



НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ  
УНИВЕРСИТЕТ

**National Research University Higher School of Economics  
Faculty of Computer Science  
HSE and University of London Double Degree Programme in Data Science  
and Business Analytics  
Programming Project  
Development of a virtual quest-game around Durasov's house**

Completed by a Student in Year 2022,  
group БПАД204

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Supervisor:

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basic department of SAS at Faculty of Computer Science

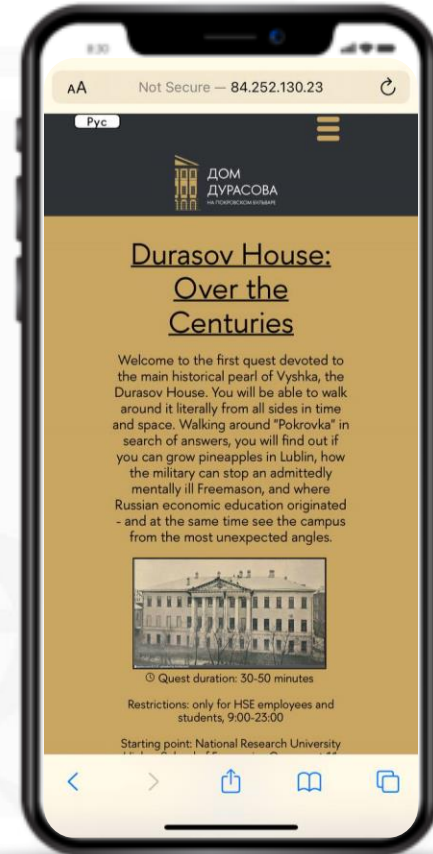
Titova Natalia Nikolaevna

The goal of the work is to create a platform (web-service) to conduct a virtual quest around the Durasov House, which is part of the campus buildings on Pokrovsky Boulevard

The development is divided into two parts:

- Client part (done by me)
- Server part (done by Alex)

the site can be found at <http://84.252.130.23/>



**HTML** - standardized document markup language for viewing web pages in a browser

**CSS** - a formal language for describing the appearance of a document written using the markup language

**Web service** - identifiable by a unique web address, a software system with standardized interfaces.

**To develop** - think of an algorithm, write code, compile, test, debug errors

**Front-end development** - the creation of the client part of the site.

**Back-end development** is the creation of the server part of the site.

**UX-analyst (UX Analyst)** examines the behavior of users of a website, desktop or mobile application, a digital service.



# PROJECT'S OBJECTIVES

- To study existing methods of web-services development
- Perform a competitor analysis
- Develop a scheme of interface elements arrangement
- Learn HTML and CSS
- Run a platform combining backend and frontend on a server provided by the Higher School of Economics (done by Alex)
- Test on several groups: students, teachers, employees
- Correct errors, take into account the comments of the testing group
- user behavior analysis

# PROJECT'S SIGNIFICANCE/ACTUALITY

The project is being developed by order of the Vice Chancellor of the National Research University Higher School of Economics and [durasov.hse.ru](http://durasov.hse.ru)

Our quest is an educational platform with a focus on educating students, employees, and anyone else who wants to

People need to learn more about the building they work and study in, as well as preserve that heritage. And it's all provided in game form right on the phone

**The server is deployed on the Yandex cloud**



# ANALYSIS OF EXISTING DECISIONS

The frontend is developed in the so-called document markup language, aka HTML

To style pages CSS is used - the language for describing the appearance of the document

In addition, the JavaScript language was used to implement the photo zoom animation

**HTML**



**CSS**



**JS**

# ANALYSIS OF ANALOGUES

The quest uses text, photos and video			
The quest is educational			
GPS			
Hints			
The quest is custom			

# FUNCTIONAL STANDARDS AND ADDITIONAL STANDARDS

- The site should provide the ability to take quests.
- The site should provide the ability to add quests
- Account registration must be implemented
- Pages must be adapted for smartphones
- English support must be implemented
- Points system should be implemented, where points are taken off for using mistakes, and points are added for correct answers
- The quests directory must be implemented
- There should be a directory of gifts that can be obtained for points should be possible to leave a request for a gift

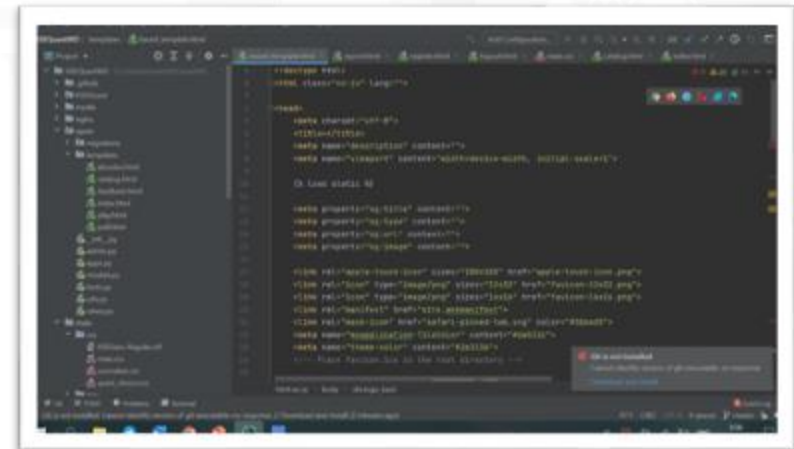


The project was developed with the Clion environment from JetBrains, which implements the following convenient functionality:

- File system
- Built-in web page compiler
- Error indication
- Easy switching between files



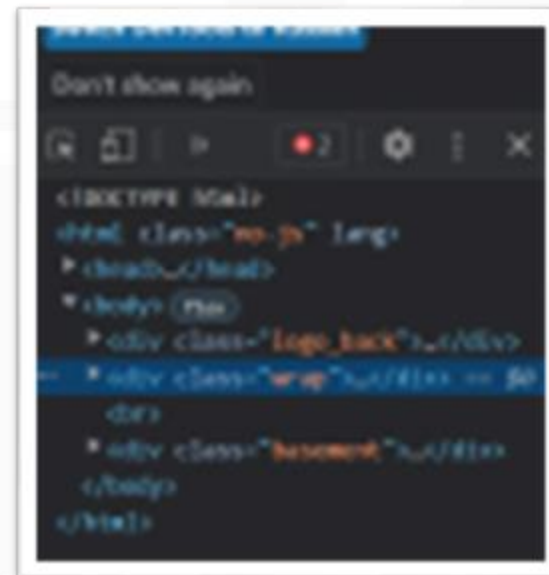
What the Clion interface looks like:



# DESCRIPTION OF THE CHOSEN METHODS

The entire interface is divided into several main elements:

- Header
- The torso
- Basement



```
Don't show again  
[Search] [Home] [Back] [Forward] [Refresh] [Close]  
<DOCTYPE html>  
<html class="no_js" lang="ru">  
  <head>...</head>  
  <body>...</body>  
  <div class="top">...</div>  
  <div class="top_back">...</div>  
  <div class="main">...</div>  
  <div class="basement">...</div>  
</html>
```

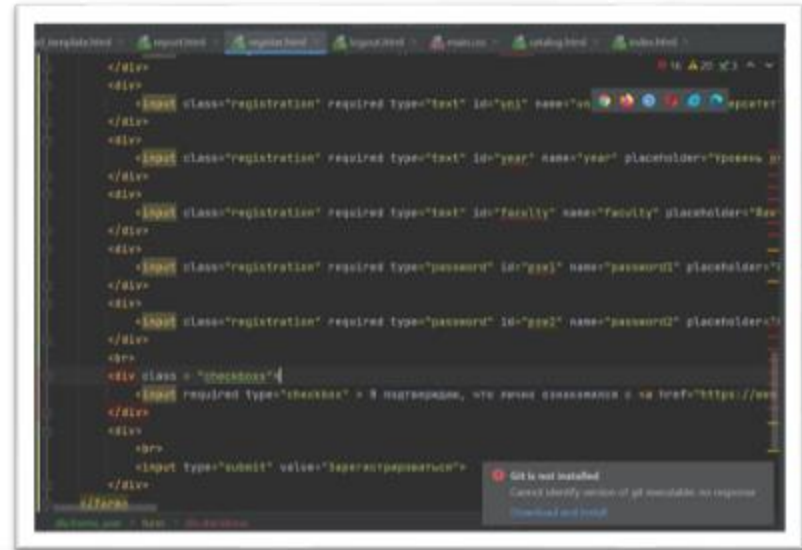
Each page is a separate html-file, except for the quest itself: it is one page whose content is updated according to the user's actions

In addition, the header and footer, the recurring elements are written on only one page

# PROJECT'S REALISATION

The HTML code consists of tags,  
example:

```
<html>
  <head>
    ...
  </head>
  <body>
    ...
  </body>
</html>
```



Among the most important is `<div>` - it creates a block in which you can place text, a picture, a form, etc.

In order to create a mobile-friendly version it was necessary to perform adaptive cross-browser layout, specify all the parameters in percentages and make sure that the new elements would not interfere with the display of old ones

# PROJECT'S REALISATION

The body of the pages with a catalog of quests, gift catalog and "about us" consists of blocks, the code for which is written so that when you change the size of the page blocks start to move down, so that it was easier to read

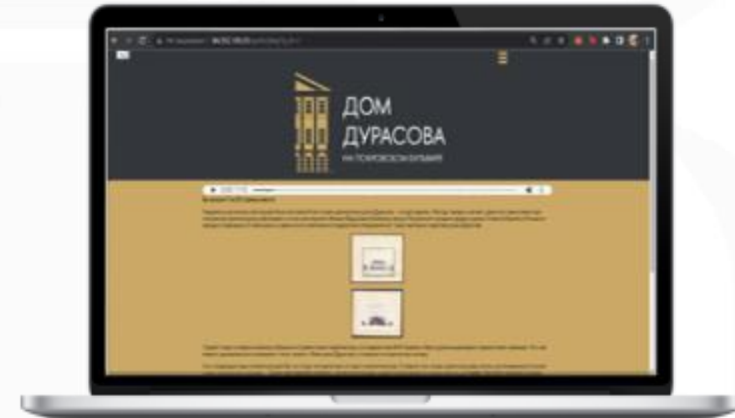
```
based_template.html | report.html | register.html | logout.html | main.css
160
161
162 .block1 {
163     float: left; /*Задаем обтекание*/
164     /* line-height: 120px;*//*Высота строки + верт. центрирования текста*/
165     color: black;
166     width:200px;
167     margin-top:20px;
168     margin-bottom:10px;
169     margin-left: 5%;
170     margin-right: auto;
171     text-align: center; /*Центрируем текст по горизонтали*/
172 }
173
174 .block2 {
```

The script was used to enlarge the picture in the quest



# MAIN RESULTS OF THE PROJECT

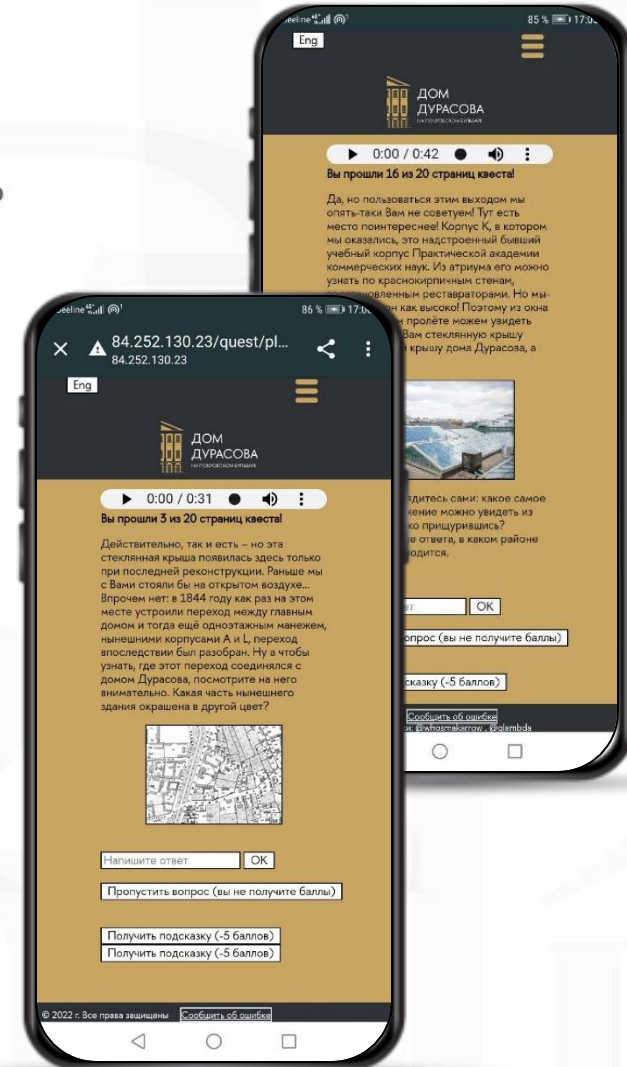
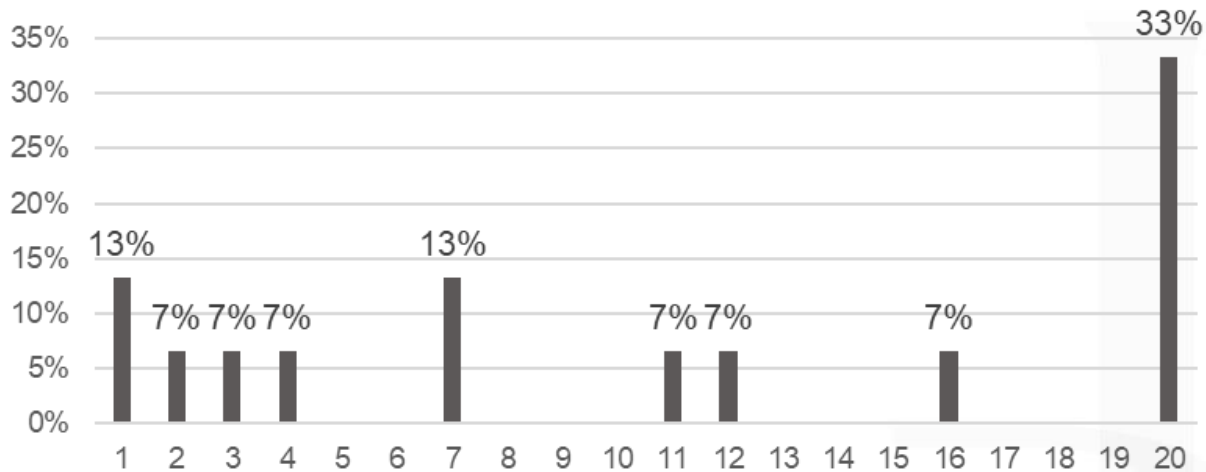
- The platform is ready and functioning properly both on laptop and smartphone
- Tested on 18 real users
- Received positive feedback from the
- Collected feedback on the quest



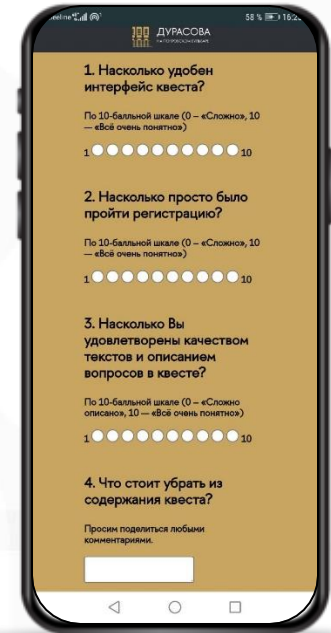
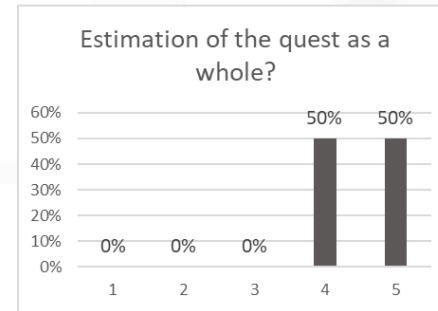
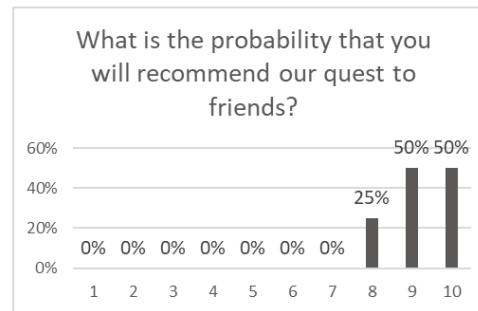
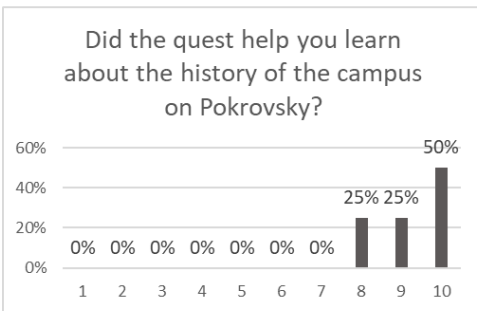
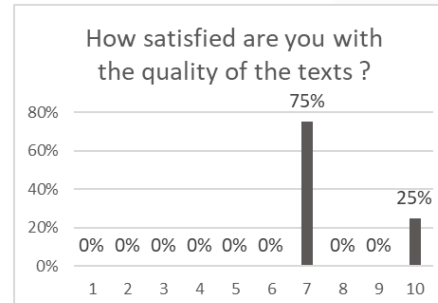
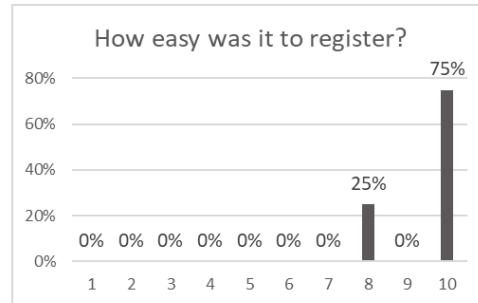
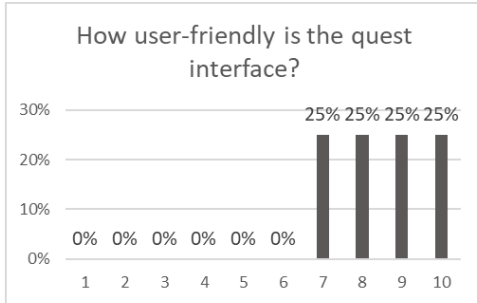
# MAIN RESULTS OF THE PROJECT

Tested on 18 real users

Number of completed questions



## Tested on 18 real users



## what\_to\_delete

- вопрос про северную осетию не требовал, на самом деле никаких перемещений. Однако квест просил. Более того, этот вопрос находился между двумя вопросами, место которых было с разницей в один этаж, поэтому я просто загуглил цвет флага;
- убрать вопрос про 3й этаж корпуса N, так как он для многих очевиден и не надо куда идти;
- Вопрос про эркеп

## what\_to\_add

- больше вопросов на подумать, как, например, вопрос прямоугольниками и квадратами
- больше корпусов) возможно разрешить заходить в корпус А и тоже пройти квест именно по дому Дурасова + выход на улицу
- Задания с выходом на улицу, проход в корпус А

Over time, there will be new quests that require the addition of geo-tracking systems



At the moment there are plans to merge our platform and the portal [durasov.hse.ru](http://durasov.hse.ru)



As the number of users increases, it will be possible to do a more thorough analysis







# PROJECT/PROGRAMM TEST

Go to <http://84.252.130.23/>

# LIST OF REFERENCES

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# Thank you for attention!

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