcuts, and clicks through the navigation at an incredible speed. Submitting homework assignments in jGrader has become a regular aspect of her weekly routine.

Image Source: http://i.dailymail.co.uk/i/pix/2013/09/26/article-0-184599320000578-671_634x539.jpg

Persona 2: Tom Timberland



Tom Timberland

"You can achieve everything you want, given that you work hard enough."

Tom Timberland

Age: 22

Nationality: Australian

Personality: Confident

Relationship Status: Single

Likes: Reading, playing video games, cooking

Dislikes: Inefficiency

Friends: 50

Background

Tom Timberland is 22 and was born in Sydney, Australia. Since he was a young baby he was diagnosed with Aspergers syndrome (a form of Autism). Asperger children tend to be quite brilliant and intelligent, but unaware of normal social interactions. Tom was always brilliant though - not just academically, but he made a conscious effort to pay attention to social rules and habits, so that he could be smart and not socially inept. Tom currently resides in Germany, where he moved for his University. He is currently International Politics and History and is the top of his class. Despite his disadvantage he is one of the most liked people on his campus and is the head of many student organizations. In fact, his largest contribution has been to his school's newspaper in which he regularly blogs about relevant political affairs.

Interaction with J-Grader

Tom is a student of the class Databases and Web Applications, which he takes as a transdisciplinary elective. He has never used jGrader or anything similar before, as his high school professors always requested submission by e-mail. Tom will have to submit his first homework soon, and yet has to get familiar with the coursework management tool.

Scenario 1: Finding out missed work

Anastasyia has been sick for a while, missing a lot of her classes and not being able to do the homework assignments on time. She will have the weekend to catch up with all her work, but she is not certain what exactly she missed while she was sick. Due to the fact that she does not know a lot of people and is a rather shy person in general, she hesitates to directly ask her fellow students for help. She contacts the course instructors, but those are not very responsive and she usually receives the replies a few days later, thus not having enough time to catch up with the entire work. She remembers that jGrader, the coursework management tool she uses, offers a communication system, where she can ask other students about the material she missed. Therefore, she decides to visit the website and ask her fellow students, as well as her TAs, for help regarding the course content that she missed. Furthermore, she sees all upcoming deadlines and can easily decide for which assignments to request an extension, since her time will not allow her to catch up with everything on time.

Scenario 2: Submitting an Assignment

Tom has just started his second semester at Jacobs University Bremen, and decided to take Databases and Web Applications as a transdisciplinary elective in order to gain some technical knowledge, which will hopefully help him to better manage his research data in the future. He has finished the first assignment, and wants to submit it via e-mail, as he was used to from high school. However, Tom notices that the assignment sheet states that the homework has to be submitted via jGrader, a coursework management tool used by most instructors at Jacobs University. Tom has never used anything like this before, and is rather hesitant in embracing the idea. He believes that there is no easier way of submitting assignments than via e-mail. Unfortunately, he does not have a choice, and decides to visit the platform in order to get familiar with it and hopefully find some benefit in using it.

Use Case 1: User selects active courses

Description:

A description of this case study will most accurately be described as a solution to logging into jGrader and selecting the relevant course for the user/student

Agents:

The main agents present in the interaction described in our solution are the:

- User (student)

Purpose:

The purpose of this use case is for a user to log into a course specified by the j grader system. Once achieved this will allow the user to access functions and features offered by the system related to the course.

Situation Start:

The user has already arrived at the homepage of j grader and has not yet logged into his account or course.

Situation End:

The system has logged the user into the user selected coursework homepage

Main steps from A to Z:

1. The system displays a login page
2. The user enters and submits his or her login credentials (including user name and password)
3. The system shows a text box in which the student can select the relevant courses for this semester
4. The user chooses the relevant courses and presses submit
5. The system redirects the user to the home page where all information on the selected courses is displayed

Alternative Flow

- 2.1. The System displays an error as the login credentials are incorrect. It asks the user to try again.

Use Case 2: Submitting Homework

Description:

The purpose of this use case is to showcase the homework submission by a student for a course she is registered for.

Agents:

The main agents present in the interaction described in our solution are the:

- User (student)

Purpose:

The purpose of this use case is to illustrate the process of submitting a homework by a student.

Situation Start:

Student is logged into jGrader and at the home page.

Situation End:

The student checks the file that she has submitted.

Main steps from A to Z:

1. The system shows the current home page
2. The student clicks on the “Submit Assignment” link in the top menu bar.
3. The system directs the user to the “submit assignment” page and shows the assignments with their upcoming deadlines.
4. The user selects the assignment they wants to submit a solution for.
5. The system opens up a box which allows the user to select the files he or she wants to submit
6. The user selects the files he or she wants to submit and then clicks attach
7. The system shows the progress bar while the files upload. When it is finished the dialogue box closes, revealing the “submit assignment” page again, in which it now shows that files have been submitted to the selected assignment

Alternative Flow

- 6.1 The user submits files that are of the wrong type or have malware detected
- 6.2 The system provides an error box and asks the user to try again. It will not upload such files

Use Case 3: Viewing Submitted Work

Description:

The purpose of this case is to show the process in which a user will undergo when attempting to view their already submitted assignments. This will allow the user to check quickly what files he or she has uploaded in their submission.

Agents:

The main agents present in the interaction described in our solution are the:

- User (student)

Purpose:

The purpose of this use case is to showcase how a student can view their submitted work to an assignment.

Situation Start:

Student is looking at the homepage of the JGrader website.

Situation End:

Student is viewing their submitted work for their assignment of choice

Main steps from A to Z:

1. System displays the JGrader homepage
2. The user clicks on the “View Solutions” option in the top navigation bar
3. The system redirects the user to the “View Solutions” page in which displays the assignments the user has completed and submitted work for, and that has also been graded
4. The user selects the assignment he would like to view
5. The system directs the user to the solutions page in which displays the users submitted work.

Alternative Flow:

- 4.1 The system displays a message informing the user that the assignment has no file submission yet and that the user has not uploaded any files. The system asks the user to select another assignment.

Use Case 4: Requesting Extension

Description:

The purpose of this case is to show the process in which a user will undergo when attempting to request an extension for any given assignment on JGrader.

Agents:

The main agents present in the interaction described in our solution are the:

- User (student)
- User (Professor)

Purpose:

The purpose of this use case is to showcase how a student can request an extension for an assignment.

Situation Start:

Student is at the JGrader homepage

Situation End:

The student is notified when their request is processed.

Main steps from A to Z:

1. The system displays the JGrader homepage
2. The User clicks the “Request Extension” link on the top navigation bar
3. The System displays the current assignments, organized by date. In each assignment block there is a “Request Extension” button
4. The user selects the assignment he wishes to request the extension for and then clicks the corresponding “Request Extension” button
5. The system opens a dialogue box which asks the user to input the date, time and reason for the extension.
6. The user fills in the fields and submits his answers
7. The system accepts the users submission and closes the dialogue box, revealing the original “Request Extension” page. On this page the user can view the status. There is a icon next to the assignment he requested an extension for that shows that the request is pending.

Alternative Flow

- 4.1. The system displays an error page if the values are incorrect or invalid and notifies the user by displaying an error message that the values inputted were invalid. The user has no choice but to click the “go back” button, which will display the form at number 5.

Reasoning for Website Design

Overall design and layout

When thinking about jGrader, or a coursework management tool in general, we think about a system that we use on a regular basis, one that helps managing our assignments, reminding us of upcoming deadlines, and making it easy for students to fulfill the main task for which they use the platform – namely submitting homework assignments.

We tried to make jGrader very personal, allowing users to feel well when using the system, and not being distracted by unnecessary functions and illustrations. The aesthetic and minimalistic design enhances this experience and feeling. The choice of blue color – which is the most favorite color among the worlds' population – offers a good contrast to the white background, as well as an emotion of calmness and relaxation.

The flat, sharp edged, and consistent design allows users to quickly become familiar with the system, without having to spend hours of navigation in order to “learn” the platform. The symmetry creates a feeling of order and tidiness, which again ties in with the overall feeling of calmness. The entire platform is designed to be very task-oriented, with as little distraction as possible while fulfilling an action such as submitting homework or requesting an extension.

Reasoning for Website Design

Login Page

The login page follows a simplistic design, with focusing on the single task of logging in. The blue color of the login screen presents a good contrast to the environment and is placed in the user's point of vision, allowing him/her to concentrate on the task he/she wants to fulfill. Additionally, we use empty space as a design tool in order not to distract the user.

The large login button also is an application of Hick's law as we want users to quickly navigate through the log in page and get to the main content (homepage) page as soon as possible.

At the bottom of the page, in a predictable and continuously consistent position from page to page, we have contact and about tabs, where users can find out more about the system and contact the responsible people who maintain the platform.

After the very first time a user logs in, he/she is asked to log into the courses that he/she is registered for. This way, the system will be able to show only relevant information and limit the selection only to the courses that the user is registered for. This was a highly demanded feature listed in the affinity diagram and mentioned by users that was interviewed by our team.

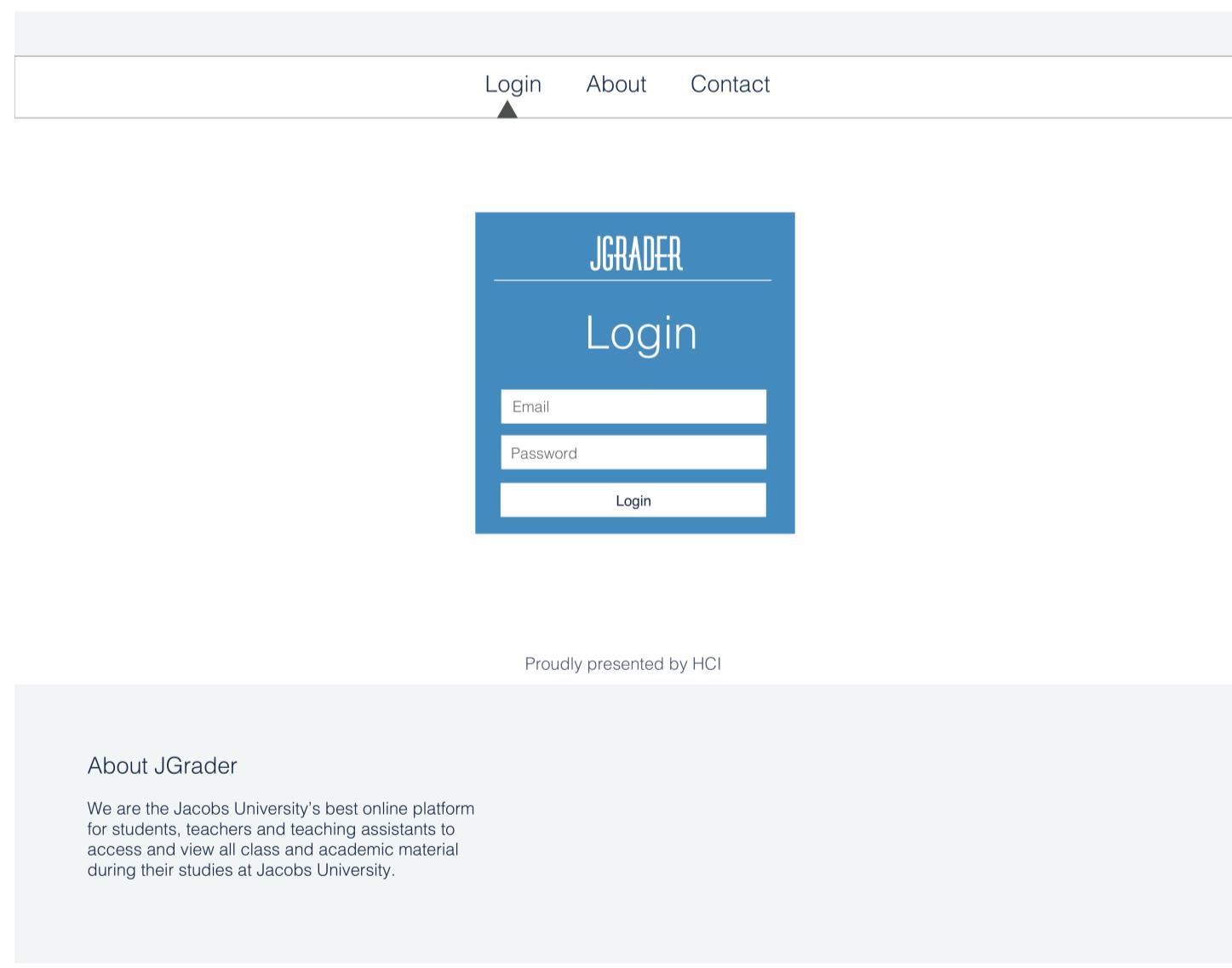


Image 1: The login screen

Reasoning for Website Design

The Overview (Homepage)

Once logged in, the user can see a timeline with entries from other students from the same courses. A discussion feed on the right side notifies the user about current comments and entries, indicating the student who posted the entry as well as the course it belongs to.

On the right hand side, a list of upcoming deadlines reminds the user of assignments that have to be submitted. Another list shows the recently submitted files, the extensions that have been requested, and the recently graded assignments. The lists are presented in a structured manner, as this makes it easier for user to identify what he/she is looking for, by only skimming through the emphasized headlines.

In the middle of the screen, users can create new entries within a course that is visible to all other registered members of that course. Similar to the timeline design on Facebook, this concept is very familiar to users, allowing them to use it instinctively without any prior experience needed.

The screenshot displays the JGRADER homepage with the following layout:

- Header:** JGRADER (centered), 12:00PM (top right).
- Navigation Bar:** Home, Submit Files, Submitted Files, View Solutions, Request Extension, Logout.
- Discussion Feed:** A list of messages from other students, each with a small profile picture and a timestamp. The messages are all identical: "Notes from the lecture Hey guys I was sick last class and was wondering if anyone".
- Central Content:**
 - A message from Katharine Lee: "Notes from the lecture (SWE)???" (Software Engineering). Below it is a detailed message: "Hey guys! I was sick last class and was wondering if anyone took notes from the previous lecture? I have the slides on here but I was hoping for the notes particularly relating to the exam material that the professor mentioned she would cover during the class. If anyone can help me out that would be great!!! Thank you!!!". Below this is a text input field with icons for a user and a smiley face, and a "Send" button.
 - A message from Chris Nobre: "Notes from the lecture (SWE)???" (Software Engineering). Below it is a message: "Hey Kat, I took some notes. I can send them to you via email if that is okay. He didn't go over too much so there isn't too much to worry about. However, there WILL be a quiz next Monday! Apparently it will be on C++.".
- Right Sidebar (My Activity):**
 - Upcoming Assignments:**
 - Software Engineering Assignment 4 Due: 12.03.2015
 - Human Computer... Assignment 4 Due: 12.03.2015
 - Databases and Web... Assignment 4 Due: 12.03.2015
 - Recently Submitted Files:**
 - Software Engineering Assignment 3 Due: 05.03.2015
 - Human Computer... Assignment 3 Due: 05.03.2015
 - Databases and Web... Assignment 3 Due: 05.03.2015
 - Extension Requests:**
 - Software Engineering Assignment 4 Requested: 10.03 GRANTED
 - Information Communi... Assignment 4 Requested: 10.03 PENDING
 - Recently Graded Results:**
 - Software Engineering Assignment 3 Grade: 96.5%
 - Human Computer... Assignment 3 Grade: 89.5%
- Footer:** About, Contact.

Image 2: The Overview Screen (Homepage)

Reasoning for Website Design

The Navigation Bar



Image 3: The Navigation Bar

The navigation bar is designed in a simple and structured manner, allowing the user to easily find his/her way through the system. The simplicity lies not only in the modest use of a clear and consistent blue font, but also in the low number of options that a user can choose from. We aimed to apply Hick's Law here, as we want users to quickly navigate through the system and focus on their task, without having to spend too much time on deciding which menu to select.

A small dark grey indicator shows the user which tab is currently active, following the user interface design guideline, which states that a visibility of the current system status should be available.

The Submit Files View

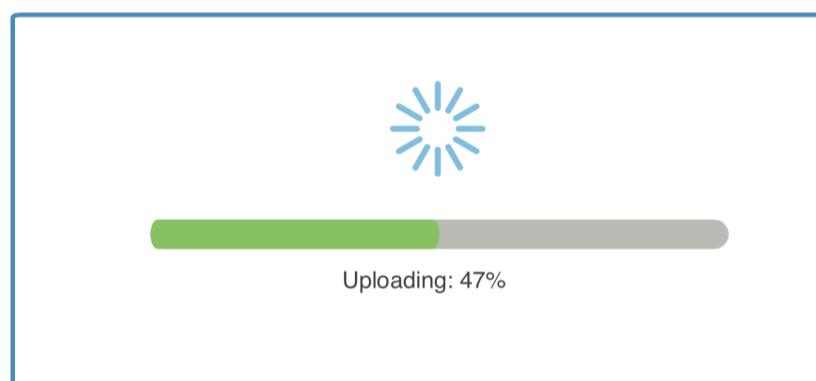


Image 4: The Uploading Process

The “submit files” view follows the consistent and minimalistic design used throughout the platform. At a first glance, users can see the assignments that have to be submitted, allowing them to attach single or multiple files for each assignment and request an extension if necessary.

The small colored indicators show the current status of an assignment, whether an extension has been requested, or whether it is pending, granted or denied. The choice of color for the indicators is intentionally blue, red, black, and gray, as even people with the red-green colorblindness – the most common one – are able to distinguish the colors. Furthermore, we added the name of the color as a text next to the indicator, in order to allow everyone to interpret the indicators, no matter what kind of colorblindness they have.

An additional feature that we added is the progress indicator when uploading a file. Large files can take a lot of time to upload, and users should be informed about the uploading process, especially about the fact that the uploading is still “in progress” and the system did not get stuck.

Reasoning for Website Design

The screenshot shows the JGRADER website's "Submit Files" view. At the top, there is a navigation bar with links for Home, Submit Files, Submitted Files, View Solutions, Request Extension, and Logout. The time "12:00PM" is displayed in the top right corner. Below the navigation bar, there is a large button labeled "Submit Files or Request an Extension". To the right of this button is a legend with four items:

- Request Granted (Blue)
- Request Pending (Red)
- Request Denied (Black)
- No Request (Grey)

The main content area contains five course assignments, each with its name, deadline, and instructions file information. Each assignment has a status indicator "(No Request)" followed by a grey circle. To the right of each assignment are two buttons: "Request Extension" and "Attach files".

Assignment	Deadline	Instructions file	Status	Action Buttons
Software Engineering Assignment 4	04.02.15, 12:00pm	0	(No Request)	[Request Extension] [Attach files]
Human Computer Interaction Homework 4	05.02.15, 12:00pm	0	(No Request)	[Request Extension] [Attach files]
Marketing Homework 3	07.02.15, 12:00pm	0	(No Request)	[Request Extension] [Attach files]
Databases and Web Applications Assignment 2	10.02.15, 12:00pm	0	(No Request)	[Request Extension] [Attach files]
Marketing Homework 3	07.02.15, 12:00pm	0	(No Request)	[Request Extension] [Attach files]

About Contact

Image 5: The Submit Files View

Reasoning for Website Design

The screenshot shows the JGRADER website's "Submit Files" view. At the top, there is a navigation bar with links for Home, Submit Files, Submitted Files, View Solutions, Request Extension, and Logout. The time "12:00PM" is also displayed. Below the navigation bar, there is a legend for request status: Request Granted (Blue), Request Pending (Red), Request Denied (Black), and No Request (Grey). The main content area lists five assignments:

- Software Engineering Assignment 4**: Deadline: 04.02.15, 12:00pm. Instructions file: 0. Status: (No Request). Buttons: Request Extension (grey), Attach files.
- Human Computer Interaction Homework 4**: Deadline: 05.02.15, 12:00pm. Instructions file: 0. Status: (No Request). Buttons: Request Extension (grey), Attach files.
- Marketing Homework 3**: Deadline: 07.02.15, 12:00pm. Instructions file: 0. Status: (No Request). Buttons: Request Extension (grey), Attach files.
- Databases and Web Applications Assignment 2**: Deadline: 10.02.15, 12:00pm. Instructions file: 0. Status: (No Request). Buttons: Request Extension (grey), Attach files.
- Marketing Homework 3**: Deadline: 07.02.15, 12:00pm. Instructions file: 0. Status: (No Request). Buttons: Request Extension (grey), Attach files.

At the bottom of the page, there are links for About and Contact.

Image 5: The Submit Files View