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WEB APPLICATION DEVELOPMENT FOR MAYA NEPAL RY

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ABSTRACT

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Maya Nepal Ry is a foundation which provides shelter, education and future for the orphan and homeless children in Nepal. It is registered in Finland. Many volunteer activities like restaurant day and charity sale happens in Finland and the profit is sent to children home in Nepal, without any deductions. Maya Nepal Ry had an existing website. The existing website had the problems with usability and the client was unsatisfied with their website.

The main aim of this Bachelor's thesis was to overcome the pre-existing usability problem with the existing webpage. The Waterfall model was followed to develop this application. This process consisted of analysis, design, development and testing. For this application development I used tools such as HTML5, CSS, Bootstrap and JavaScript. Only the user interface was supposed to be done during this thesis project.

First the application was designed with a pen and a paper. Then the design was made by computer according to the client's requirements. After the design had been approved, the development work was started. After the development work had been done, trial was done by inviting three test users. Feedback was collected from each test user and improvements in the web application were done. Finally, the UI (user interface) of the new application was ready. The end result was according to the plan.

Keywords: User Interface, Website, Bootstrap, Charity, Mobile friendly

PREFACE

I am a help loving person and I like to do social work voluntarily. Two years ago I came to know a voluntarily working foundation named Maya Nepal Ry. It works for the orphan, homeless children in Nepal. I have been an active volunteer in Maya Nepal since two years. As I had to do my thesis, I got an idea about building a new web application for Maya Nepal. I felt that it would be my honor to do that. I talked to Johanna Heikkilä who was responsible for the website part and who is also my supervisor from the company side in Maya Nepal. I am thankful to her for providing me with the thesis.

I would also like to thank my school supervisor Terhi Holappa, who has been guiding me through this. Without her help, support and guidance, it would have been impossible.

Oulu, 01.10.2016
Hari Pandey

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VOCABULARY

HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
PHP	Hypertext Preprocessor
BOOTSTRAP	Html, CSS and JavaScript base framework for web development.
JAVASCRIPT(JS)	High-level, dynamic, untyped, and interpreted programming language
UI	User Interface

1 INTRODUCTION

Maya Nepal Ry supports a children's home in Bhaktapur, near Kathmandu, the capital of Nepal. Its main aim is to secure a permanent, loving and homely environment for children with a broken past. In addition, the association is supporting other children and youths with their education, as well as attempting to improve the situation of child rights in Nepal. The work is funded mostly by member fees and donations. Except for the dispatching costs of the banks, all the funds are directed towards expenditures on housing, education of the children, salaries of the workers and basic needs like food, clothes, health care, hygiene. [1]. They have an existing website. In this project, a new web application for Maya Nepal Ry is going to be developed. The new application is supposed to have a new look with a solved usability problem which exist in the existing web application. A new web application will also be easy and user friendly.

During this application process, Waterfall model is used. Waterfall model has different phases which are: analysis requirement phase, design phase, development phase and finally the testing and maintaining phase. HTML, CSS, Bootstrap and JavaScript was used as tools. Thus, HTML is used as a backbone and it is used to make the structure needed in the website. Similarly, CSS is the style sheet which helped making the website look stylish and good. Bootstrap is used as a framework which used HTML, CSS and JavaScript. Bootstrap was really easy to use and it made the developer's work simple and fast.

The main aim of this project was to analyze the need of the client and to design and develop the final product according to the client's demand. In this thesis part, the user interface(UI) development is done, which means that only the web application is made ready, which is not fully working. The backend 'server' work and further development is left undone when this thesis project is finished.

2 TYPICAL MODELS OF SW DEVELOPMENT

2.1 Waterfall model

The Waterfall model is a linear sequential flow in which the progress is shown as flowing steadily downwards through the phase of SW implementation. This model is very easy to understand and use. In this model, every phase should be completed fully before proceeding to another. After each and every phase review is done, to know whether the project is proceeding in right direction or not. [3] The figure 1 shows waterfall model processes.

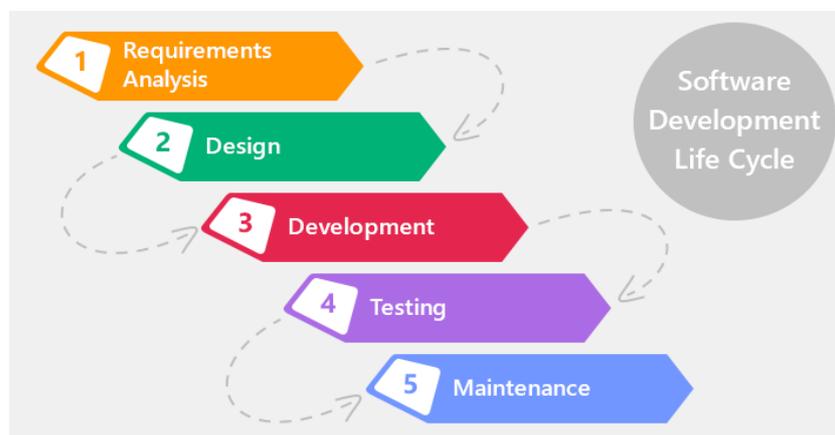


FIGURE 1. Waterfall model in SW development [4]

In the figure above, the phases of the waterfall model are shown. The requirement analysis phase is an important phase and in this phase all the analysis should be done. Especially, this phase takes a bit longer time since this is the base of the project. Conducting the evaluations and conducting interviews with the users should be done during this phase. A detailed problem vision document including a background problem and a project goal should also be created in this phase. [5]

In the designing phase of the developmental cycle, the design is prepared. It could be prepared mockups or hand-drawn sketches, according to the need of the client/user. [6]

In the development phase, the actual development work starts. Pre-planned design tools are used together to forward the step. Also, the creation of an interactive prototype can be done. This is actually the skeleton for the future application. In this step, coding work is done. Usually, in the project development, first-of- all the prototype is made. When the prototype is checked and fixing is done, if needed, the further development is done to make an actual final product. [7]

When the product is developed, it should undergo a meticulous testing process to make sure that it solves the problem that was previously mentioned in the analysis phase. The client should also be testing and trying to use the product in the same way that it will be used after the implementation. And once the test is passed, it can be deployed. [8]

2.2 V-Model

The V-model is similar to the waterfall method but an extended form. It also moves down in a linear way but from the implementation phase, it moves up making a V-shape as shown in figure 2. The advantage of this model is that each phase has a specific result and it has a higher success chance than the waterfall model since the development of test plans are made earlier during the life cycle. Whereas the disadvantage is that it is very inflexible and it does not provide a clear path for solving problems during the testing phase. The horizontal and vertical axes represent the time or project completeness(left-to-right) and level of abstraction, respectively. [9]

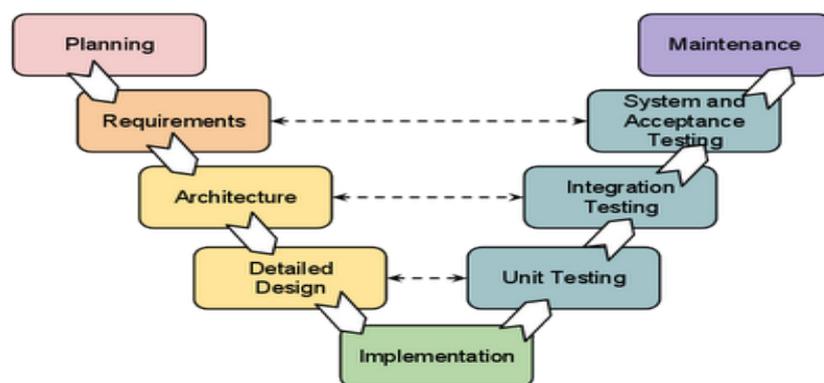


FIGURE 2. V-model in SW development [10]

In the above figure, the phases of v-model are shown. This model is divided into three different phases. Verification phase, Coding phase and Validation phase. The verification phase consists of a requirement analysis, system design, architectural design and module design. The coding phase includes a coding part. And the validation phase includes unit testing, integration testing, system testing and acceptance testing. [11] Some of the suitable scenarios to use the V-model are:

- Requirements are well-defined.
- Product definition is stable.
- Technology is not dynamic and is well understood by the project team.
- Project is short.
- There is no ambiguous or undefined requirement. [12]

Therefore, in conclusion it can be said that this model has its own pros and cons.

2.3 Agile Development

The Agile development method is a set of principles for software development under which requirements and solutions evolve through the collaborative effort of self-organizing cross-functional teams. [13]. The advantage of this model is that it includes face-to-face communication with the consumer during the development. Whereas the disadvantages are that it needs a special skill for the team and the documentation is done in the later stage.

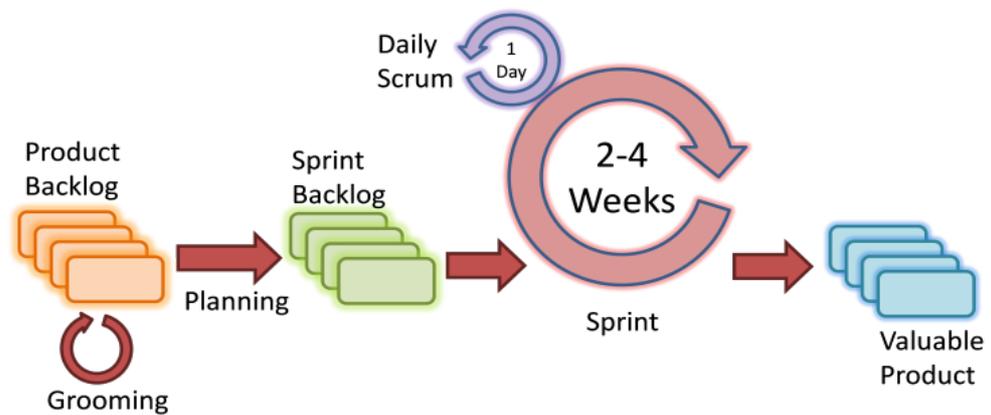


FIGURE 3. Agile model in SW development [14]

In the figure above, phases in the agile model are shown. Scrum is an iterative and incremental agile software development framework for managing product development. [15]. Product backlogs are the collection of prioritized feature list, divided into the small part and containing a short description of all functionality desired in the product. [16]. Similarly, a sprint backlog is the list of tasks which are distributed among the team and are to be completed during the scrum sprint.

3 TOOLS FOR WEB DEVELOPMENT

3.1 HTML5

HTML, which stands for Hypertext Markup Language is a computer language which is used to create websites. It is written in the format of HTML elements containing tags bracketed in angle brackets like '<html>'. [17]. For example:

Example 1

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>
<b>This is a paragraph.</b>

</body>
</html>
```

In the example above [18], <html> is the starting of the html page which always ends with the </html> tag. Every tag has its starting with the <> sign and it always ends with the </> sign always depending upon the tag that is being used. Similarly, the <head> tag is used to define the head part of the website, which means that it will always be on the top. <title> is the part that always shows up on the top of the browser. It can be said that it is the name of the website. The figure 4 below shows the title (Maya Nepal) on the top of the browser.

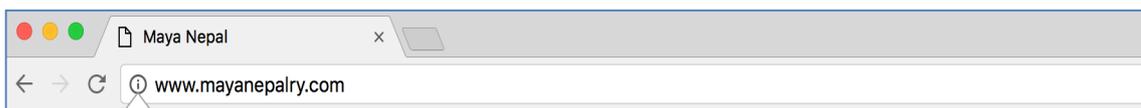


FIGURE 4. Title on the top of the webpage [19]

In the figure above, title on the top of webpage is shown.

HTML <h1> is used for the header. When this tag is used, the text inside h1 is separated from the other text. Similarly, the <p> tag is used when writing a paragraph and is used to make the text bold. The figure 5 below shows the perfect example for <h1>, <p> and simultaneously.

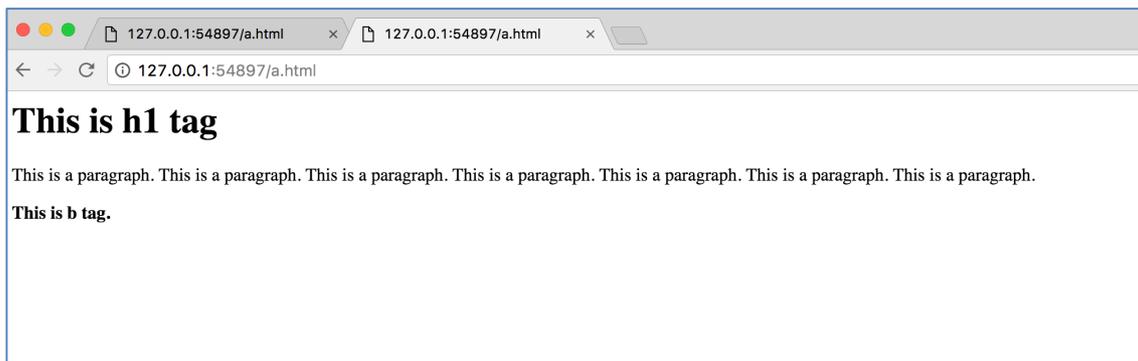


FIGURE 5. Showing different tags after execution [20]

In the figure above, the use of heading tag, paragraph tag and bold tag is shown. Thus, in this way the HTML works. After writing the HTML code in a text editor, the file is saved with a file name and with the .html extension. This .html extension is a major part to remember so that the website executes well. Otherwise the file is just a normal text file.

3.2 CSS

CSS or Cascading Style Sheet is used to add a style to the HTML page. It styles in various ways. It can fill color, add margins and paddings. It can also change the look of the texts by making them bold, by increasing or decreasing the font size. [21]

CSS styles are written in the following form as shown in example 2:

Example 2

```
body {  
  
    background-color: light blue;  
  
}
```

In the example above, the HTML body part is targeted. And the CSS done is in the background. Thus when this CSS is executed, the background color of the webpage becomes light blue. Thus, the CSS style is defined in a `property: value` form. The CSS property can be written in the same html page or it can be linked to a separate CSS page or by embedding in the same tag where you want to add CSS. Thus, when the CSS script is written in the same HTML page, the HTML page looks like this. (See figure 6) [22]

```
<!DOCTYPE html>  
<html>  
<head>  
<style>  
body {  
    background-color: lightblue;  
}  
</style>  
</head>  
<body>  
  
<h1>Hello World!</h1>  
  
<p>This page has a light blue background color!</p>  
  
</body>  
</html>
```

FIGURE 6. HTML code with CSS in same page [23]

When the CSS is linked as a separate page, a line of code is added to the <head> part. In the code, the type of the file name and the source are mentioned. Thus, not depending upon the destination where CSS is written, functions are the same as shown in example 3 below.

Example 3

```
<head>
    <link rel="stylesheet" type="text/CSS" href="mystyle.CSS">
</head>
```

In the example above, href defines the file name and the destination.

Example 4

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1   {color: blue;}
p    {color: red;}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

FIGURE 7. Embedded CSS inside HTML [24]

In the figure 7 above, CSS script is embedded in the HTML itself.

3.3 BOOTSTRAP

Bootstrap is the most popular HTML, CSS and JavaScript framework for developing responsive and mobile-first websites. [25]. It is a free and open-source front-end web framework for designing websites and web applications. It contains HTML and CSS based design templates for typography, forms, buttons, navigation and other interface components as well as a JavaScript extension. [26] Other frameworks also support the backend programming while Bootstrap is just for the front end designing.

Bootstrap is really handy and easy to use. It can be used it in various ways. It is possible to download a complete Bootstrap folder and include the source path in the new file that is being worked on. Or it is possible to just download the source code or link the Bootstrap CDN link to the 'href' function. Figure 8 shows how easy and stylish the bootstrap coding is.

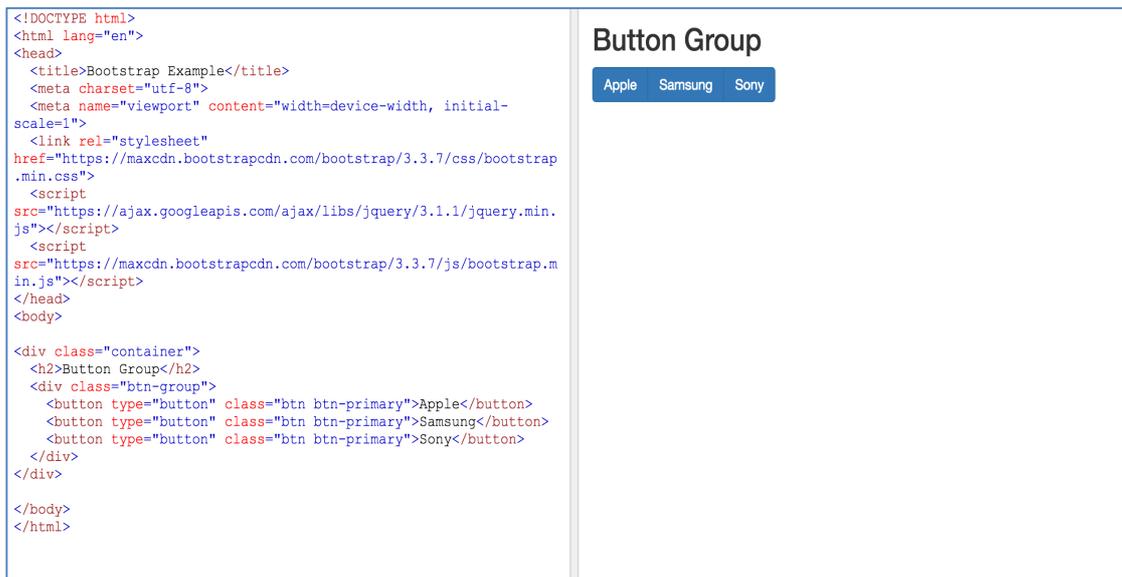


FIGURE 8. Bootstrap button group function [27]

In the example 4 above, Bootstrap is linked by linking the CDN source path. Thus, in this case a Bootstrap folder download is not required. The Class btn-group is used to classify the class, which refers to the button design on the right-side. The Class btn-group has a pre-coded button function in the source therefore there is no need to code a lot. Bootstrap is also easy to use.

3.4 JavaScript

JavaScript is the programming language of HTML and the web. It is an object-oriented computer programming language commonly used to create interactive effects with web browsers. The <script> tag is used to define a script in an HTML page. It is commonly used in image manipulation, form validation and dynamic change of the content.

JavaScript is a client-side scripting language, in which the data source is processed by a client's own browser rather than on the web server. Therefore, the JS function can validate itself without any communication with the server. It is basically used during the form validation, which means that it is used in case of filling a form and before submitting it, JS validates that everything is in order. In case of failure of the validation, JS produces an error message before any message is sent to the server. [28]

The example 6 shows how the JS can be used.

```
<script>
function sum(a,b)
{
    return a + b;
}
var total = sum(7,11);
alert(total);
</script>
```

Example 6: JavaScript use demonstration.

In the example 6 the JavaScript tag is used and an additional function is introduced in the beginning. This is a function sum (a, b) and inside the curly braces the function is written so that the output is the sum of 'a' and 'b'. Also, a variable named 'total' is created. After this the function is called by giving the value in the same way as the function is defined a sum (7,11). Therefore, the alert tag there prints the value which is embedded inside the variable 'total'.

4. AIMS AND TARGET OF THESIS

Maya Nepal Ry is the company behind the thesis. The target of this thesis is to meet the client's requirements for the betterment of the website. Before this thesis was started, Maya Nepal Ry had an existing website. But according to the client, the website was incomplete and lacked information. Not being an attractive website was also a reason for the initialization of this thesis. The client presented the author the problems and wishes for a new website. The client was demanding the website to be charity themed. Also the donation and the contact information were the most important part of the website.

Main targets of this thesis are as follows:

- To find out the need of the client by doing a requirement analysis.
- To design and present the right sketch/computer made design which matches the client's demand.
- To develop a web application meeting the client's need and overcoming the drawbacks.
- To undergo some tests before deploying the web application.
- And finally presenting the product to the client.

The final product should have a clear navigation to the content. The information platform should not be repeating, which might confuse the user. The color combination should be user friendly. The main aim of the company is getting donations and helping hands, which should be focused on the website. In this thesis, only the front-end will be done. The backend work will be continued by some other developer after this thesis.

For the development of this product, the Waterfall model, which is explained in chapter 2.1, was followed.

5. METHODS AND TOOLS

All the models mentioned in chapter 2 have their own pros and cons. It is a developer dependent choice, which model a developer wants to follow. But, in this case the author preferred the Waterfall model to any other software development model, because it is convenient to use. It has every step very clearly defined and the amount of resources required is minimal. In each phase, the output can be seen and due to this, the client and the developer are always up-to-date about the situation. Since in this thesis, the quality is more important than the schedule or cost, the Waterfall model is the best choice. The methods that should be done are presented in the figure 9 and explained more precisely below.

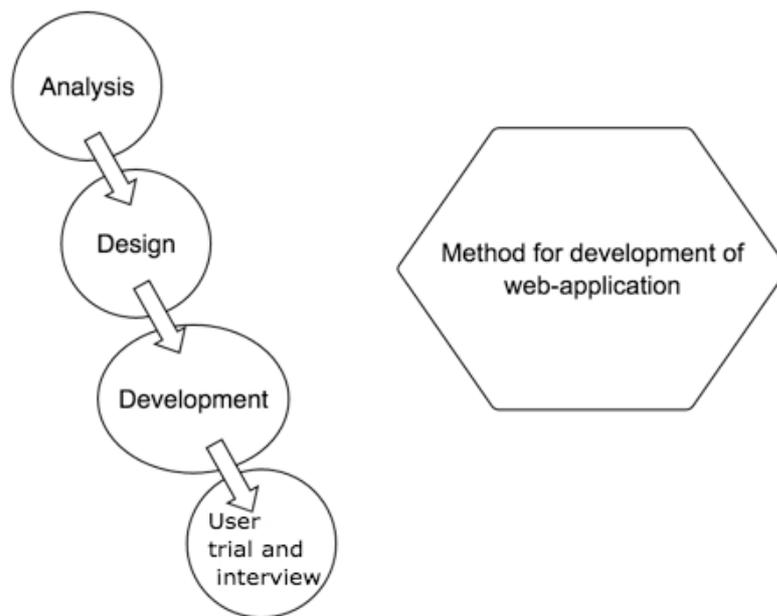


FIGURE 9. Waterfall model of the thesis

In the figure, the modified waterfall model is shown, which is used in the thesis.

5.1 ANALYSIS

First of all, a diagnosis of the problems will be done which will include the technical diagnosis method, Heuristic Evaluation. Heuristic evaluation is a usability inspection method for the computer software. It helps to identify usability problems in the user interface. It involves the evaluating examination of the interface and judging its compliance with recognized usability principles. [29] And during this phase, the drawbacks in the previous web application will be found. During this phase, also the client's need will be taken into consideration. Also, further design will be done according to the client's need.

5.2 DESIGN

After the analysis phase, the design phase will be started. As a final design, a sketch with pen and paper will be made, which is easy to do. After consulting with the client, the final design will be done.

5.3 DEVELOPMENT

In this development process, 'Brackets' will be used as a text editor. The text editor is the base where all the codes are written. Bootstrap will be used as the framework, because it is very easy to use.

5.4 USER TRIAL AND INTERVIEW

After the completion of the developmental phase, the new application will be ready for trial. In this project development, there will be three test users. Two of them are personnel from the company and one person will be invited for trial. They will be using this application in desktop computer, tablets and phone. They will be asked a set of questions about the website. They are as follows:

- a. What do you think about the color of the website?

- b. Was navigating easy?
- c. What do you think about the website model/look?
- d. What did you like about the website?
- e. What could be better in this website?

Thus, in this way the trial will be done.

6 RESULTS

Each and every step was followed according to the Waterfall model. Results are specifically written for every method that were used to find the solution.

6.1 ANALYSIS

The result of the analysis phase was the aim for this project. It was difficult to figure out all the drawbacks of the existing website. But, by applying a heuristic method, it became easy.

During the heuristic evaluation the following usability problems were found:

- The existing webpage was not easy and user friendly. The users were not able to find the information they need in a certain limit of time.
- The design was aesthetic and minimalist. Since there was so much unnecessary information which was rarely used, it was just consuming the space and slowing down the website.
- No error messages were given whenever something went wrong, due to which the user was unknown about the situation.
- There was also a problem with the consistency and standard because few links and tabs meant either the same page or a part of the website.

Also, a requirement analysis was performed to understand the need of the client. The following targets for the application development were found.

- The client is expecting to have a good looking modern user interface.
- Since the main objective of their website is to attract the donors and volunteers, they asked the author to build an eye-catching design, such a design which has a focus on the donation and the participation.
- From the functional side, the client was expecting to have fast, simple and flexible features so that the visitors would not have to spend a lot of time for a small task. The page needed to have useful information with an easy navigation.

6.2 DESIGN

Designing was done according to the modern idea, which fulfills the client's demand as well as it will solve the previously existing problems. But it had to be done a few times since the first idea did not meet the client's expectation. But after a few times of trial, the final pen and paper sketch was ready. As a final result from the designing phase, the following sketches were made:

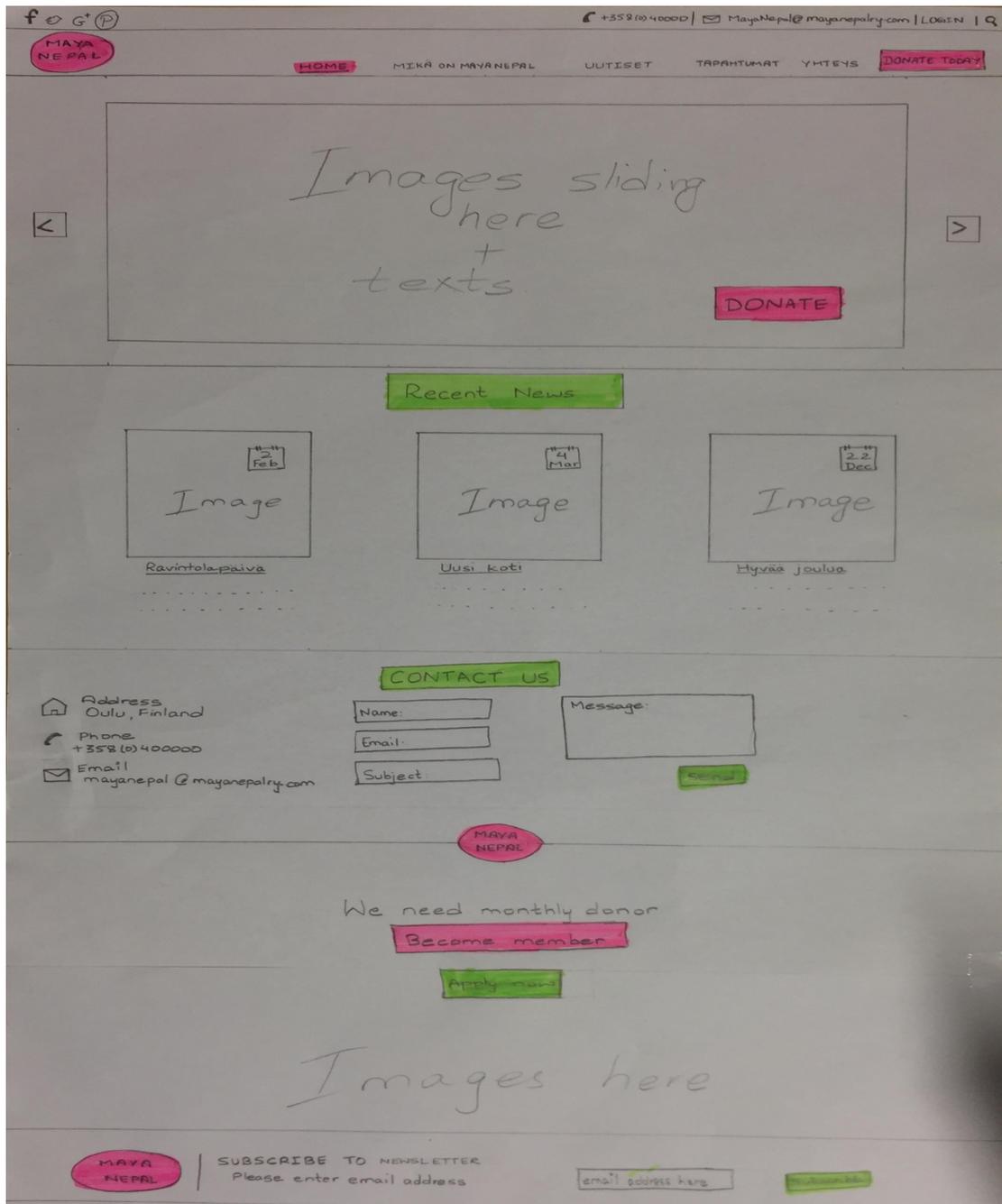


FIGURE 11. Hand-drawn sketch of the new application

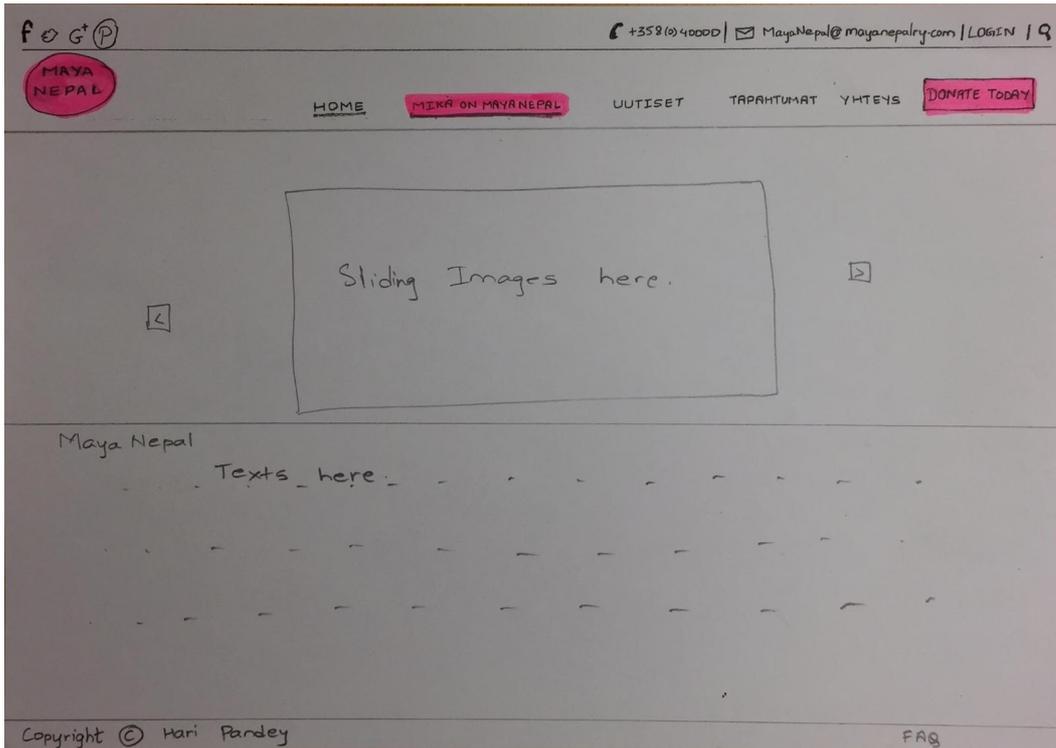


FIGURE 12. Introduction page of the new web application

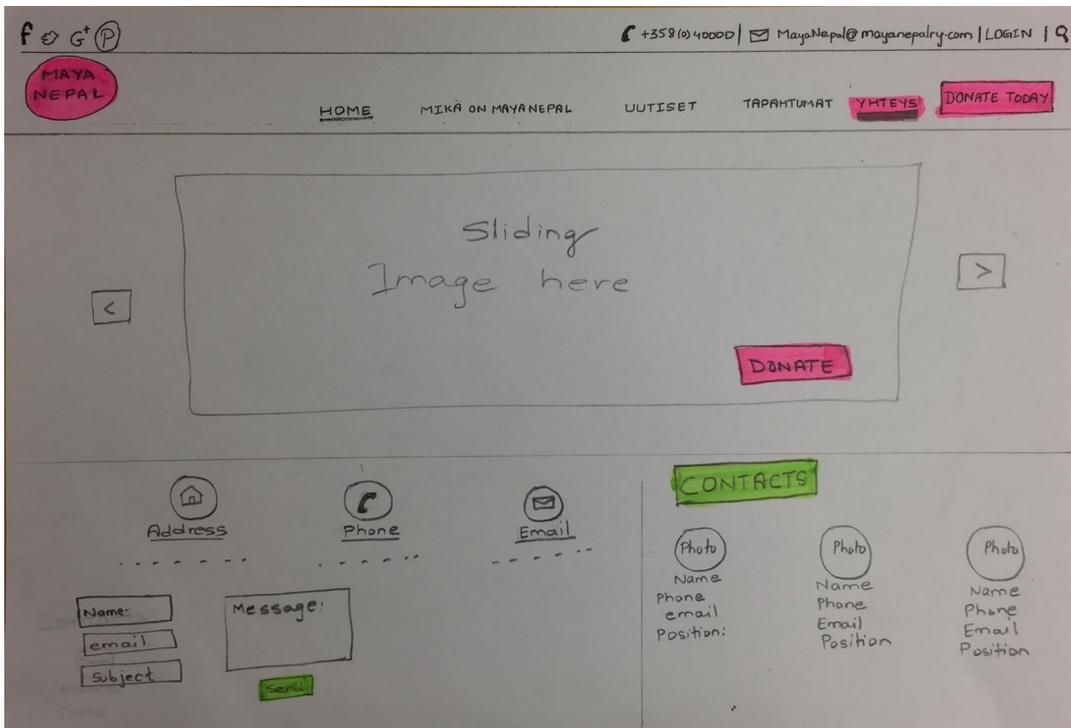


FIGURE 13. Contact page of new web application

6.3 DEVELOPMENT

As a result, from the developmental phase, the web application is built ready. The development phase was the most time consuming phase. Talking about the tool and techniques, 'brackets' was used as the text editor. During this process, many new things were learnt. Online available support and the plugins were very handy. They saved a lot of time. For example, the indentation plugin was very useful. Codes were written in a random order and when the save button was pressed, brackets itself indented the codes and made the code easily readable and managed looking. Bootstrap was used as the framework. Bootstrap made coding very easy. It was like less input and more output since even a simple line of code gave very attractive layouts, which was not easy if only HTML and CSS were used. The developmental phase was the most work doing phase. The final result was according to the plan.

6.4 USER TRIAL AND INTERVIEW

As mentioned in the method phase, the trial was done by three different test users. Many positive as well as developmental feedback were given by the test users. The questionnaire that was made, and the answers from the different test users are as follows:

Test user1 (Not from the Company)

- a. What do you think about the color of the website?

Color is really nice. It is calm and suitable. It is eye-catching. It is overall a good color.

- b. Was navigating easy?

It was easy to navigate. But because I am an unknown user, who does not know about the Maya Nepal, then it took me some time to understand what it

is. But when I went through stories and other part, then I understood the activity of the Maya Nepal.

c. What do you think about the website model/look?

It looks really nice and modern and it is placed in right order.

d. What did you like about the website?

It was good and well-colored webpage. The theme was matching the web environment. It was calm and having the same flow when going through the website.

e. What could be better on this website?

When I was going through the website, I found the shop part. Even though the shop had the name, 'Charity Shop', it did not explain me a lot about it. I wondered why it is there! Thus, there could be some kind of pop-up info when somebody arrives to that shop part in the website and just few lines on why and what is this charity shop so that the user or visitor knows more about the shop. Also the search part on the 'causes search' was confusing. At first, I did not know what it is for. I had to go through all the fields before I knew that somebody can search or filter the cause and read the story.

Also, the participation was not clear. On the website, there is a logo for the participation, but it is nowhere else. Thus, after the developer explained me about the participation, I felt it should also be a focus just as the donation is. Therefore, I think that also in the navigation bar there could be an easy link to the participation part because many people may help physically, by giving their hands and not everyone visits the website and helps financially. Thus, I think there could be an explanation and a separate page and navigation to the participation part, too.

Test user2 (From Company)

- a. What do you think about the color of the website?

It is good and it is matching the theme.

- b. Was navigating easy?

Yes! It was easier than before.

- c. What do you think about the website model/look?

It is as per the plan. And it is arranged well with the coloring. There is no extra disturbing color.

- d. What did you like about the website?

When I went through the website, especially the story part, I was in a flow with an emotion. The donation button was right after the end of the story. Thus, I felt people are probably donating because the emotional flow has not been disturbed and after the story they see the donation button. I think that it will increase the chance of getting donations.

- e. What could be better on this website?

I found some bugs with the user interface. The dropdown menu in the search category was overlapping when on the mobile view. And in the iPad view the header was messy looking.

Test user3 (From the Company)

a. What do you think about the color of the website?

A good selection of color. It suits well.

b. Was navigating easy?

It was clear and easy to navigate.

c. What do you think about the website model/look?

It is perfectly placed in order.

d. What did you like about the website?

It has the modern style of the website. The navigation and the animation are so calm and eye friendly.

e. What could be better on this website?

I think there could be some more possibilities and easy navigation to the desired page, e.g. a simple route and help on the website for the first time user.

6.5 FINAL PRODUCT

There are always chances for a bug appearance, even a word or a symbol matters. A diagnosis of the bug is also a hard job for a developer, if he/she has no good experience of tools or error codes. Thus, by continuing the coding process, finally at last the UI (user interface) is done. For now, dummy texts and dummy images are placed but when the further development work is continued, then the real text and images will be posted before publishing the website publicly.

Desktop view

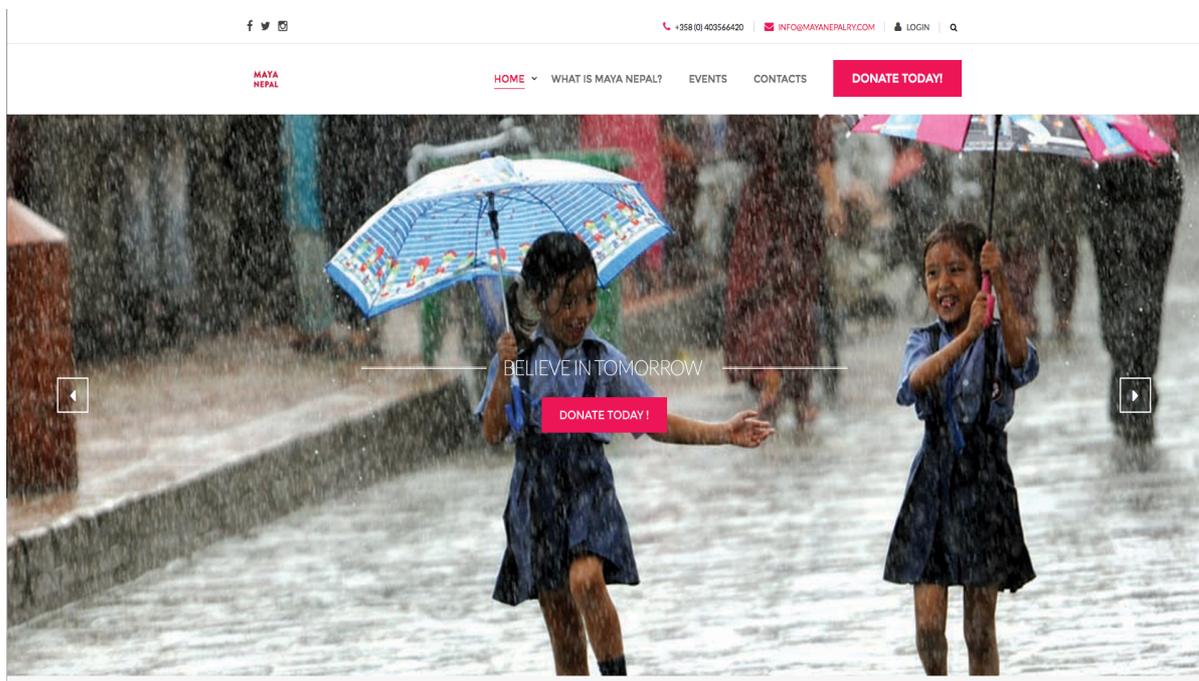


FIGURE 14. Front page with the sliding image 1

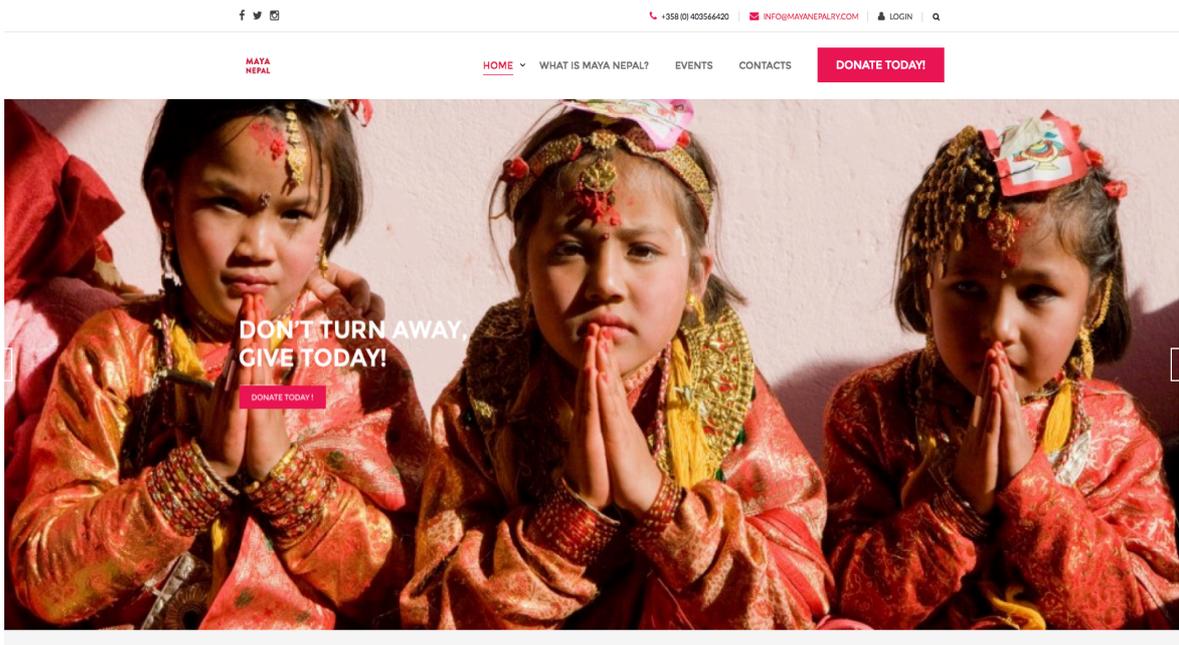


FIGURE 15. Front page with the sliding image 2



FIGURE 16. Front page with the sliding image 3

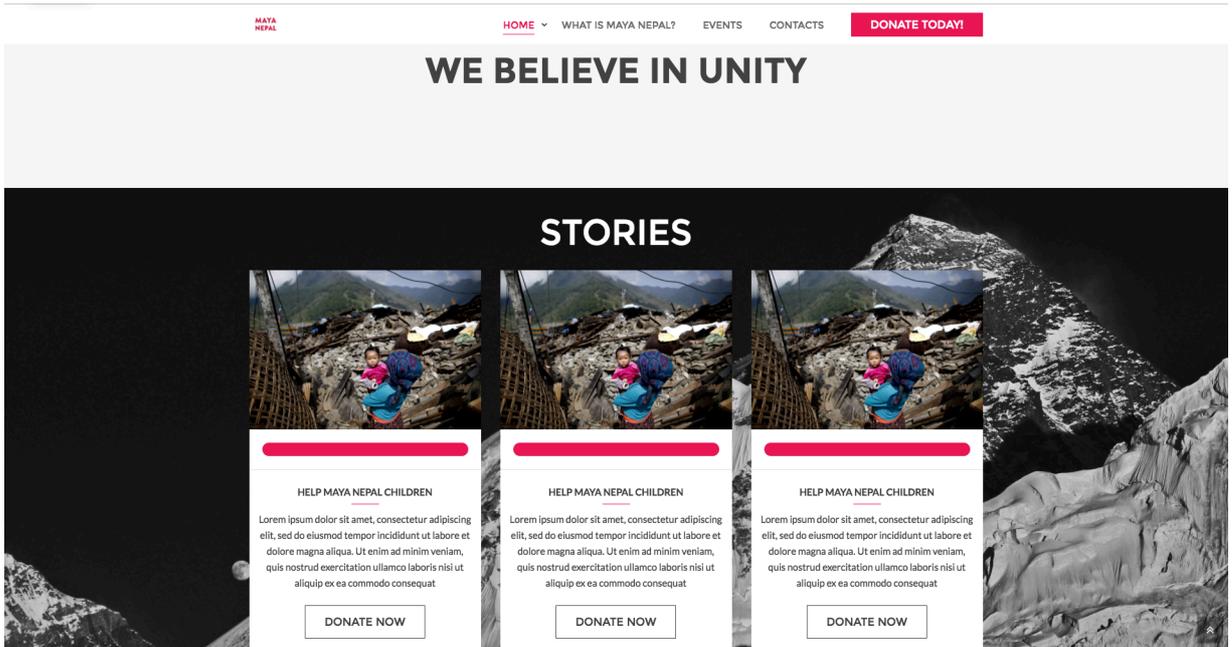


FIGURE 17. Body of the webpage with the stories

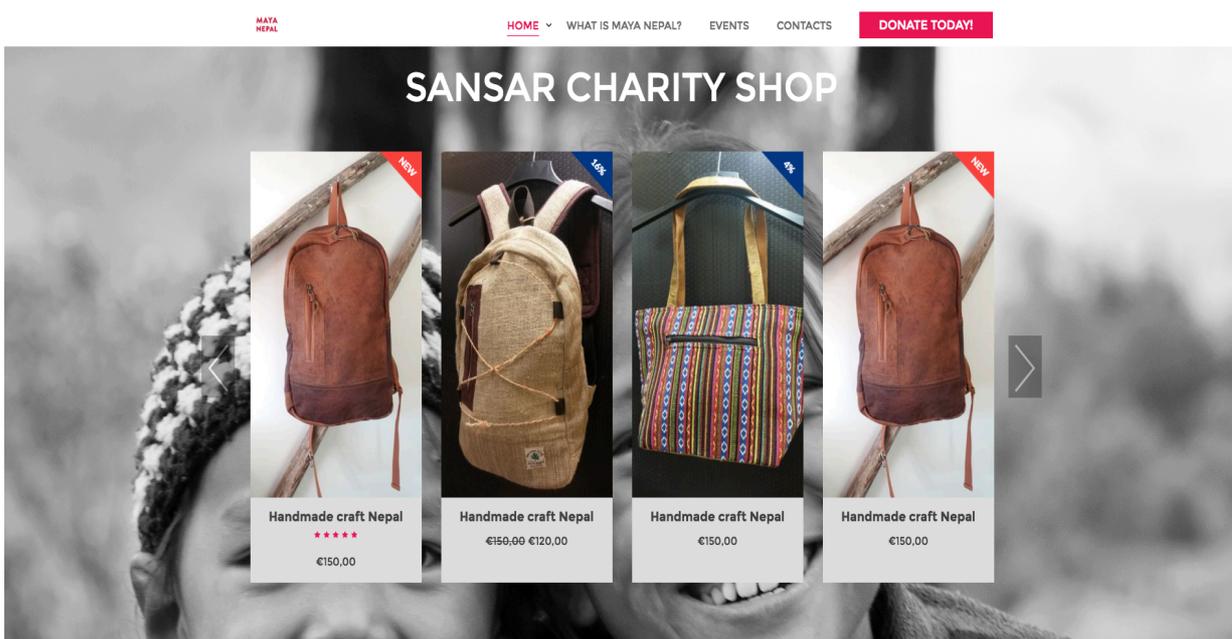


FIGURE 18. Charity shop items (from foreign database) which appear on this webpage

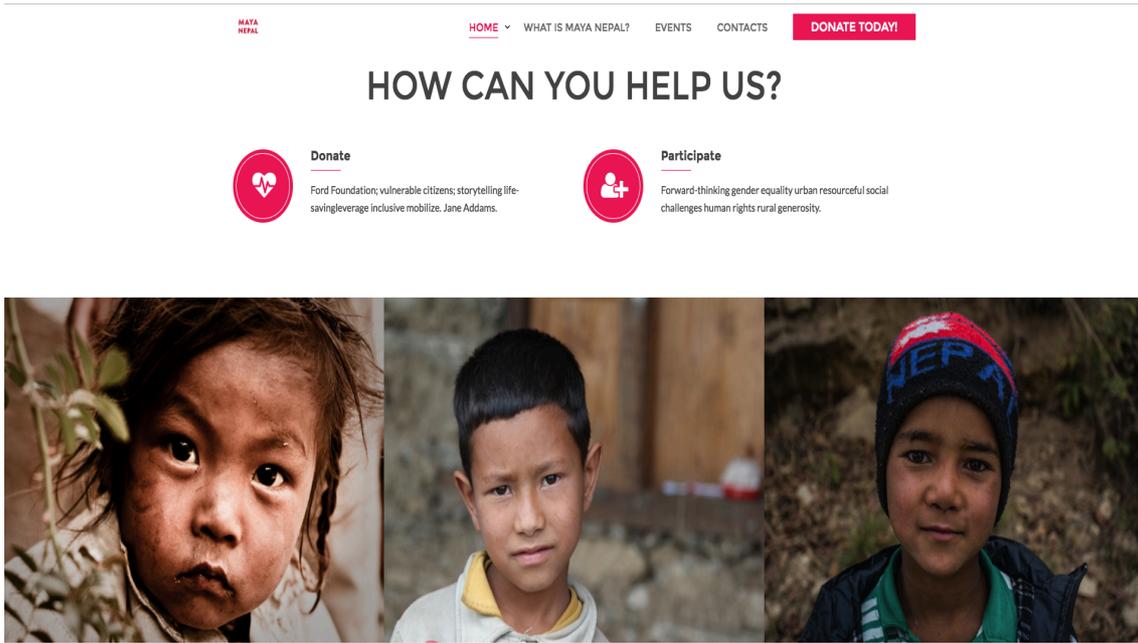


FIGURE 19. Body part in the website

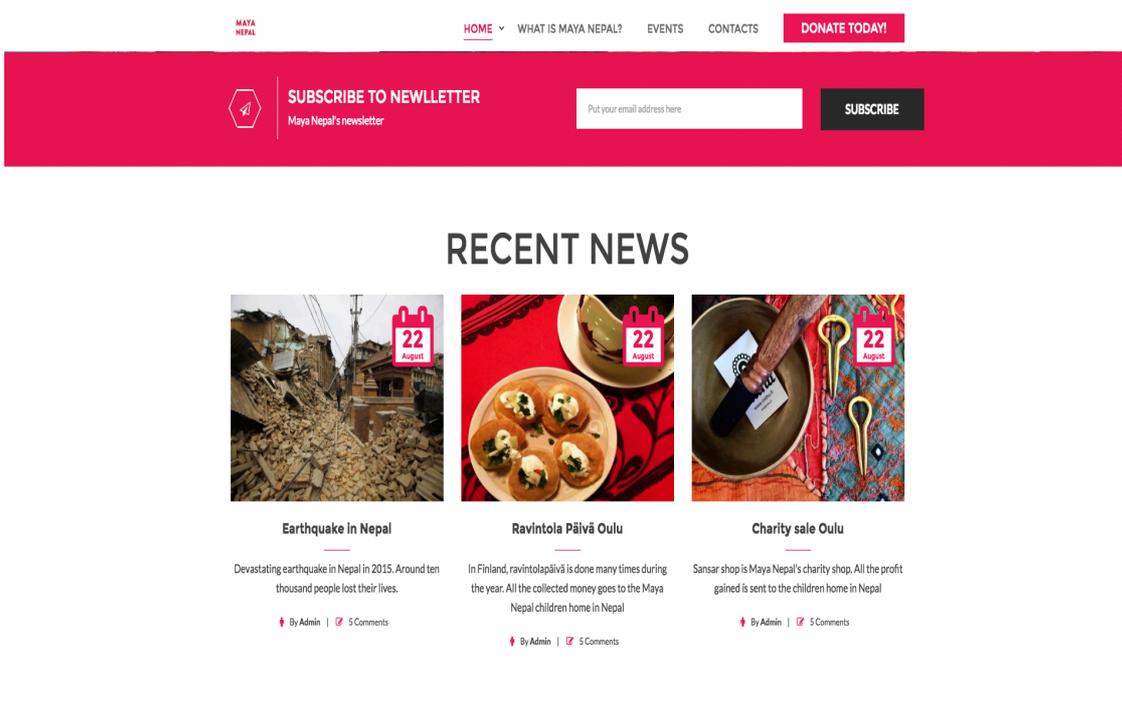


FIGURE 20. Body part in the website

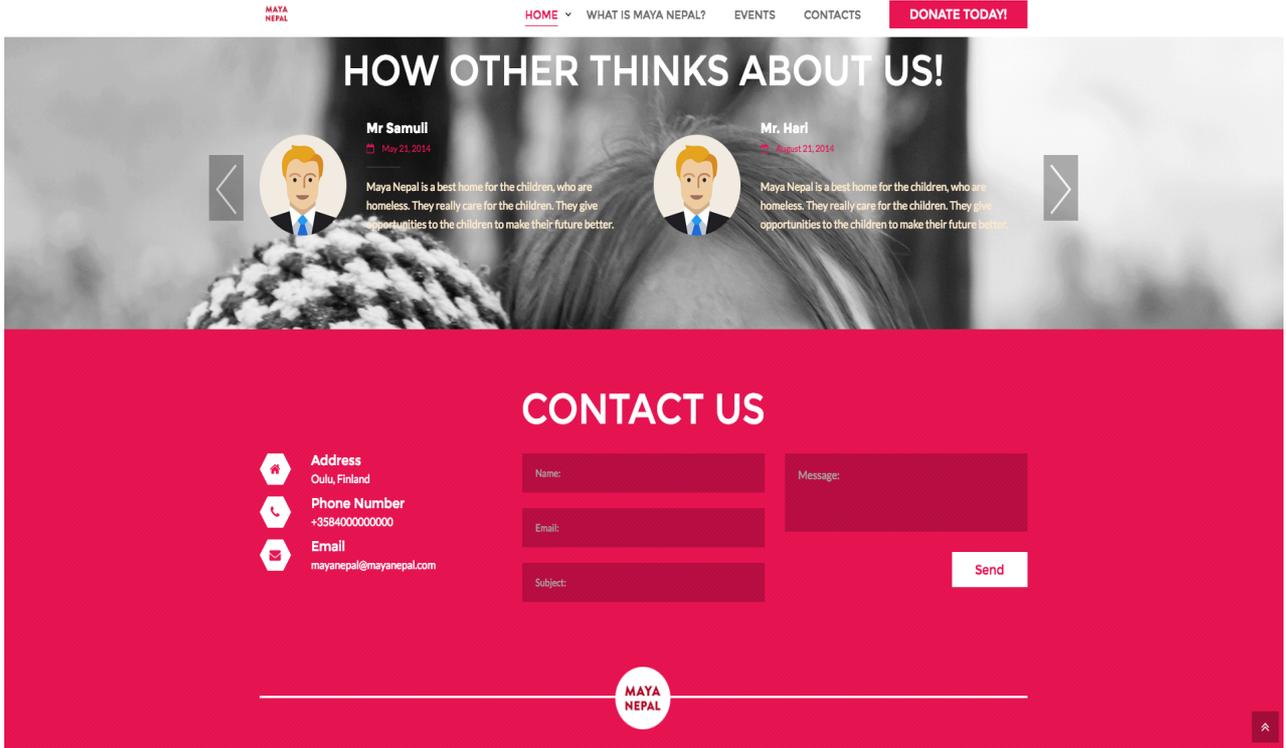


FIGURE 21. Body part in the website

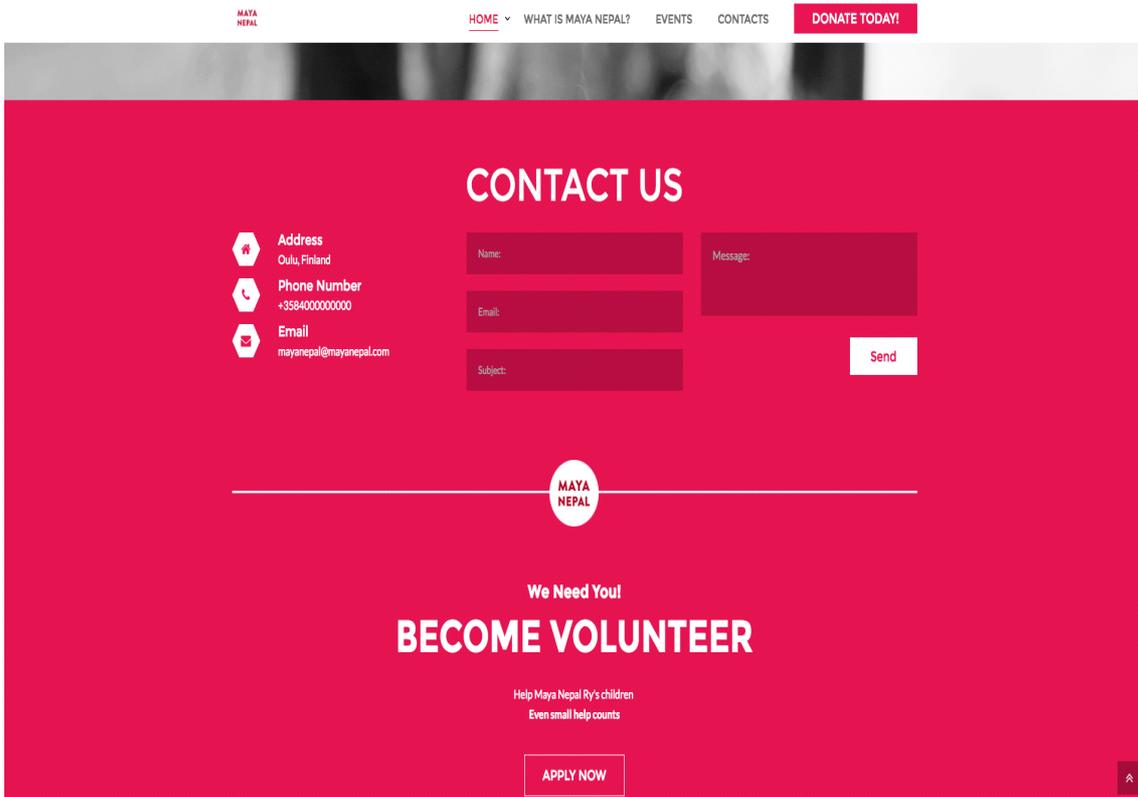


FIGURE 22. The base of the footer part of the webpage with contact info

Above there were some of the screenshots of the web application. On the top of the website, there are links to Facebook, Instagram and Twitter. The login form is also on the top right corner of the page. The contact navigation bar is on the top of the page. The navigation bar on the top remains fixed even when the page is scrolled. The page includes stories of the Maya Nepal, testimonials, recent news and a contact request part. A new idea is that even if the charity shop is a separate website, the data and the products appear in this charity sale part. But after the backend work, this service comes in function.

Mobile view

Some of the screenshots from the mobile view are as follows:

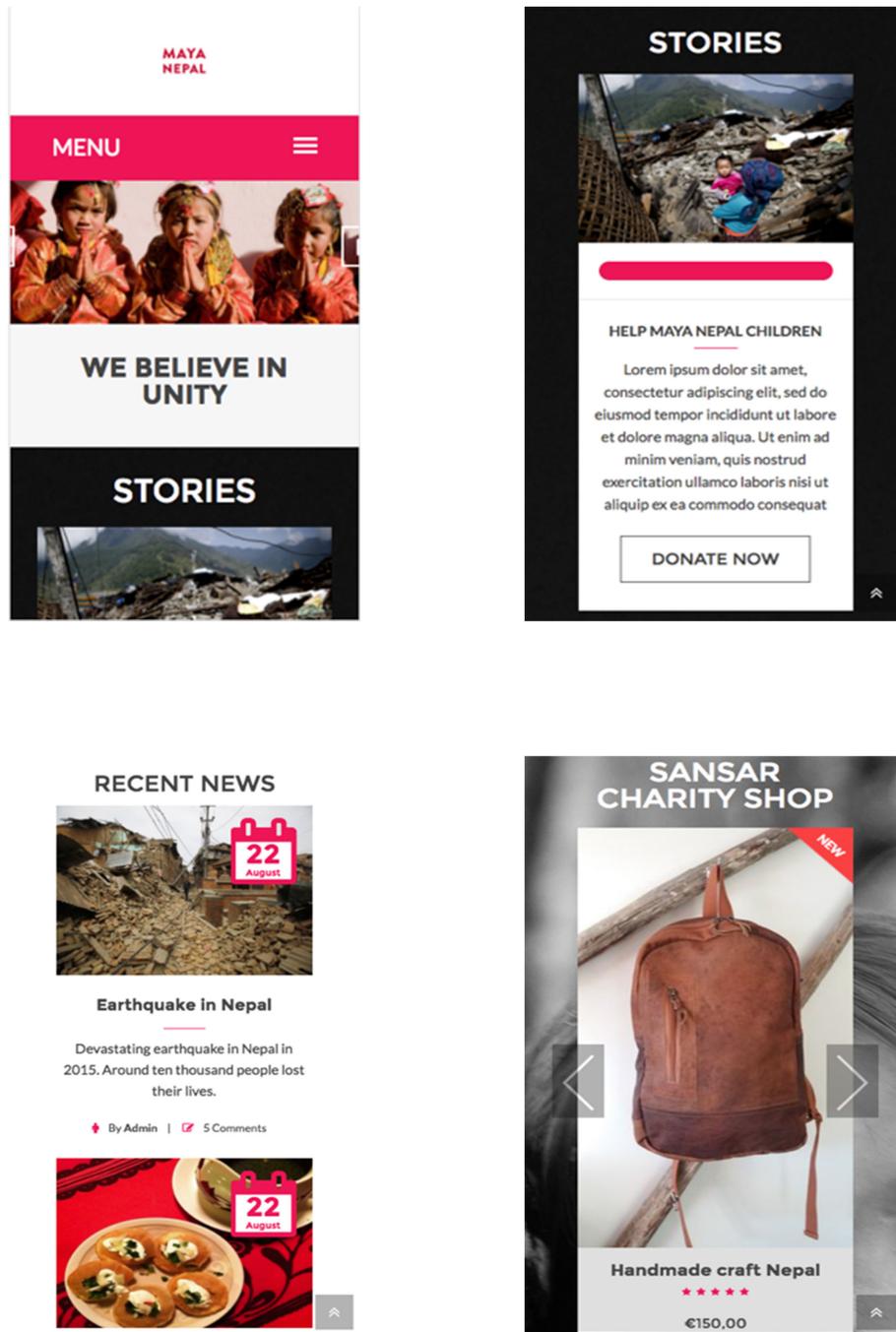


FIGURE 23. Mobile screenshots taken from the web application

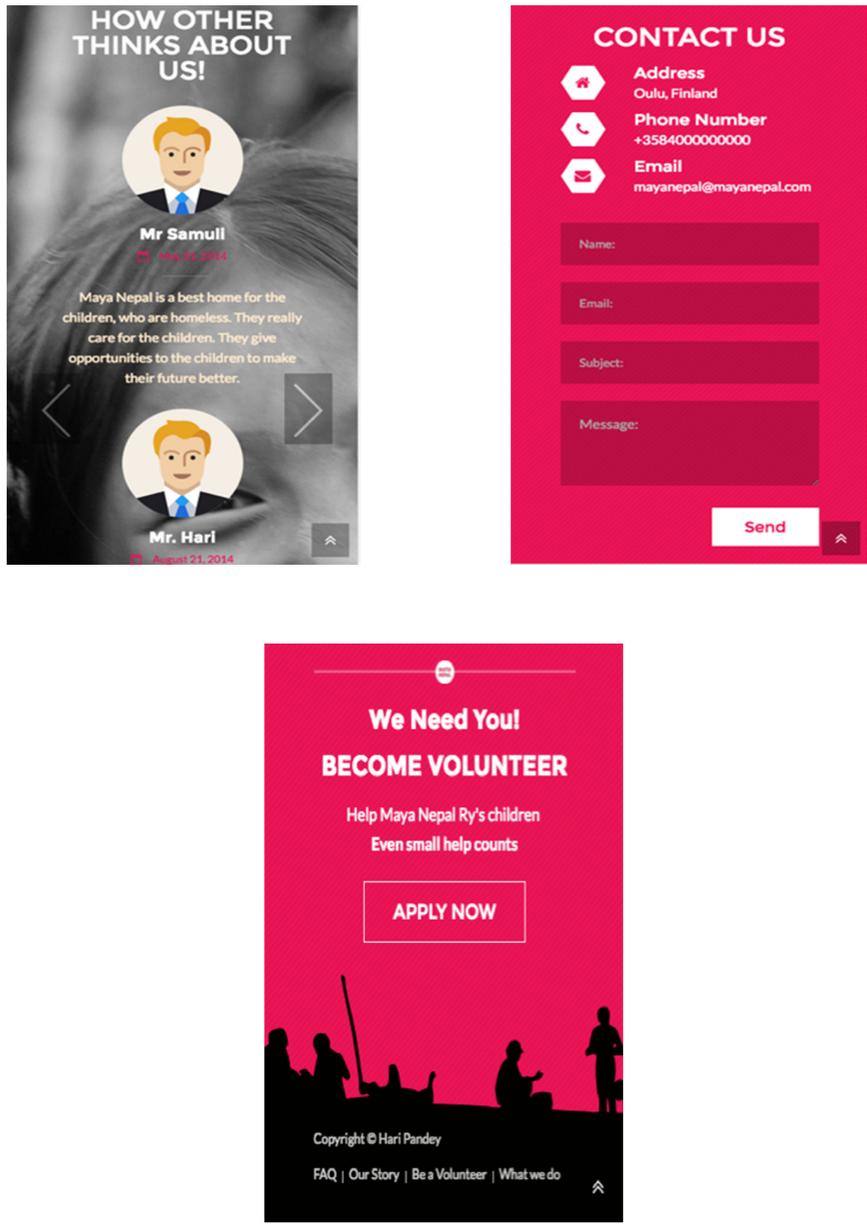


FIGURE 24. Mobile screenshots taken from the web application

So, the images above were the screenshot taken from the smartphone while using the web application.

7 CONCLUSION AND DISCUSSION

Finally, after the long process of development, the result was obtained. Although the web application's UI is ready, the further development will be continuing even after this project. Even though there were difficulties during the progress process, the result was as expected. The target/aim of this project has been fulfilled. Now, the new web application has overcome all the problems. One of the problem with the previous website was that it had an irresponsive user interface. Now it has been solved. Since the new web application is made with the Bootstrap framework, it has a very responsive design. It sets itself according to the device and the screen size, which is being used to browse this web application. Another problem was with the confusing structure of the information placed. Now there are limited navigation bars and an exact information platform. And this problem has also been solved.

The third problem with the previous website was with the error showing. When a user was trying to browse this website and if there was a mistake, then the website did not show any error message so that the user would know what is actually happening. But in the new application, it will give an error code and redirect to the error page so that the user knows more about the situation. The new web application has been made user-friendly and also mobile friendly with a responsive design. In overall context, I think the new web application has the quality and the functionality according to the client's demand. Finally, the decision to use the tools such as Bootstrap as a framework and brackets as a text editor was a good idea. It was very time saving and simple to learn. To anyone who will be doing a similar kind of project, I would like to recommend these tool.

For the further development, I have studied and want to mention about the backend development. It would be easier for the next project to start or to continue this project if the hints are written here. Therefore, basically the login form can be easily done with PHP and a database. For the charity shop part, a foreign database can be accessed in the same way as a normal database is accessed. All the images and script files are found in the respective project folder, which is managed in an easy-to-find way.

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9 APPENDICES

Appendix 1 Initiation document of Bachelor's thesis

INITIATION DOCUMENT OF A BACHELOR'S THESIS

Author Hari Pandey, DPI2SN, Oulu UAS

Customer Maya Nepal Ry

Customer's contact person and information Johanna Heikkilä

Johanna.heikkila@terapeija.fi, +358(0)44 0841510

Title **WEB APPLICATION DEVELOPMENT FOR MAYA NEPAL RY**

Description Maya Nepal Ry, the association, I am developing a website for, is an association in Nepal which helps orphan children, rescued victim children by providing them home and education. Providing them a better future.

Website that exist now has some usability problems including user control and freedom, flexibility and efficiency of use and etc. Additionally, it's not mobile friendly. Website hasn't been updated since long time and a lot of extra information is available and important information are missing.

Since I had to do my Bachelor's thesis I choose this application development work. Because I felt that I will get chance to learn more about application development tools and different ways to do things.

Objectives According to the client application should be dynamic, user friendly, easy to find things. Work is to be done in day-to-day contact basis with the client. Basic idea for the new website is given by the client with some reference websites.

The main objective for this project is to create a new application, taking the previous problems in consideration. Problems with the existing website when heuristic evaluation was done are:

- Consistency and standard, is one of the factor. Because in the existing website there are some confusing heading and eventually their meanings are almost same.
- It also contains rarely needed information, which results webpage to be heavy and slow to response.
- Difficulty in finding the desired information within short time period.

Other objectives in my personal view are:

- Making website user friendly, easy to find the information.
- Responsive and mobile friendly.

Target schedule Project plan and requirement gathering and research (deadline 22.9)

Design (deadline 30.9)

Implementation (starts right after when design is ready deadline 18.11)

User trial (22-23.11)

Results presentation with company and school both by 24.11

Thesis 0.1 version submission by 3.12

Date and signatures 15.9.2016 HARI PANDEY