



Diploma in Software Development

DSE 710 Web Software Development

Assessment: Project Report

Total marks: 100

Course Weighting: 100%

Due Date: Monday, 20th March at 8p.m., 2017

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EXECUTIVE SUMMARY

These days, people pay a lot attention on their interior design of the houses. It's a new trend to attract specialists to create a proper design for the house. One of these professionals is our designer Katya Perrott who offers her service to people who are interested in Interior Design. Our website presents the samples of her art works including oil painting, drawings, photos and pictures of interior design. This website assists her potential clients to know Katya's opinion about art, design, style of work. They have a chance to see the patterns of created design works and contact her for the further information or discussion of the project.

Our website intends to help Katya to make the world aware with her art and abilities to create the unique Interior Design that assists to demonstrate not only a professionalism of the designer but also clients' character, their special preferences and cosy atmosphere in the house.

Introduction

Background

As a developer of this website, firstly, I was interested in the uniqueness of this project. It was a challenge to create a site for the Interior Designer who has not had one before.

The other reason why I preferred to create this application was that it had a few goals that were challenging to achieve. For instance, the main goal was to demonstrate the talent and good taste of Katya.

Furthermore, the other purpose was to attract potential clients who are looking for the changes of their houses' style. People might appraise Katya's art works and decide whether it's something what they would like to have at their place. Otherwise, customers can also contact the designer to talk about their preferences of interior design and her ability to make them come true.

The last aim was to show that Katya's offered her clients not only Interior design but also a housewarming atmosphere where it's comfortable to live and host guests.

Scope

This application is an effective combination of various of skills which we have gained during the Web term. It includes a wide range of implementations such as HTML5 and CSS works, PHP and Java Script resources. Different parts of our application consisted of their own special details as long as they contained separated tasks. For example, front page presents its own design and includes of front photo plus the introduction article. The other parts of our application present the samples of the designer's works.

Moreover, we have also implemented the scroll down option and the ability to get the menu at any stage of the users' experience.

The prospect of our application is wide because Katya is young and talented specialist who intends to work on plenty of design projects. Therefore, her website will be consistently topped up with her new art products.

Certainly, the future technical extensions might be implemented as well. For instance, the feedback option could be added further. It would give Katya's clients an opportunity to leave their opinions or wishes on the website.

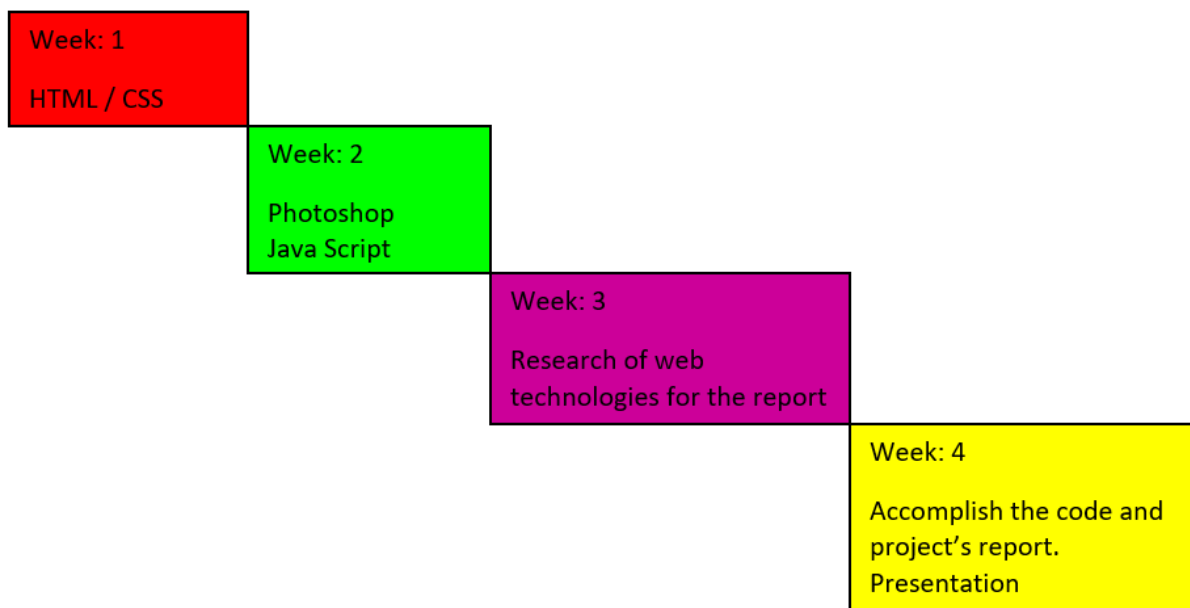
The standards of modern websites are changing frequently. Therefore, our Interior Design application would have to be upgraded in the future as long as the website presenting the designer's art is supposed to be always in trend.

Plus, we aim to find a reliable web host and suitable domain name for our web application.

Project Planning and Execution

Project Plan and Gantt Chart

1. The first week is devoted to HTML5 and CSS introduction. It's time to find out what it is HTML and CSS, how we can implement them into our future web application.
2. The second stage is the period when we explore the photoshop that is necessary to drawn the design of the website. Plus, get the idea how to work with Java Script.
3. The third part is the research time. We make this research to collect useful information for our report. For example, we need to find out what it is web accessibility and different types of navigation.
4. The final week is devoted to the accomplishments of our project and report. Plus it's time to make a power point presentation of this application.



Risk Management

Even though web application is our third project we could not be sure that we had enough technical knowledge to create a responsive website. Extra responsibility is to make a product that our client will use immediately after release.

The next obstacle is the information security that must be provided by the developer. To avoid any chance of losing data we have made a daily habit to save a copy of our project on the separate memory device.

Next risk is to create a web design that wouldn't look attractive for the users. As long as it's an application for the Interior Design it's supposed to be the pattern of good taste and style. For this reason, UI design requires extra attention.

The other risk is to get proper work environment including good Internet connection, reliable computer and suitable working area.

Even though it is not our first project we are still struggling with time limits as long as we work with new programs. There is always a risk to dismiss deadlines.

Risks	Consequences	Likelihood	Risk Level
Confidence in the required skills to create a responsive app	Principal	Likely	High
Information Security	Principal	Medium	High
Not attracted design for the Interior Design website	Minor	Unlikely	Low
Proper work's conditions	Restrained	Medium	Medium
Time management	Principal	Likely	High

Architecture and Design

Content structure

The content structure is one of the first ideas came to our mind when we started working on our website. Related to this question our main target has been to make it logically placed so users won't struggle with the location of different parts.

- 1) The front page presents the web introduction with a greeting word and the photo of our Designer.
- 2) Next page is the samples of the Interior Design that are supposed to make the guests aware with Katya's work.
- 3) After we have placed the Drawings part because they show the artist talent of Katya. Originally it was two separate parts – oil and pencil drawings. However, later we have decided to combine them in one Drawings blog as long as some of the users wouldn't see the difference between oil and pencil pictures.
- 4) The other part is the Mosaic which intends to demonstrate the creativity of the Designer. Plus, there is always a picture of working process.
- 5) After the photo inspirations, have been located as long as according to our navigation report the middle part of the menu doesn't attract as much attention as the end parts. Photos are not the vital fragment of the application but they still demonstrate the Designer's world view.
- 6) Sketch is the next part. It presents the samples of the designer's ability to implement, combine different design tools including the lights, furniture, decoration tools etc.
- 7) The last vital part that is important to highlight is the contacts. Through the contacts the Designer has a chance to get a feedback and connection with her potential clients.

Navigation

Describe what you learned about helping the user to navigate your app.

The design of a website's navigation plays a critical role in success of the project. It affects traffic and search engine rankings, plus, conversions and user-friendliness. Everything important about the website is connected to the navigation, from content to the URLs.

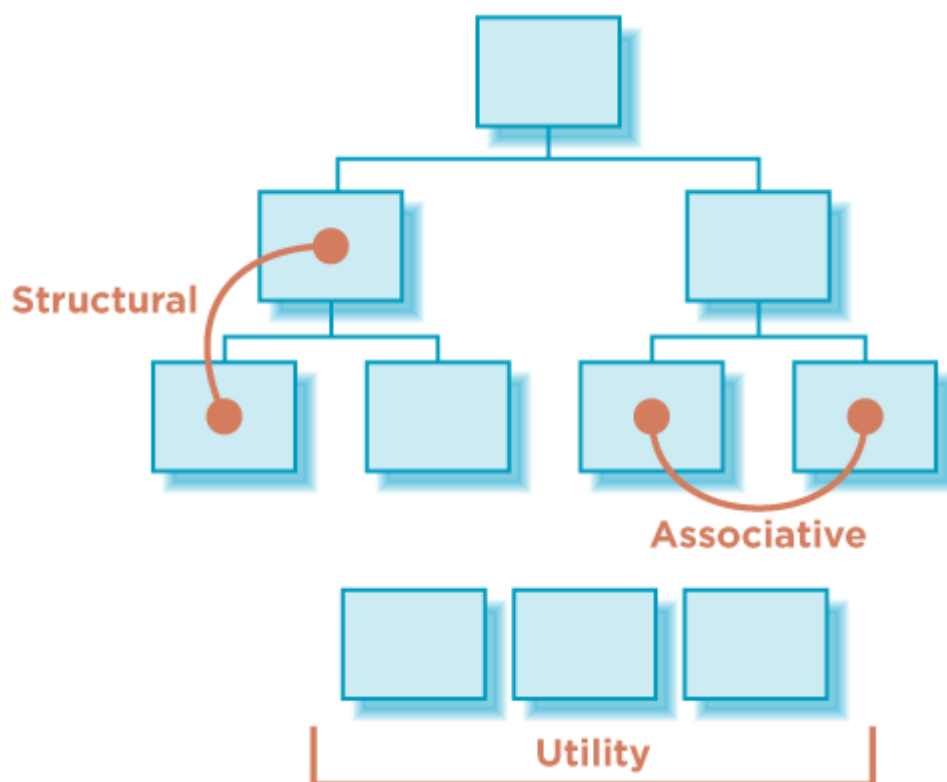
It's vital to think from the user's point of view when we work on navigation which is supposed to be understandable for them. For example, users should easily predict links and reorient themselves on new pages.

There are several aspects to distinguish types of navigation:

- The type of content a mechanism accesses
- Behaviour of the navigational links and transition to the next page
- The tasks and modes of seeking the mechanism supports
- Visual treatment of navigational options
- The position of a navigation on a page (Kalbach, 2003).

TYPES OF NAVIGATION

<i>Structural</i>	<i>Associative</i>	<i>Utility</i>
Connects one page to another based on the hierarchy of the site; on any page it is possible to move to the page above it and pages below it.	Connects pages with similar topics and content, regardless of their location in the site; links tend to cross structural boundaries.	Connects pages and features that help people use the site itself; these may lie outside the main hierarchy of the site, and their only relationship to one another is their function.



(James Kalbach, 2003).

Structural navigation

The structural type presents the structure of the website. It gives a user an opportunity to go up and down to the different parts of the site's hierarchy. It consists of two types – **main** and **local** navigations.

- 1) Usually we can see the examples of **main navigation** on top pages or below the home page. Users can easily predict where the navigation links will lead them with the next click of mouse. Moreover, the main type is useful because:
 - The main navigation provides an overview and answers important questions users may have when first coming to a site, such as "does this site have what I'm looking for?"

- The main navigation aids in orientation. It is comforting to have a persistent navigation mechanism across the site, particularly for large, information-rich sites.
- It allows people to switch topics. Visitors can get to other sections of a site efficiently, or they can reset their navigation path and start over using main navigation options.
- It helps when users get interrupted while navigating and reminds visitors where they are in a site.
- Main navigation gives shape to a site. In many ways, the main navigation defines the boundaries of the site itself. (James Kalbach,2003).

For instance, picture below is the example of the main navigation



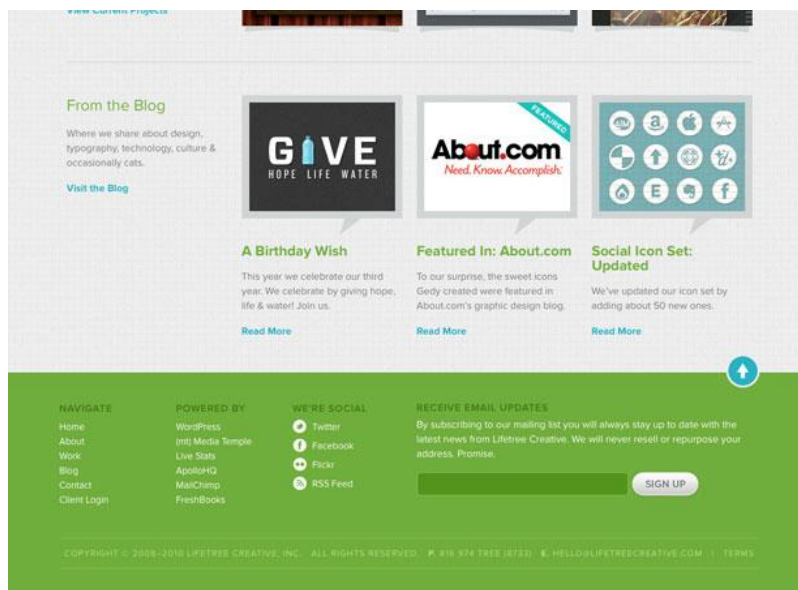
- 2) **Local navigation** gives a pass to the lower levels of the structure and usually it demonstrates the optional part at the same level of hierarchy. It plays a role of extension of the main navigation.

According to Kalbach (2003) there are 3 kinds of arrangements for the local type:

- Inverted L – when the global navigation is located along the page on the top level and local navigation is placed on the left side so it looks like L letter.
- Horizontal – when local navigation as a menu option is located under the horizontal global navigation.
- Embedded vertical – when the vertical menu is presented by two sides – left and right. Plus, between them there is the local navigation.



- 3) **Footer navigation** is always located at the bottom of the webpage and usually it is presented as text links with supplementary information. Sometimes it includes site-map, contacts, copyright data and products' sales history.



Utility navigation

Utility navigation assists users to see the connection among tools and features of the website and might lead to different webpage types or functions. The same as quick links they it's usually presented as text links. Utility navigation is presented by few vital aspects - **Extra-site navigation, Toolboxes, Linked logos, Language and country selectors, Internal page navigation.**

- 1) **Extra-site navigation** presents other related sites or sub-sites. It allows user to switch to related web properties owned by a single provider or completely different site. Usually it's located at the top right of the page.
- 2) **Toolboxes type** presents the functions of the website. Frequently they lead to functional or navigational pages. Though it might be a challenge for the user to reorient here as long as toolbar can lead to the search or contact form etc.
- 3) **Linked logos** lead the entire image itself to the homepage. It assists to demonstrate the branding and save some space. Linked logos are considered as an "undo" way within for the navigation simplicity.
- 4) **Language and country selectors** assist users to switch to the foreign language. Therefore, people can surf the same website in different languages. However, it is possible on sites which support multiple languages. For example, most of the immigrations websites. Country selector assists users to choose their market region.
- 5) **Internal page navigation** might be implemented in the long websites so users can easily switch from one part of the page to another. Internal page navigation scrolls the page up and down and bring the user to the required section. Plus, it gives an overview of the page.

In our Interior Design web application, we have implemented the structural navigation which connects one page to another based on the hierarchy of the site; on any page, it is possible to move to the page above it and pages below it. For instance, users can easily switch from the mosaic page to oil painting, then go to drawings part and all the way around. This type of navigation has been considered as the most suitable for us because it is one of the most common used navigation. Therefore, most of users get used to work with it so it's users friendly for our clients.

Functionality

The quality of our application's functionality is determined by how well the designer's performance is presented for the web guests. Therefore, functionality is a critical part of our project. Usually the functionality is estimated on how quickly we show off we bring our users to the main point – Designer's work. The other vital part of functionality is to evaluate the website from the user's point of view. For instance, on our website we collected all the oil and pencil pictures in one Drawings part because it makes the website users' friendly as long as some users are not aware with the difference between oil and pencil painting.

Our client, Interior Designer, will be an administrator of this website. For this reason, she will have an off-line access to the code of the application. It will give her an opportunity to update and make changes whenever it is necessary. However, other people who visit the website won't be able to work on it if there is no Internet connection.

The next vital point of functionality is to be stick to the main purpose of our website - to present our Interior Designer's work. We shouldn't walk around and lose the focus our users. It is fair to implement an introduction word and front photo that gives a brief idea what the users are about to open here. However, straight after the introduction it is better to return to the main functionality- present our designer's performance.

The last requirement of functionality is the technical side that is supposed to be simple for users to surf. In case of our website it is necessary to make sure that any new picture assists to achieve the key goal of the website.

There are two processes having a place on our website. The first one is the internal process which has a deal with the information coming from the Database when users message the Designer. For example, Internal process also includes such activities as adding the pictures to the gallery, updating the front and background colours. The external process contains only drop down menu and contact options. It allows to keep the user concentrated on the core aim of the application.

Our website presents only the designer's projects and doesn't include a lot of data. Except, the messages of users. Nevertheless, it doesn't require a lot of data. For this reason, we don't have such obstacle as the handling the big data.

Styling

This Website is dedicated with the Interior Design. One of the main requirements of this application was to make it stylish and demonstrate a good taste of the presented designer.

For this reason, first of all, we have talked to the client who declared how she saw her website. Her main idea was to have a website that would not be very colourful on the front page because there will be a lot of bright pictures presented in all other departments.

Secondly, we have explored other web sites such as <https://nz.pinterest.com> to see the samples of web designs. Inspired by the demonstrated examples we have created an exemplary project's design. As soon as the client confirmed this plan we started making the design in Photoshop.

Photoshop is a new program for us to use that's why we could not implement all the wide range of opportunities it offered. Though we have used the main tools to create a suitable design for our Website.

Next stage was to declare all the details properly in case if other developers would use it to create a website. For example, it was vital to write down every colour with its code that might be easily determined in "Pick the colour – Google". Plus, it was also important to wrap every part of our menu content in the different section folders that helps developers to code this application easier.

Originally client requested to make website using only 2 colours – black and white. However, after Katya saw it on the first photoshop example she asked to add more light colours. For this reason, we have implemented the Front page and we have also added the light colour to the menu options.

To sum it up, while we working on the style of our site we found out it was required to get a client's feedback because only that could guarantee the customer's satisfaction with the final product. Certainly, it is also important not to bother the client often that's why the best solution is to prepare a few samples of UI design and offer the client to choose the most suitable. Otherwise, listen to client's request and pick up necessary updates.

However, in our case we created the website not for an ordinary client who didn't have any idea about style but it's a website for the designer. At the first stage our designer already had a strong understanding of what she wanted to have in the website. Therefore, our main goal was to translate her ideas into life. For this reason, our design was provided by the customer and we started making it on Photoshop and later coding the designed photoshop sample.

Accessibility

Web **accessibility** refers to the inclusive practice of removing barriers that prevent interaction with, or access to **websites**, by people with disabilities. When sites are correctly designed, developed and edited, all users have equal access to information and functionality (Wikipedia, the free encyclopaedia, 02/2017).

It is known that when a site is coded with semantically meaningful HTML, with textual equivalents provided for images and with links named meaningfully, this helps blind users using text-to-speech software. Plus, this and other software programs are oriented to transfer the web text to the MP3 speech. For example, text-to-Braille hardware.

However, there are other users with different disabilities who need to be taken into consideration when we create a website. For instance, deafblind people also need to use the Internet. It is a challenge for them to surf online. Today new technologies are invented to assist those users.

Braille Glove is a special device for the deafblind people who might get a chance to start communicating (Fedor Belomoev, 04/2016). In order to hear the interlocutor, it is enough to speak into a microphone - the program recognizes the speaking voice as tangible signals on the basis of the font of Louis Braille. It is enough to move the fingers on the contacts located on the gloves, and the transmitted signals the program immediately synthesized speech and the interlocutor will hear the user's answer. The same principle can be used Braille Glove people deprived of speech, for example, after a stroke.

As for our Interior Design website, its design is not invented for fully blind people as long as it's main orientation is to evaluate the visual images of the Designer, her drawings and creative ideas. Moreover, it might be a challenge for blind people to choose the Interior Design that's why they are not our main users. Deaf people won't have any struggles with this Web as long as we haven't used any audio or video parts that might become an obstacle for deaf people.

The other category of disable users is the people who are colour blind. It's not easy for them to use our Website because it presents colourful pictures and photos. However, if they still look for the proper Interior styles they can easily surf the samples of our Designer's works even though colourful pictures might be confusing for them.

Next type of disabilities is the people with poor sight. In this case our users can zoom up the pictures and texts to the proper size.

The last complicated disability is the dyslexia and learning difficulties of our users. According to the Dyslexia Association of Ireland the web is friendly for these users if it meets some requirements (Dyslexia association of Ireland, 2016). Dyslexia friendly text will have improved readability and better visual impact for all readers, but especially those with dyslexia.

- It is necessary to use minimum of 12 pt to 14 pt font size.
- Avoid light text on a dark background.
- Keep sentences and paragraphs short. Try to break text into short readable units.
- Use at least 1.5 line spaces between lines of text, if possible.
- Keep sentences short and to the point (15-20 words per sentence).
- It helps to imagine the reader is sitting opposite you and you are talking directly to them.
- Give clear instructions, and avoid lengthy explanations.

The content of Interior Design Web is written in plain language and it meets most of the above requirements. For example, we have not used light text on a dark background, all our sentences are short and we haven't used complicated vocabulary there, we haven't implemented lengthy

explanations either. All these facts assist to understand the content easily. Plus, in the code we have used “images alt” that intend to find the file if there are technical issues and it allows read screen programs to read what is the image.

To sum it up, it is necessary to create equal web accessibility for people with different abilities. As we can see our website is not friendly for blind people who can't appreciate the interior drawings. However, other users with dyslexia, colour blind, poor sight and learning difficulties still can surf this website.

Security

Application's security means that software, hardware and procedural methods are safely protected from the external threats. Security intends to lessen the chance of unauthorised harm including the stealing, changing or deleting vital information from the code.

Countermeasures are the process of providing the security to web applications. There are a few types of software countermeasures.

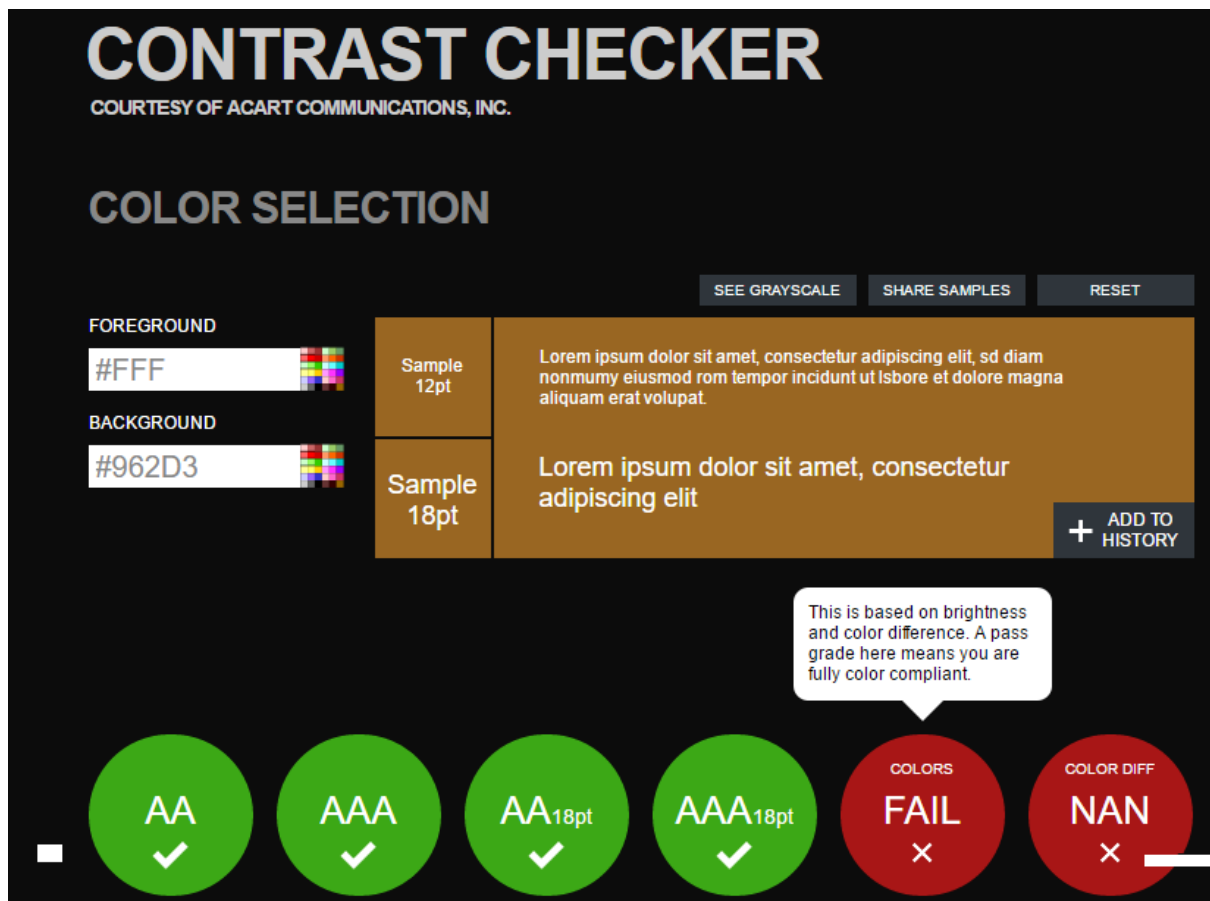
- Application firewall restrictions the execution of files which might be obtained only with special programs.
- Router gives a computer machine (particularly, its IP address) an opportunity to avoid being directly visible online.
- Encryption programs are the anti-virus programs.
- Spyware is the tracking software that is installed without the acknowledgment of the end user, that's why sometimes they are considered as the breaking the rules of users' privacy.
- Authentication programs intend to define if the users are the real person not a robot.

All those innovations aim to protect the users from the threats or steal of private materials. Though it is still a challenge for the developers to provide full security of product as long as new technologies are created on the daily basis. Some of them intend to break the security barriers and, therefore, fresh security programs are made as well.

The other significant aspect of the web security is the reliable Web Host that provides the safety of online operations.

Reflection

Accessibility has become the biggest discovery for us because working on the previous projects we have never thought about users who had different physical limitations. Our Interior Design application has been checked at <http://contrastchecker.com/> that evaluates the web contrasts based on the used colours. After the appraisal, we can find 6 balls showing the parameters if the foreground and background colours are suitable for humans' eyes.



It is known the first stage of accessibility is to define what is it accessibility, get to know how to implement accessibility and make sure that the developer is aware with accessibility's legal obligations. It frequently happens that developer is not fully aware with the specific of accessibilities and it leads to the website that is not suitable for people with disabilities. Furthermore, often developers believe that the creation of the accessibly website requires more time and therefore financial investments. However, it is not fair because an accessible website gives the access to a bigger population of users and by this way will be visited more frequently. It is not wise to exclude 5% of potential users because almost every 4th person has any kind of disabilities that might influence on their ability to work in the Internet.

As we can see from the information above in most cases accessibility requires only adoptions in the design web content. Plus, these kinds of design adoptions are beneficial not only for disabled users but also for the common users. For instance, it's comfortable to work with the clear navigations and illustrations, well-organized content and convenient font for everyone.

[Web Content Accessibility Guidelines \(WCAG\)](#) is the resource of applicable laws and standards that the developer might reference to. It promotes 4 main approaches guiding through the international laws.

- “[Perceivable](#): Available to the senses (vision and hearing primarily) either through the browser or through assistive technologies (e.g. screen readers, screen enlargers, etc.)

- [Operable](#): Users can interact with all controls and interactive elements using either the mouse, keyboard, or an assistive device.
- [Understandable](#): Content is clear and limits confusion and ambiguity.
- [Robust](#): A wide range of technologies (including old and new user agents and assistive technologies) can access the content.” (WebAIM, 2017).

Implementation

Discussion of technologies used

The first stage was to define proper technologies to make our website. First of all, we drowned the UI design of our future website in Photoshop. It has been our first experience with this program. Ultimately, it was not necessary to use as long as the designer and developer of this application is one person and there was no need to drown the design in Photoshop. However, it has become a useful experience for future practices in the industry.

Secondly, I have found out that some developers use the Dreamweaver to write the code there. The advantage of this program is that we can see all the updates immediately and we don't have to go to the browser to open it. Though the Dreamweaver takes a long time to show any changes and later we realized it much quicker to run the code on any of the browsers. That is why we have started using the Notepad++ afterwards.

Thirdly, we have installed and implemented Bootstrap that intends to make a web application suitable for any kinds of devices including desktop screens, tablets and mobile phones' display. (<http://getbootstrap.com>).

After we have implemented XAMPP as APACHE server and MySQL database. It has aimed to assist us to work with our database. Before we managed to start operating MySQL program we were struggling for a while install it. We have rectified it later when we had uninstalled the previous version of MySQL that used when we worked on the Desktop project.

At last, the power presentations that have been demonstrated in the class assisted us to find a proper approach to the Database connection.

Database schema

In our project database is presented by the contact form. This form has become an additional option of our application because it gave us a chance to use a database. Plus, it offers a chance for the Designer to get a feedback from her clients. It might assist to extended networks and get orders if the users would like to invite Katya to provide her service.

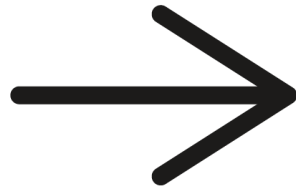
As soon as the user fills the form including the details of his/her name, email address and the message all these details are delivered to the database. After it might be checked by the admin as soon as the database is refreshed.

CONTACT ME

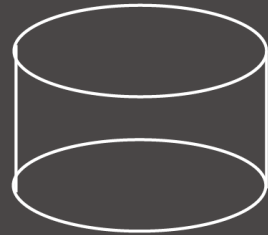
Name _____

Email _____

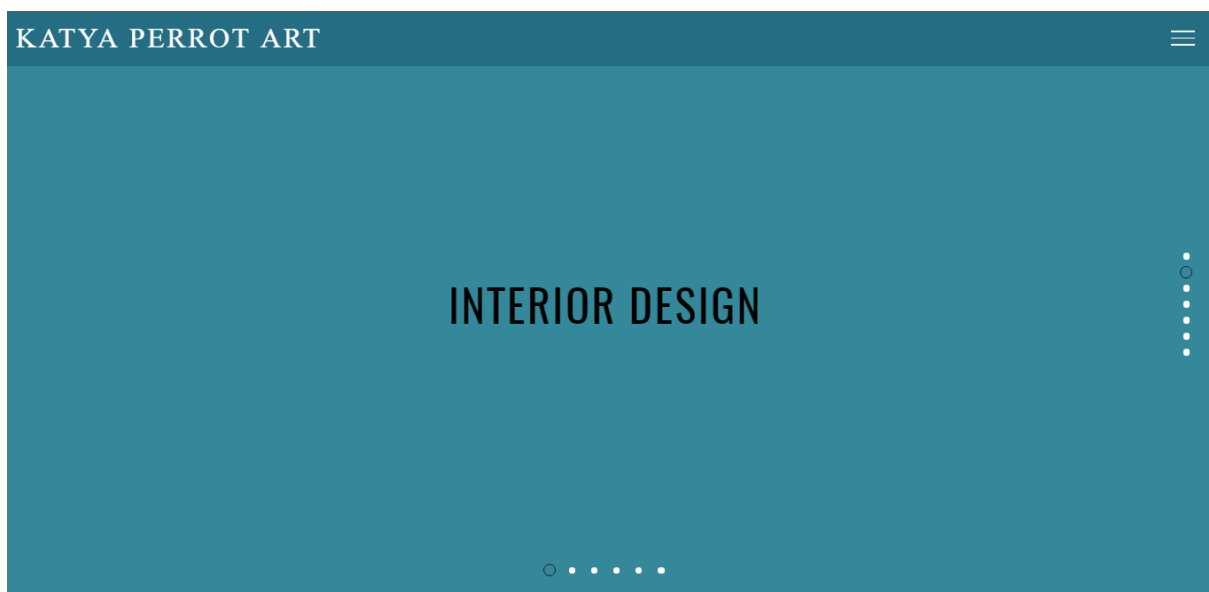
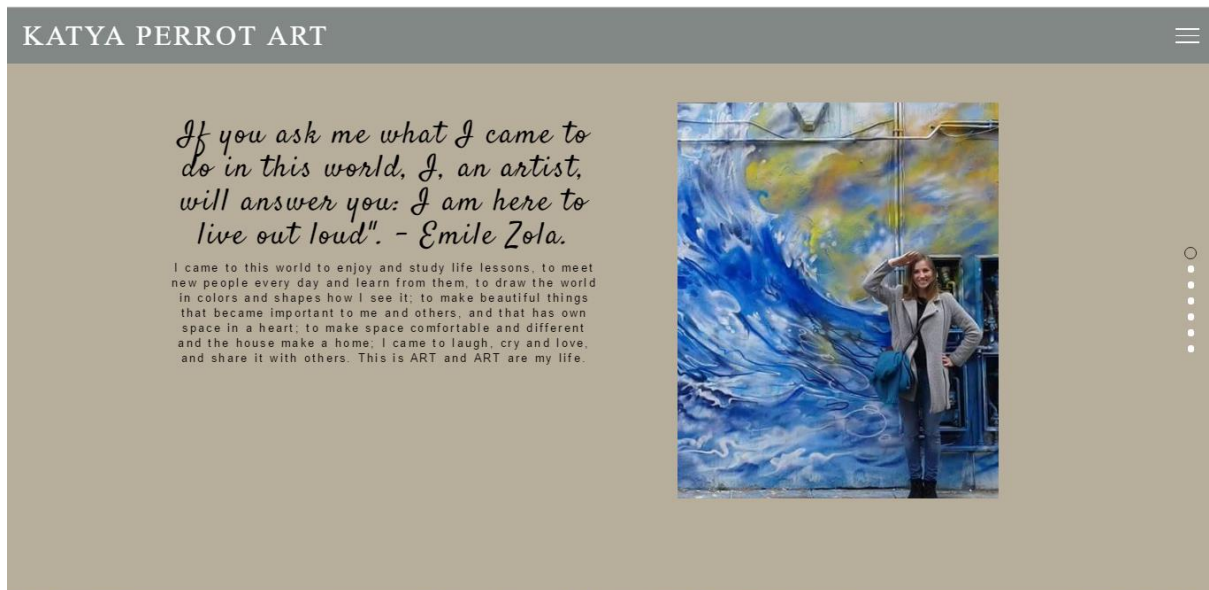
Message _____



DATA BASE



Screen shots



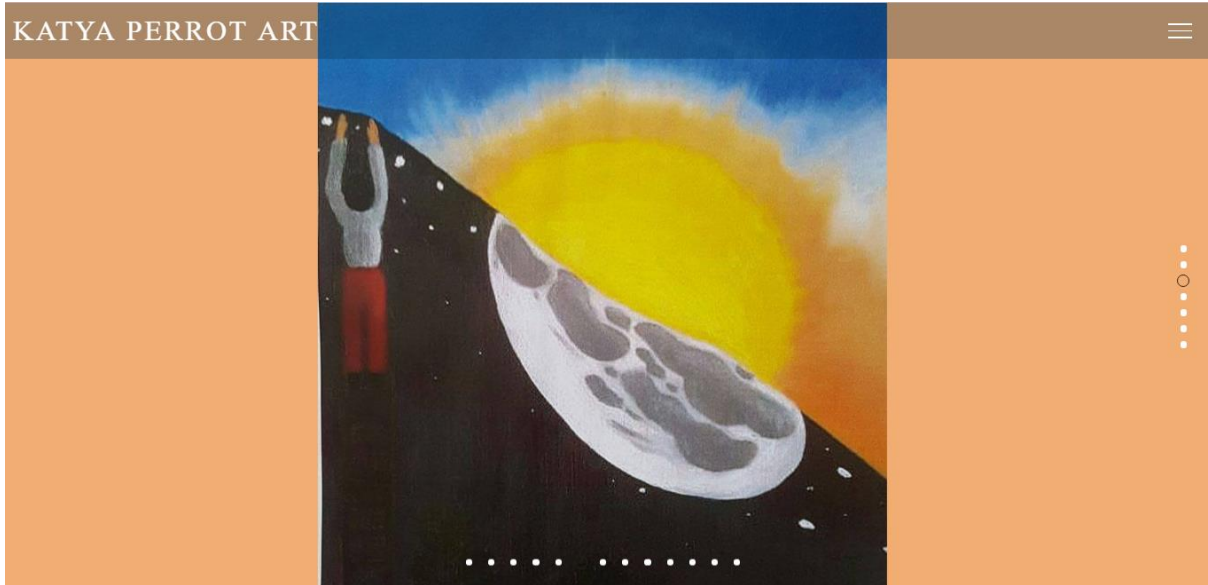


Living room



DRAWINGS





MOSAIC

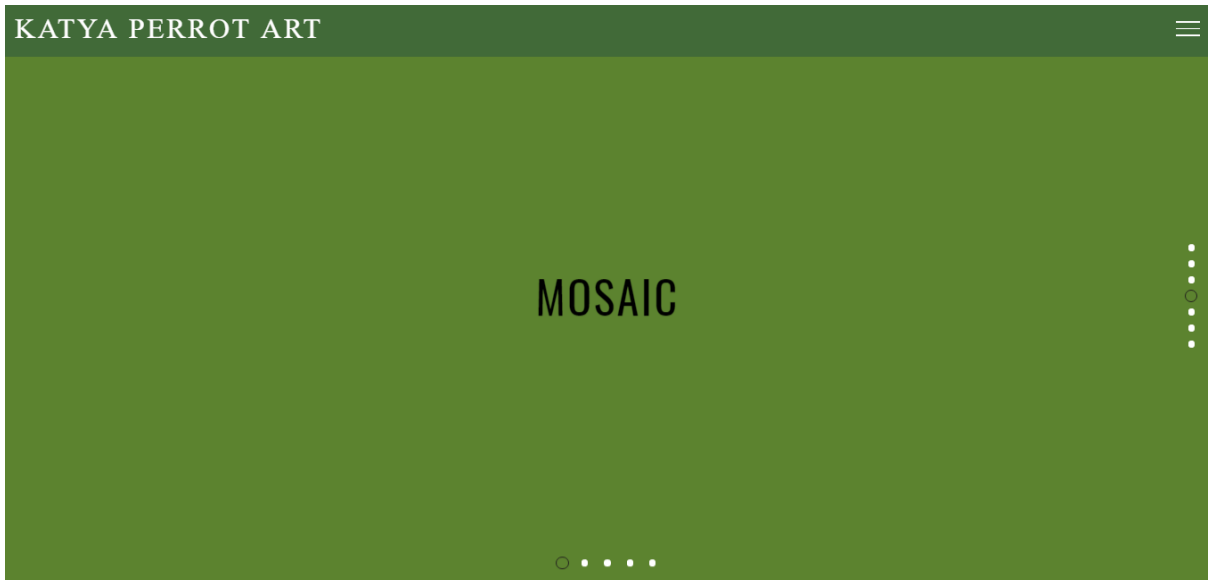
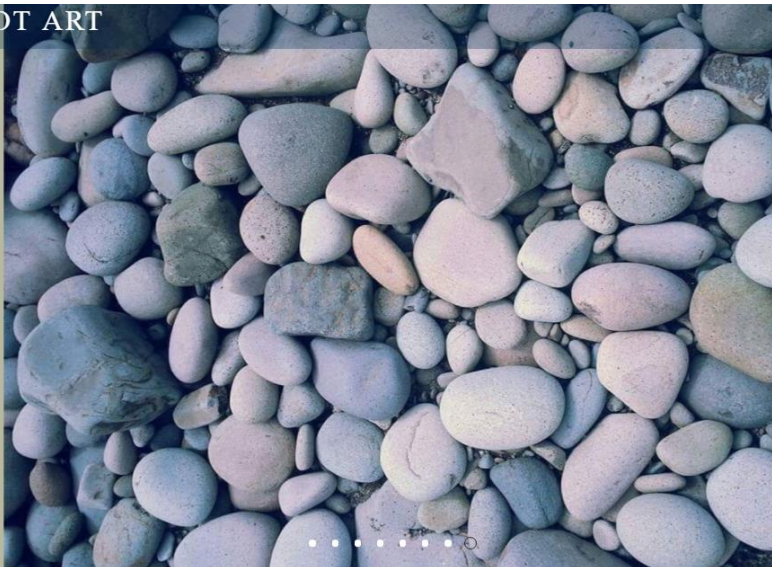




PHOTO INSPIRATION



SKETCH



CONTACT ME

Name

Email

Message

Submit

Reflection

Working on the Interior Design website we have used previously known technologies such as MySQL database and Notepad++. However, we have also learnt how to implement new technologies. For instance, it has been our first experience with Photoshop. It has become a challenge because Photoshop offers totally different tools than other programs that we used before. Bootstrap has become a new technological resource as well. We have learnt how it assists our application to be users friendly not only on the standard laptops and computers but also on other devices including mobile phones and tablets.

XAMPP 's implementation was useful as it has provided convenient tools for APACHE as a server and MySQL database that gives us a chance to store the data that users would leave for the designer.

Even though some technologies took a long time to implement it was useful experience to learn why we need them and what the main functions they offer.

Testing

Test planning

Website's quality might be appraised on its accessibility, functionality, mobility, useability, flexibility, maintainability, performance and stability. For this reason, it is vital to test the project and determine whether our application is ready to be released.

The key role of accessibility and functionality has been mentioned above.

Mobility part of our website also reflects portability and is responsible for the chance to be moved to the other platforms if it is required.

Useability plays a core role because it proves that people would like to use this application and that it helps them to achieve their goals. In case of our project – to find a professional Interior Designer who is keen to provide her service.

Flexibility's role is to provide the opportunity to use our site on different devices such as tablets, desktops computers or smartphones.

Maintainability intends to define the errors and evaluate the code based on its clarity and tidiness.

Performance gives developers an opportunity to find out whether users are pleased to surf our website.

Stability is a critical issue that defines that the project is reliable from the user's point of view.

TEST THE BASICS

Accepting of user input

testInputNameInfo	Allow to input Name into the system.	Success
testAddInfoIntoEmail	Data is input into Email field.	Success
testAddDataIntoMessage	Allow to add a new user into the user account field.	Success
testSubmitButton	Allow users to press the Submit button	Success

Edit information

testEditDataInEmail	Data is edited without bugs as long as the edit info includes@.	Success
testEditName	Users are allowed to edit the names	Success
testEditMessages	Text in the message table can be edited	Success

Copy and paste to/from the app

testCopyPasteInName	Allow to copy and paste data to/from in the Name table	Success
testCopyPasteInEmail	Info is copied and pasted in Email if it has @.	Successful restriction
testCopyPasteInMessage	Data is copied and pasted in Message field without errors	Success

Close option

testCloseMenu	The Menu window can be closed	Success
testCloseApp	The application might be closed	Success

TEST THE FUNCTIONALITY:

Validate data

testValidateDataInEmail	Information without @ is not inserted	Successful restriction
testValidateDataInName	Users are allowed to input integer info instead of string in the Name field	Failed
TestValidateDataInMessage	Not only text data but also integers are saved without restrictions	Failed

Boundaries tests

TestQuantityOfSymbolsInName	Allow to save no more than 255 symbols as it has been declared	Successful restriction
TestQuantityOfSymbolsInEmail	Restricted to insert more than 255 symbols	Successful restriction
TestQuantityOfSymbolsInMessage	Allow to add unlimited number of symbols as it wasn't restricted in DB	Success
TestNegativeIntegerInNames	Allow to save not only numbers but also negative Integers & fractional numbers in Names	Unsuccessful restriction
TestNegativeIntegerInMessages	Allow to save data consisting of negative integers or fractional figures only	Unsuccessful restriction
TestNegativeIntegerInEmails	Restricted to save fractional numbers or negative integers	Successful restriction

Test the foreign languages

TestInputInOtherLanguagesName	Allow to insert info in English, French and Russian languages	Success
TestInputInOtherLanguagesEmail	Allow to input data in foreign languages as long as they include @ and dot+domain	Success
TestInputInOtherLanguagesMessages	Allow to add info not only in English but also other languages	Success

S

TEST THE USER INTERFACE:

Consistent control's look and feel

TestNameInterface	Name's text field has consistent look and feel.	Success
TestSubmitButtonInterface	Submit button seems to be located in the proper place and easy to press	Success
TestEmailInterface	Email table is well visible and placed correctly in the row	Success
TestMessageInterface	Message field offers enough room to type and has a suitable location above the submit button	Success

Spelling control

TestTheSpellingInterface	No spelling mistakes have been defined in the app	Success
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Aligned control

TestAlignmentInterface	Some samples of design's pictures include inappropriate fragments. They can't be removed without cutting the picture. Drop-down menu covered the introduction word	Failed. Unfixable
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Show the display data

TestDisplayData	All the displayed data is shown correctly	Success
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Test results

Different tests have been done. They have assisted to make sure that the website works. Nevertheless, a variety of bugs has been defined. As we expected the basic part of the tests meets the standards. The application allows users to input data, edit it and submit as it was declared. Furthermore, it is possible to close the app as well as the dropdown menu. Plus, copy and paste options are available without restrictions either.

The first error has been found when the validate data was checked. Except string information, it is possible to insert integer data and, moreover, negative figures and fractional numbers in the name field as well. In Messages, it was allowed too. It wouldn't be a bug the table required to input extra data except negative integers or fractional numbers because we might presume that users need to send Katya numbers with negative meaning but we can't imagine that the whole message consists of them only. That's why it was considered as an error. Though the email part was tested successfully as long as it has required to input correct details including @ and dot domain (.com/.com.nz/.com.au etc).

In the boundaries tests it was also checked the quantity of symbols in every aspect. When we were building the Database we preferred to declare 255 symbols in the name and email fields to make sure that any users need would be met. Plus, we picked the 'text' option in DB, for this reason, the quantity of symbols in the message table is unlimited.

As long as we speak 3 languages we had an opportunity to check them properly. According to our tests it was defined that the tables allowed to save data in Russian, French correctly with the same restrictions as they have in English. For instance, limited number of symbols.

As for the UI, Consistent control's look and feel of our fields and button were estimated. All of them are visibly clear and properly located so users won't have troubles to see them. Spelling part hasn't offered any issues either. However, the aligned control defined the other bug - some of the presented pictures consisted of the extra fragments. It can't be fixed because if we cut the those parts the pictures fragments would be deleted with them.

At last the tests have defined that the presented data on the Interior Design website is demonstrated without errors.

Reflection

The tests demonstrated above have confirmed that testing is a vital part of the project as long as it allows to make sure that basic and functional parts work properly, that users get the users friendly and easy operating software program. Moreover, it gives a chance to see whether the application has bugs and how it is possible to fix them. Plus, testing assists also to state errors that users might struggle with in the future.

Black boxing tests help to define if the users are able to surf the site without any problems and evaluate it from their side. It is concentrated on the users' thoughts and feeling when they explore the website. Define whether they would be happy to have offered options or to press offered buttons.

As for the white box testing, it helped us to define such a significant error as the extra fragments on the presented pictures. After the serious consideration, it was decided to leave them untouchable as if we cut the extra fragments we would be obliged to cut the parts of the design's pictures. It might lead to the changes of the pictures' perception.

Therefore, we were proved that testing plays an important role in the project and it worth to do it even though it takes a long time.

Conclusion

Reflection

The Hotel Reservation System is the first project in Software programming. It gave an opportunity to work with Java programming language and learn the main basic knowledge of coding. The idea of this application came at that time when we were exploring how to create a package, what the difference between a class and method, how to declare libraries etc. Further the work on the program was developing then more skills were gained.

We have met a lot of obstacles on the way and even expected issues. For example, there was a situation when the same code didn't connect with DB even though it used to do it previously. Usually the solution was found in syntaxes. It proves that developers need to pay extra attention on the syntaxes in the code because every sign plays an important role.

Design of the application is another issue that requires further consideration. A lot of scenarios of future design might be created. For instance, more colours can be added to the UI design that make it more pleasant for the user.

Limited Java knowledge didn't let deliver the complete system flow of the Reservation. As long as it still requires more skills to create a proper credit card operational system and banking structure.

However, the main purpose of the project is achieved and the application works as it was intended at the time of planning.

Working on the next project we would make more time for it and create strict deadlines for each part of the work. It also requires to expand Java skills including tutorials, documentations and own experiments. The last vital thing to implement in all further projects is to remember to save the changes frequently and keep the backups on daily basis.

Interior Design web application has become our first experience in web development. Though we had worked with coding previously, only web project gave us a chance to work with HTML and CSS, get the brief idea of JAVA Script and basic PHP, explored more information about MySQL.

During this project, we have struggled with different obstacles as in the coding part as in the user interface. Except those issues, we have had a new complication – communication with a client. In our previous programs, we also were thinking about our end users and tried to predict what needs to be done to meet their expectations. However, only in the web application we have created the product for the real client who had her own interests and ideas about the site. Moreover, client's preferences changed a few times during the work. And it made the job more complicated. On the other hand, communication with the clients has offered some benefits as well. For example, our client is the Designer, that's why at the first stage of the project she declared her expectation about UI part of the application and saved us time to create our samples of the design.

The other issue was related to MySQL. During our Desktop project, we used MySQL to work with Database. After it was completed we closed the program. However, when we started using MySQL for the current web development we struggled with its performance. Later it was found out that

previous version didn't let current MySQL to work correctly and we had to uninstall it from the machine.

As long as some parts of our code were created after the tutorials' examples it was a challenge for us to define every detail of the used syntaxes.

The last obstacle was the limited time of our project. We were obliged to work with the code at the same time as it was already high time to write the documentations.

Working on the future web projects we would provide more time for the technical part and communication with clients. It would be significant for us to follow the deadlines declared in the Gantt chart. Moreover, we would do the UX part of the project which is usually done at the first stage. It would assist us to define the core problems and name all the involved users including clients, users, potential users, developers etc, make a competitor research and explore the marketing. All these aspects intend to make web app better.

Summary

Our Interior Design website has become our first web development experience. It gave us a chance to gain basic knowledge of HTML, CSS, PHP and JAVA Script, their syntaxes and implementations but also this project allowed to experience the work with client. It taught us how to have a deal with the customer and do our best to meet their expectations.

Our Designer intends to declare her performance to the world. Nowadays, the most practise and useful way to do it through the Internet. For this reason, Katya has had an idea to get her own website. It gives her users an opportunity to get to know her design works and order the service. Furthermore, it aims to make the potential users aware with the Interior projects offered by our Designer.

The last step is the post-production stage where we would find a suitable hosting and domain address to accomplish the project.

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