

Developing a file storage system

Course number: CSD2550

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Introduction

Project's task it to develop file drop-box system, that can be accessed anywhere, that can store uploaded files, and have full control over stored files. Development process need to be documented and described. Whole task combine knowledge and abilities from HTML, PHP, JavaScript and MySQL languages. As a starting reference we were given Code Academy courses, these gave enough knowledge to start working on concept and implementing first prototype. Next reference given later was w3school with a bit more explanation on every topic, even more advanced. Result of the work should be working prototype and report of work done and possible extensions described in detailed manner.

Related work

Nowadays there are a lot of similar running file storing services. For this project given example was Dropbox, which is actually really advanced. It has huge capability. You can upload any type of files. You can use any type of device and you even have offline access to your files. What is more you are able to share your files with other users. You can share files also with people who do not have account, just use their email address. File size you can upload is practically unlimited. It can automatically synchronise to store photos from your devices safely. You can work together with other people on shared files without need to send it back and forth. Even if you lose your device it is enough to log into your account to get your files back.

Other few possible are Amazon Cloud Drive, Apple iCloud, Box(Personal), Bitcasa, Cubby, Google Drive and Microsoft OneDrive. These are just few of the most known examples, but actually there are plenty of them all over the internet.

Requirements

Functional requirements for prototype are just HTML page with possibility to log in, log out and possibility to move through pages using hyperlinks or buttons. There should be also function in JavaScript that checks if password and email are in correct form.

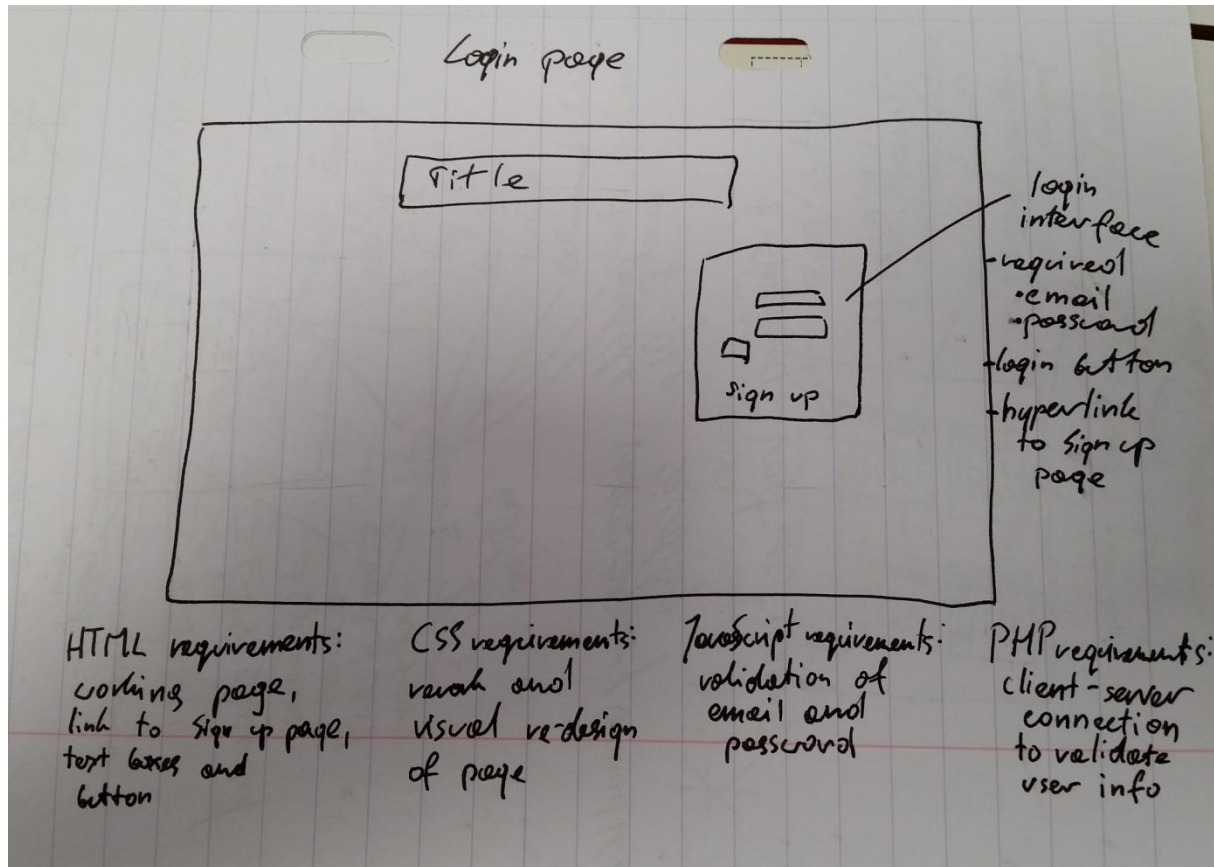
Functional requirements for full project would be existing pages written in HTML, links between them, JavaScript to validate password and email. There should be also server for service posted online, functions to control file storing, like uploading, downloading and deleting, also database to store files and user information. Other feature would be possibility to remind password.

Qualitative requirements for our prototype I would say are minimal. In this case it is just HTML page with CSS rework and JavaScript code for validation. Speed is irrelevant, the same about security, also you don't need space for file storing.

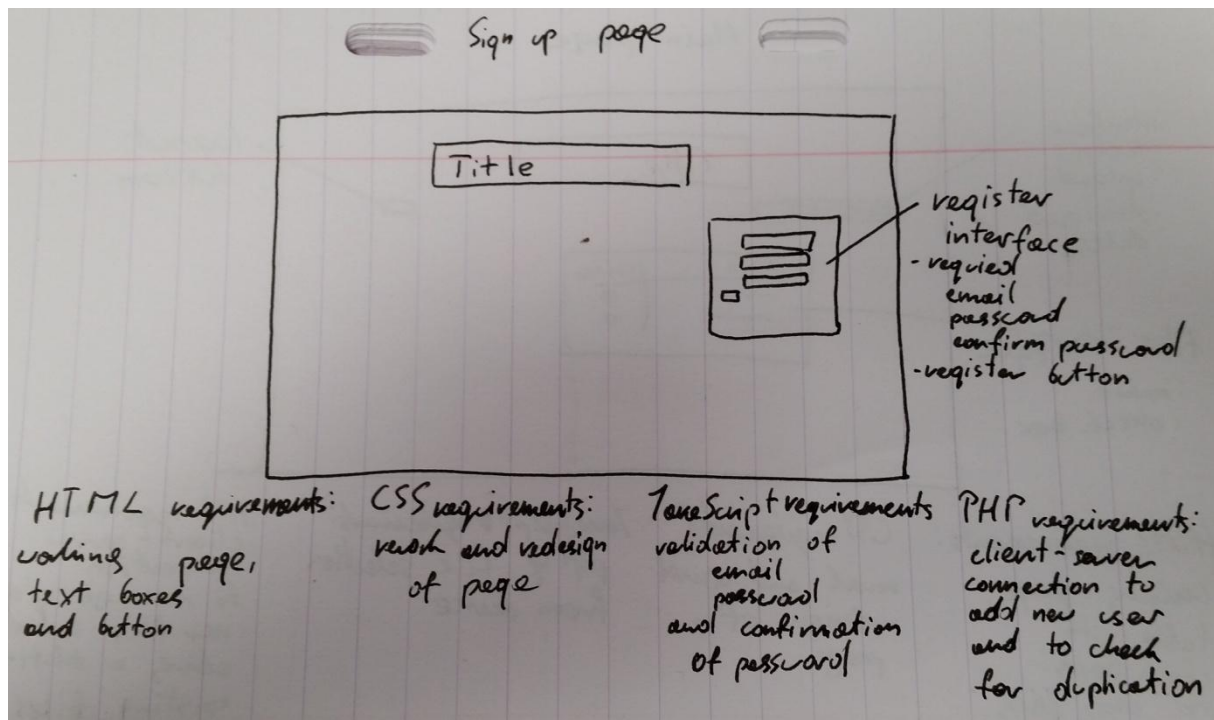
Qualitative requirements for full website would be much higher. It would be also to ensure about security, space for files, connection stability and speed and if our page don't break any copyright laws.

Design

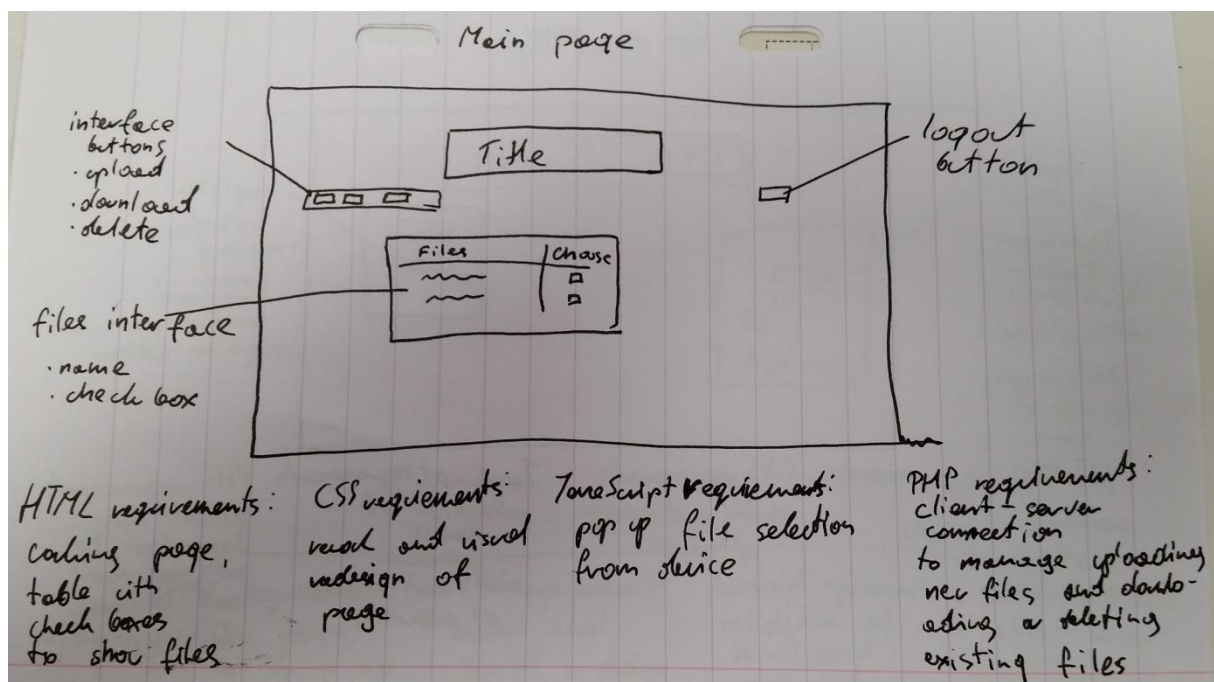
My design is created to be as simple as possible. Even people who do not use computer on daily basis would be able to use something that simple. I haven't put any extra features in my design or in further plans, because some users prefer simplicity over advanced features that they cannot understand.



This is sketch of login page that I designed. This is the page you get on after typing page address in browser. Very simple, with everything possibly visible and clear how to use. Just email and password textboxes with submit button. Email in this case is used as our login, nickname, etc. I decided, that if I am not using any kind of messaging or community feature I don't need to overfill database with useless details. Also it is more convenient for users like me that have plenty accounts all over the internet with different logins and passwords combinations.



This is sketch of my sign up page. You get there through hyper link in login page. As in login page I kept here simplicity. The less information is given the better it is in my opinion. I, and many other users, dislike pages that require a lot of information during registration, because why would page administrator need my real name or maiden name of my mother. I require email and password. I also ask user to confirm password, to get sure that he didn't make any typing mistake. Email is there only, because in future I would like to add possibility to restore forgotten password. If I hadn't thought about that I would just ask for login or nickname.



This is sketch of main page after login. You can get there after successful login, or straight from registration page. Simplicity is kept here as well. Tool bar is kept above file space, with buttons to

upload, download selected files and delete selected files. When you press upload, then comes popup window to select files from your device. On the right side of page in standard page there is logout button, that sends user to login page. On the middle there is table of uploaded files, that you can chose, by ticking the checkbox on the right, to download your current device, or delete from database.

Implementation

I started implementation by creating plain white page, at that phase I was complete beginner in HTML and page related things.

Step by step I created three basic pages: login, registration and main page. I created basic skeleton for each of them. I created links between pages, textboxes for email, password and confirmation of password on registration page.

I wrote code to build table for files on main page. I added check boxes in that table, to make possibility to select every each of files.

On this time I was told that I should put textboxes inside form. I also noticed that my password is visible. I repaired it at once, just made form on top of my textboxes and changed type of my password textbox from text to password. I created buttons for future file managing in main page and replaced links for logging in and logging out with buttons.

Next I begin adding CSS for my page. At beginning I added background images and tried to scale page to look like on designs. After that I added Bootstrap to my CSS. With this I managed to have everything look like I planned. On both registration and login page I moved form with text boxes to the right of page to give it some modern look. On main page I also centred table with files and set logout button on the very right of page on its standard position. I set toolbar for managing file storing in one row, to make it visible close to table.

After managing everything with Bootstrap I started to think about JavaScript. I added validation of password and email form to login and registration page. This simply check, if data given is in correct format, that means if password is at least five characters long and if email have from like

text@text.text

My script takes information in both text boxes, three in registration page, and compares them with form, if and only if it passes both tests, three for registration, it submits information in form and goes to main page.

If I have planned on making not only basic page features, after creating JavaScript, I would add server side with working PHP management.

But in case of just working prototype, I focused on just creation of working page without any errors and mistakes. I created my code with thinking about simplicity and efficiency. My JavaScript as efficient and short as possible. My HTML is short and I eliminated everything unused and unnecessary.

Testing

First phase of testing was just to see if it can be open using browser. Basic white page with black text without any 'treatment'.

Second phase was putting pages altogether, with basic linking between them. I also added checkboxes for files and textboxes for passwords and emails. I tested it and actually I was pretty unhappy, because password was visible, but after short research I changed its type to password instead text.

Third phase of testing was after adding CSS functions. I checked if everything is on right place, everything had right colour, font, background etc.

Next phase was to test written JavaScript for email and password validation. In login page I had to test if email and password is in correct format :

```
var rex = /^[a-zA-Z0-9._-]+@[a-zA-Z0-9.-]+\.[a-zA-Z0-9.-]{2,4}$/;  
var rey = /^[a-zA-Z0-9]{5,}$/;
```

In this example variable rex is format to check format of email and rey to check format of password, but before I got to that format it took me some time. Basically I checked what happens when I put too short password, or email, too long email, improper signs inside email or password or when I put email in improper form, that means without @ sign, or a lot of other combinations.

Fifth phase was to check site altogether before starting next step. I checked CSS, links, submitting forms, JavaScript codes and it's work altogether.

Next I would checked if my server is working on. I would like to know how does exactly my page look from server side. Try all the possible folders and files. I would also check if session starts when I log in and if it closes when I log out. This is especially important for users using the same computer.

Next would be testing of PHP side, by uploading files, downloading them, deleting. I would also check if everything work properly when I try upload file with the same name as already existing file in database. I would try uploading, downloading and deleting without any files selected, also doing it with few files selected. I would try how much files I can store, or how big capacity has my server.

Journal

Week 1

On first week we got to know our teaching team. We also said our expectations regarding this course. They explained to us how our project will look like. We were given starting point to start out journey with web programming, it was CodeAcademy. This was actually first time that I have encountered this page. For second week we were given homework, to create basic sketches with description of our future web page.

After classes I started working on CodeAcademy with HTML. This was my first meeting with this language and it was completely different than I thought. I was used to working with programming languages like C++, so this one was a little shock to me. I spend hours to get basic knowledge of language, where everything is static and syntax is really different than in other languages. I also spend long time thinking about features that my website needs. I come up with just basic functions, because of two reasons, I am beginner in web creation, so I will not be able create something like top

programmers from top companies and I can aim my work to be useful for simple users, who don't need advanced features.

Week 2

On second week we had to come with design sketches of our project. My design containing basic features, but with good explanation of them and good explanation why only these and nothing more was graded for five percent and I was really happy with that. On my design was only login page, register page, and main page after successful login. I explained functions and restrictions of logging, described client-server connection, what can be evaluated by site and what by server. We were given next homework, this was to go on with CodeAcademy courses. We also had to convert our designs to HTML pages.

I have spend few hours fighting with this courses, so many repetitions of the same things. So long tasks, with pointless introductions. I really didn't like it, but I did it to have everything sorted. I quite liked process of creating my own page from design, after like 3 hours I had my HTML, as I thought back then, done.

Week 3

On third week we were given next task with CodeAcademy, this time it was CSS introduction. We had to add CSS to our pages. It took me next few hours to work on my page. It is not easy to create something, actually part of being creative is difficult, as I am not that kind of person. We were told to work on this as it will be observed on fifth week.

Week 4

On this week, we were given tips to add JavaScript to our code and that it will be marked for five percent to total grade. We were told that we can find everything we need for this assignment on w3schools. This task was really hard to achieve, mostly because it is yet next language. It is similar to Java, that is why I learned syntax's basics easily, but still didn't know how to use it in HTML code.

I spend like five hours learning basics and next five to get to know how to implement JavaScript correctly inside my webpage. I also spend some time on getting to know how should I define proper form for my validation check. After getting it somewhere on internet, I cannot now tell exactly where, I added it and checked. It worked! I was really happy about that and after I was looking how to use formal expressions in JavaScript and how to define them properly by myself.

Week 5

This week I gave to my teacher page with CSS. Back that time I was still developing code for login validation, so I just left it for next week. Teacher was pleased with my work and I easily scored next five percent. We were told to work on CodeAcademy with yet another course and that this course will be marked. This week we were also told about special assignment to think about.

It was to create rolling in and rolling out text. It had to roll out when title is pressed, and roll in when text, or title is pressed again. So basically for next week I had two assignments to work on till next week.

I have spend quite a long time with this special assignment. I have created special HTML page just to show this piece of JavaScript. I just created onClick function with basically 2 if statements.

To be honest I left CodaAcademy course and done it just before next week classes.

Week 6

On this week I presented my course at CodeAcademy, my extra task page and my project pages done. I had everything done correctly, but I have written my validation script in unusual way. I scored all twenty percent possible to get by work on classes and by engagement.

Week 7, 8, 9 and 10

For this four weeks I paid the least possible attention. There were plenty of other assignments, tests and course works on different courses, so I just focused on them and came back to this project before its deadline.

If I had planned to add PHP and server to my page, to have full service working, I would spend one to two weeks to research even next language. Next I would set server, local for testing, or online to make it work for other people. On week nine we got information how to get local server on our devices and bit of code to remake in PHP to control simple data storing. With this I would be able to create in next two weeks full working service. Week ninth and tenth I would spend on implementation and testing of online and database features.

Week 11

On this week what is left is just report and journal remake. This week there was loud reminder everywhere, that we have to submit our work up to Friday, so this is what I am doing.

Conclusion and future work

All in all I wanted to say, that this work was really demanding. We were obliged to learn new language, HTML, from beginning and later to learn CSS, JavaScript and later possibly PHP and MySQL. This is quite a lot for that short time. I think I have done all what was required. This was really irritating project for me, because unlike some people I had to learn everything from scratch. Beginning was difficult and I spend a lot more time than I would like to on this work, but I like the result I got.

I designed fully working site, implemented it without server side and tested in all possible way. In my page I focused on simplicity and efficiency. My page, if put online, would be for simple users, possibly older people working in offices or schools. The only things I require to create new account is email address and password. I wouldn't require even email, just login or nickname, but in future I planned on adding possibility to send password reminder.

For further updates, there also are: server for page, PHP to manage file storing, as said earlier, password reminder, and database as storage.

As possible additions there also are: community service, messaging possibility, possibility to share files with other users, taking care of capacity of server and activation of registration.

I hope everything is fine either with report, journal and webpage. My English is not perfect, so please mind that. Thank you for reading.

References

Dropbox. 2015. *Dropbox*. [ONLINE] Available at: <https://www.dropbox.com/>. [Accessed 18 December 2015].

Storage Devices - Reviews and Price Comparisons from PC Magazine: The Best Cloud Storage Solutions. 2015. *Storage Devices - Reviews and Price Comparisons from PC Magazine: The Best Cloud Storage Solutions*. [ONLINE] Available at: <http://uk.pcmag.com/storage-devices-reviews/3682/feature/the-best-cloud-storage-solutions>. [Accessed 18 December 2015].

W3Schools Online Web Tutorials. 2015. *W3Schools Online Web Tutorials*. [ONLINE] Available at: <http://www.w3schools.com/>. [Accessed 18 December 2015].

Learn to code | Codecademy. 2015. *Learn to code | Codecademy*. [ONLINE] Available at: <https://www.codecademy.com/>. [Accessed 18 December 2015].

Bootstrap · The world's most popular mobile-first and responsive front-end framework. . 2015. *Bootstrap · The world's most popular mobile-first and responsive front-end framework*. . [ONLINE] Available at: <http://getbootstrap.com/>. [Accessed 18 December 2015].

CSD2550 - Web Applications and Databases. 2015. *CSD2550 - Web Applications and Databases*. [ONLINE] Available at: <http://phongvis.github.io/slides/csd2550/#/>. [Accessed 18 December 2015].