

Final Project Report

Development of web system
« System of Erasmus Community »



VILNIUS GEDIMINAS
TECHNICAL UNIVERSITY



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Acknowledgments

First of all, we would like to thank our VGTU supervisor Simona Ramanauskaitė for giving us an interesting project which enabled us to strengthen our skills in the field of the web.

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Finally, we would like to thank our new friends and our meetings which allowed us to share and make this experience even more enriching.

Abstract

By means of this Erasmus experience, we were able to know the steps of an Erasmus internship abroad. Thus, we have been confronted with different problems that can occur when we leave for such a stay: The accommodation, the university, the means of transport...

More and more students are leaving for Erasmus, which is why, with the agreement of our tutor, we have created a website that allows students to be helped and better informed in their experiments. This website therefore allows the linking of students wishing to leave or going abroad, to find accommodation, to work or to publish the places to visit in a given place.

Thus, any student wanting to be helped in his project to go abroad can be helped through our website.

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Lithuania



Lithuania is a country in northern Europe. It borders the Baltic Sea and is located in northern Poland, northern Belarus and southern Latvia.

Lithuania is the largest and most populous of the Baltic States. It lies to the south-east of country. Its total area is 65,303 km². Its inhabitants, the lithuanians, are among the of 3,565,000 inhabitants. Its capital is Vilnius and has 560,000 inhabitants. Language official is lithuanian.

The most famous culinary specialty abroad is the cold beet soup. The potato is the staple food of multiple dishes like apple crepes and cepelinai (dumplings of meat potatoes, cheese or mushrooms)

Vilnius Gediminas Technical University



Vilnius Gediminas Technical University (VGTU) is an innovative Lithuanian University, educating highly qualified and creative specialists. The University is the leader among the institutions of technological science education, ensuring modern studies, orientated to the labour market. Scientific research and experimental development is performed by 14 institutes, 2 research centres and 34 research laboratories.

The University's ranking is rather high, around 11,000 students attend it which makes it the second biggest University in Vilnius. Measuring student mobility in the ERASMUS exchange program, VGTU is the most popular university in Lithuania for foreign students.

Why this Project ?

Our project was given to us by our supervisor following a discussion with her about our interests and the project we would like to do. We told him about our difficulties finding housing and getting in touch with other students in the country. So this is how the idea of making a website allowing the connection of students within the same country came.

To achieve this, we started by looking for other websites and existing applications that have similar functionality to our project.

Then we thought about the functionality of our website should have and what would differentiate it from other applications.

Once the features have been defined, we have made a classifications of the tasks according to their usefulness and the time that we should put for the actions according to the Agile method.

Our website is called "EraStud", it is aimed especially at students wishing to do Erasmus but it also targets universities that can see what the students of their university think as well as professors who can see the type Project that a student has completed.

A ranking system is also applied at the level of the different cities according to the students who have already participated in the Erasmus program in this city. So a student who wants to go abroad but does not know which city to take, can look at the opinions of people who have already done a project in this city.

Survey

We started our project on a study of the existing sites in the same field as our project. So we went through the internet looking for erasmus-related sites and we found some.

1) www.erasmusworld.org

Erasmus World is an information portal for students wishing to go abroad.

Application on site:

- People can share their experiences erasmus
- You can see the list of cities and universities
- You can share your internship report with others

2) esn.org

Erasmus Student Network (ESN) is the largest student association in Europe.

Application on site:

- One can easily find other erasmus students
- You can find out about the evenings organized by the association
- A news system

3) www.erasmusu.com

This is a website is just a social network or online community for international students.

Application on site:

- They affect a lot of destination, cities like universities
- 9 possible languages on their site
- People can rate and comment on their erasmus experience
- You can find accommodation easily as well as work
- Photo sharing
- There are blogs, forums

We were also able to see that on each site they proposed a system of connection to be able to participate in the evolution of the site and the sharing of information.

Technology used on the website

HTML5

We chose HTML5 because it not only offers better legibility but also enhances accessibility. The language also meets a need to be multiplatform, which makes it easier to bring the world of the Web on mobile platforms for example.

It served us in particular to make each page of the project but especially our homepage which is in static.

```
<div class="container-fluid">
  <div class="row">
    <div class="col-md-1"></div>
    <div class="col-md-5">
      <div class="col-md-6">
        <div id="titre">
          <strong><br>Cities</strong>
        </div>
        <p>
          <br> You can find the city in which you will live in Erasmus as well as opinions of the party people out there.<br><br>
          <strong>City ranking Erasmus </strong><br><br>
          <strong>Share your experience </strong><br>
        </p>
      </div>
      <div class="col-md-6">
        <br><br>
      </div>
    </div>
    <div class="col-md-5">
      <div class="col-md-6">
        <div id="titre">
          <strong><br>Universities</strong>
        </div>
        <p>
          <br>You can find here the university you are going to study, you will also find a list of professors active in Erasmus.<br>
          <br>
          <strong>University ranking Erasmus</strong><br><br>
          <strong>List of professors</strong>
        </p>
      </div>
      <div class="col-md-6">
        <br><br>
      </div>
    </div>
    <div class="col-md-1"></div>
  </div>
```

CSS3

CSS3 is the latest standard for CSS. It has been split into "modules". It contains the "old CSS specification" (which has been split into smaller pieces). In addition, new modules are added. Most of the new CSS3 properties are implemented in modern browsers.

For website design, we used Bootstrap and W3C. They are easy to use even for people who are more in programming than design. Making a navigation bar or structuring a page is really easy and it is done with many different components for each html tag.

Bootstrap and W3C allowed us to concentrate on the programming, while still having a nice design.

They are available free of charge and have extensive documentation on their official website.

```
input[type=text] {
width: 20%;
box-sizing: border-box;
border: 2px solid #ccc;
border-radius: 4px;
font-size: 16px;
background-color: white;
background-image: url('searchicon.png');
background-position: 10px 10px;
background-repeat: no-repeat;
padding: 12px 20px 12px 40px;
-webkit-transition: width 0.4s ease-in-out;
transition: width 0.4s ease-in-out;
}

input[type=text]:focus {
width: 35%;
}

/* list right*/
#filter-links {
list-style-type: none;
padding: 0px;
margin: 0;
}

#filter-links li a {
border: 1px solid #ddd;
width: 35%;
margin-top: -1px; /* Prevent double borders */
background-color: #f0f0f0;
padding: 12px;
text-decoration: none;
font-size: 18px;
color: black;
display: block
}
```

JavaServer Pages

JavaServer Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. The use of Java by the JSP allows an independence of the execution platform but also of the web server used.

With Tomcat, it is possible to work directly in the webapps directory with the contents of the decompressed web archive. This feature is particularly interesting during the development phase of the application because it is not compulsory to generate the web archive to test each modification.

PostgreSQL

SQL is a standardized computer language used to exploit relational databases. The data manipulation language part of SQL allows you to search, add, modify or delete data in relational databases.

We chose Postgres as the main database for our website because it provides us with the best solution to running a DataBase. We made the choice to use this database because the website we programmed uses Javascript and JQuery. For the database, an ER model was built with our internship master

```
DROP TABLE IF EXISTS job, commentplace, client, subject, university, city;

CREATE TABLE city(
    idcity text NOT NULL PRIMARY KEY,
    country text,
    description text,
    img text
);

CREATE TABLE client(
    lastName varchar(20),
    firstName varchar(20),
    city varchar(20),
    email text CHECK (email LIKE '%@%.%') PRIMARY KEY,
    passwd varchar(30) CHECK (passwd LIKE '%____%'),
    img text
);

CREATE TABLE university(
    name varchar(50) NOT NULL PRIMARY KEY,
    city varchar(20),
    mail text,
    site text,
    description text,
    img text,
    CONSTRAINT FK_university FOREIGN KEY(city) REFERENCES city(idcity)
);

CREATE TABLE subject(
    title varchar(50),
    email text,
    university text,
    years text,
    description text,
    CONSTRAINT PK_subject PRIMARY KEY(title,years),
    CONSTRAINT FK_subject FOREIGN KEY(email) REFERENCES client(email)
);
```

JQuery

JQuery is a library (that is, a set of ready-to-use codes) designed to simplify the writing of JavaScript codes, this library is the most famous and the most used to date.

JQuery allows you to manipulate HTML elements (text, images, links, videos, etc.) and formatted in CSS (position, size, color, transparency, etc.) using simple instructions that give access to Immense possibilities of JavaScript.

JQuery's motto is "Write less, do more"

We used JQuery to make the link between our database, the site and our client, so thanks to this we can execute queries on our database

```
<%@ page import="java.io.*" %>
<%@ page import="javax.servlet.*" %>
<%@ page import="javax.servlet.http.*" %>
<%@ page import="javax.servlet.annotation.WebServlet" %>
<%@ page import="java.sql.*" %>

<%
try{
    Class.forName("org.postgresql.Driver");
    String url = "jdbc:postgresql://localhost/postgres";

    Connection con=DriverManager.getConnection(url,"postgres","root");
    Statement stmt = con.createStatement();

    Connection con2 =DriverManager.getConnection(url,"postgres","root");
    Statement stmt2 = con.createStatement();

    // list of cities
    /*String query ="select idcity from city order by idcity asc;";
    ResultSet rs = stmt.executeQuery(query);*/

    %>
    <ul id="filter-links" class="filter-links">
    <%
    String query = "select distinct country from city order by country asc;";
    ResultSet rs = stmt.executeQuery(query);
    while(rs.next()){
        String country = rs.getString(1);
        %><li><a href="#" class="header"><%out.print(country);%></a></li> <%

        String query2 ="select idcity from city where country='"+ country + "' order by idcity asc;";
        ResultSet rs2 = stmt2.executeQuery(query2);
        while(rs2.next()){
            String idcity = rs2.getString(1);
            %> <li><a href=""><%out.print(idcity);%> <span style="color: #f0f0f0" <%out.print(country);%></p></a></li> <%
        }
    }
}
```

JavaScript

JavaScript, often abbreviated as "JS", is a high-level, dynamic, untyped, interpreted runtime language. Alongside HTML and CSS, JavaScript is one of the three core technologies of World Wide Web content production; the majority of websites employ it, and all modern Web browsers support it without the need for plug-ins.

Javascript serves us by hiding parts and showing parts when the user clicks on something, adding components and many other useful hidden features, and when the customer clicks on the section, a javascript function is triggered and Uses jQuery to hide the previous section and show the one you want.

```
function filterLinks(element) {
    var el = element.textContent,
        linksToLowerCase = el.toLowerCase();
    if (el === 'All') {
        each('.view', function(e) {
            e.classList.remove('view');
        });
        animate(items);
    } else {
        each('.view', function(e) {
            e.classList.remove('view');
        });
    }

    animate(document.querySelectorAll('.' + linksToLowerCase));
};

function each(el, callback) {
    var allDivs = document.querySelectorAll(el),
        alltoArr = Array.prototype.slice.call(allDivs);
    Array.prototype.forEach.call(alltoArr, function(selector, index) {
        if (callback) return callback(selector);
    });
};

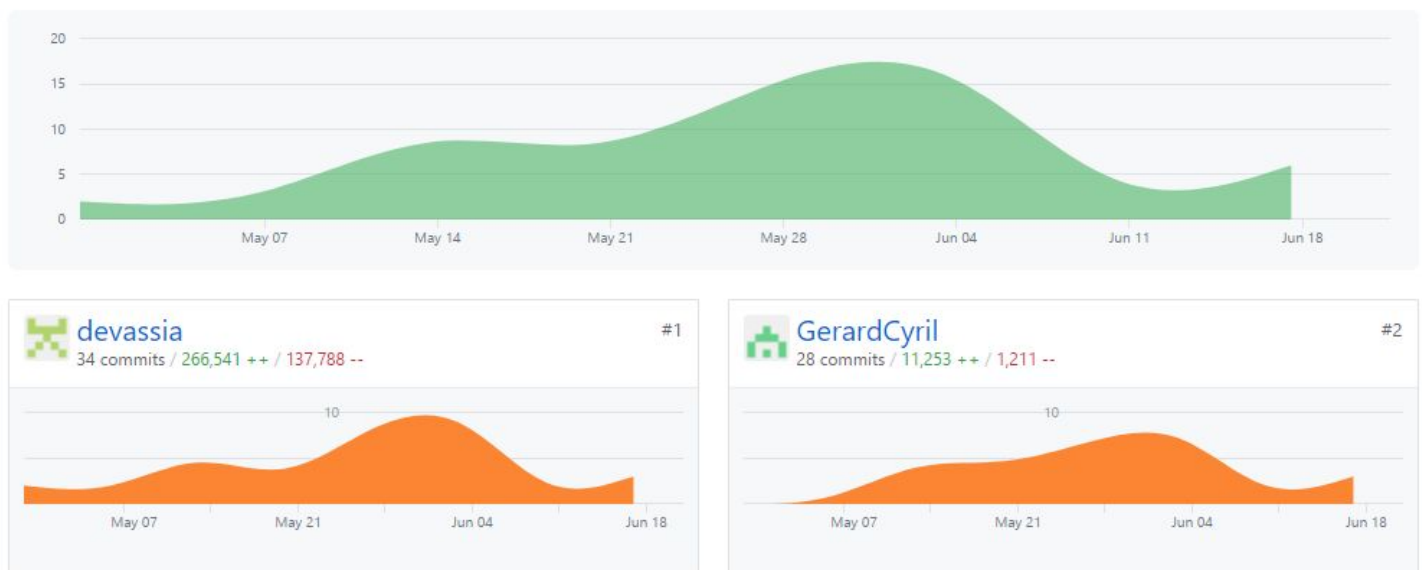
function animate(item) {
    (function show(counter) {
        setTimeout(function() {
            item[counter].classList.add('view');
            counter++;
            if (counter < item.length) show(counter);
        }, 50);
    })(0);
};
```


GitHub And Agile Scrum

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers.

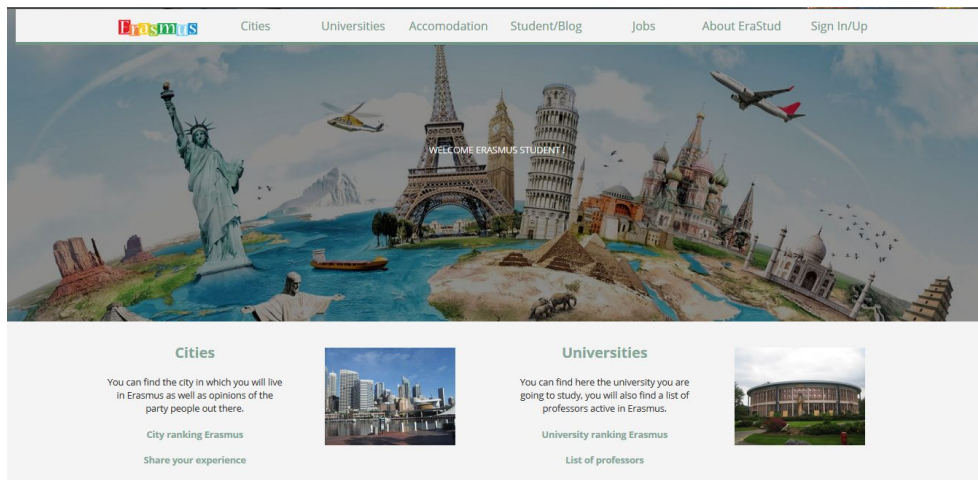
Agile scrum is a method where the team selects a portion of the requirements to be performed in a short time portion called iteration. Each iteration includes design, development and testing. At the end of each of these iterations, the partial but usable product is shown to the customer. The latter can then realize very early on the work done, the alignment on the need. The end user can project themselves into the use of the product and give valuable feedback for future iterations.

We have two to make this project, we had better communication and tools to better organize and share better. The Agile Scrum and GitHub methodology, which allowed us to make better progress in our project.



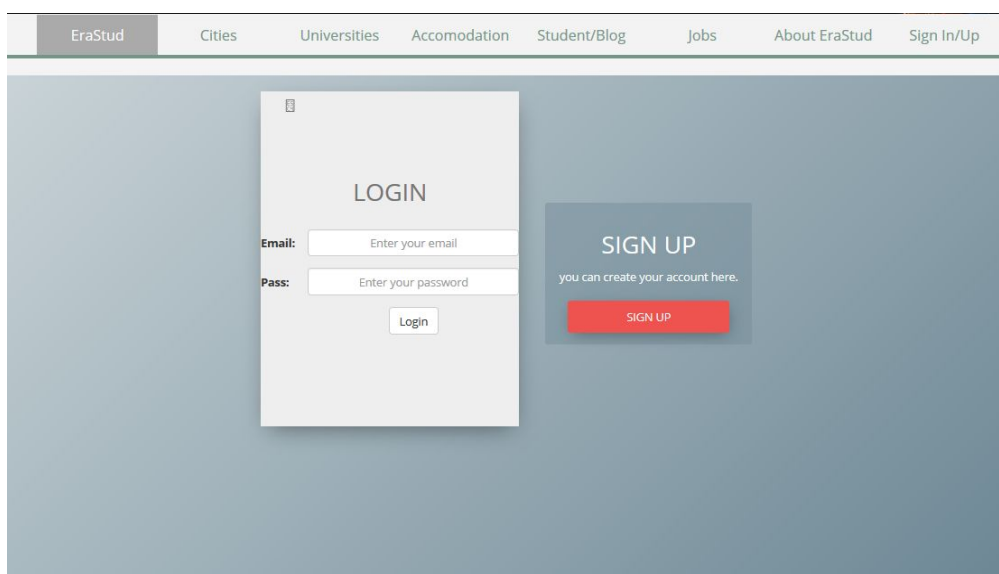
Website functionalities

When a user arrives on our site, he can then see this web page. There are several tabs that allow to interact with the user. We will detail them later.



Sign In/Up

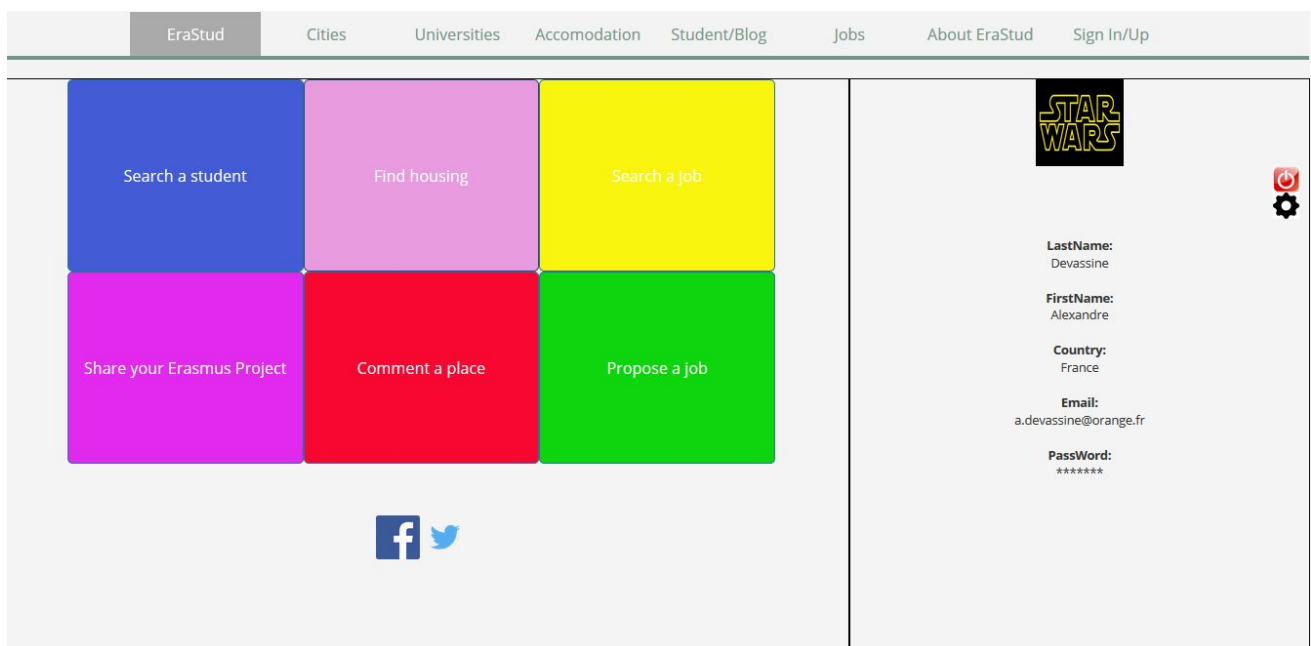
The user can on this tab create an account or connect. He must then enter fields such as his email address, his name, first name and his password. The database is made so that a user only has one account by email address and his / her password is at least 4 characters.















Exemple of functionality

Once the user is connected, he can then see two distinct parts: The right part concerns his personal information with his profile picture which it can also change. The left-hand part is a table with all the features that can meet the user's needs (to look for another student on the site, accommodation, work, to share his / her Erasmus experience and to comment on a place).

Here are some images of the user interface:



Home page for a logged-in user.

EraStud	Cities	Universities	Accommodation	Student/Blog	Jobs	About EraStud	Sign In/Up								
<p>You can see all the student who have a account in this website.</p> <table border="1"> <tr> <td></td> <td>Devassine Alexandre France a.devassine@orange.fr</td> </tr> <tr> <td></td> <td>Gerard Cyril France g.gerard@test.test</td> </tr> <tr> <td></td> <td>test test test test@test.test</td> </tr> <tr> <td></td> <td>test test test retest@test.test</td> </tr> </table>					Devassine Alexandre France a.devassine@orange.fr		Gerard Cyril France g.gerard@test.test		test test test test@test.test		test test test retest@test.test	<p>You can search some student here by their FirstName</p> <div> <input type="text" value="Enter a Search"/> <input type="button" value="Submit"/> </div>			
	Devassine Alexandre France a.devassine@orange.fr														
	Gerard Cyril France g.gerard@test.test														
	test test test test@test.test														
	test test test retest@test.test														

Search page of another student in the database that is registered on the website. One can then obtain his personal information like his first name and name, email and his place where he carries out his Erasmus project. It will also be noted that the search tab for a job is on the same principle of web page but with other search criteria.


EraStud	Cities	Universities	Accommodation	Student/Blog	Jobs	About EraStud	Sign In/Up
<p>Find your City</p>		<p>You can Comment a place here.</p>					
<p>City Ranking</p>							
Email:	<input type="text" value="Enter your email"/>						
Comment:	<input type="text" value="Enter your comment."/>						
Rating :	<input type="text" value="0"/>						
place :	<input type="text" value="where ?"/>						
<input type="button" value="Comment"/>							

This page allows you to rate and comment on cities according to their experience. The user can mark a place by giving it a score between 0 and 5, he sees his comment displayed in the city ranking tab.

EraStud
Cities
Universities
Accomodation
Student/Blog
Jobs
About EraStud
Sign In/Up

France
lille
paris
Germany
cologne
Greece
athens
Italy
florence
Lithuania
vilnius

amsterdam



Amsterdam is the capital and most populous municipality of the Kingdom of the Netherlands. Its status as the capital is mandated by the Constitution of the Netherlands, although it is not the seat of the government, which is The Hague. Amsterdam has a population of 851,373 within the city proper, 1,351,587 in the urban area, and 2,410,960 in the Amsterdam metropolitan area. The city is located in the province of North Holland in the west of the country. The metropolitan area comprises much of the northern part of the Randstad, one of the larger conurbations in Europe, with a population of approximately 7 million.

More information about amsterdam
The opinions of our users

Page on the site allowing to search a city as well with the name of the city but also of the country to which it belongs. Once the user clicks on the name of the city in the table on the left, all information about it appears on the right side with 2 buttons, the first allowing to see more information about the country and the second to Consult our users' comments on the Country selection.

Conclusion

To conclude, this experience abroad was really rewarding for both of us, in the professional way also in the personal way.

In the First Place, programming, documentation in English during the project were very important for us. It also made us discover new technologies. And it enabled us to work independently, we learned a lot from ourselves such that all the configuration and working environment.

This internship we did in a country where we did not know much, made us discover another culture together with as really nice people