

UNIVERSITY OF SOUTHEASTERN NORWAY

WEB SCIENCE DWS2201

Røa barneskole

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Contents

1	Introduction	2
1.1	The assignment	2
1.2	Objective	2
1.3	Customer specification	3
2	Use of hardware and software	4
3	Implementation	5
3.1	My database	5
3.1.1	Table 1: Users	5
3.1.2	Table 2: List	6
3.2	My web application	7
3.2.1	Index page	7
3.2.2	Login/Register	8
3.2.3	Dashboard	9
3.2.4	Profile	10
3.2.5	List	10
3.2.6	Blog	13
4	Concluding the assignment	15
5	My source code and references	16

Chapter 1

Introduction

1.1 The assignment

The assignment is to make a website of any choice. It could range anywhere from a CV to an application a customer wants you to make. Some requirements include that the website should have a login function and that it has to be dynamic. Furthermore, the user should be able to change and delete data without needing to edit the code. The goal is to gain a greater understanding of web development through this assignment.

1.2 Objective

My idea is to make a web application for a project in the subject, systems engineering. The project case there is to design the energy system for a school, using renewable energy. I had no other cool idea for a website, so i decided to go with this, considering this project would be useful in both subjects.

I want to make a web application for Røa barneskole. The idea is for the students between grades one through seven to login and view information relevant to their school day.

The index page will have a simple navigation bar at the top, where the user can browse and read about the school technology, the building process and information for parents and pupils. Finishing the index page will be a carousel containing pictures of the school which will get updated daily.

Furthermore, there will be a register and login function where the students can get information they need about their school day.

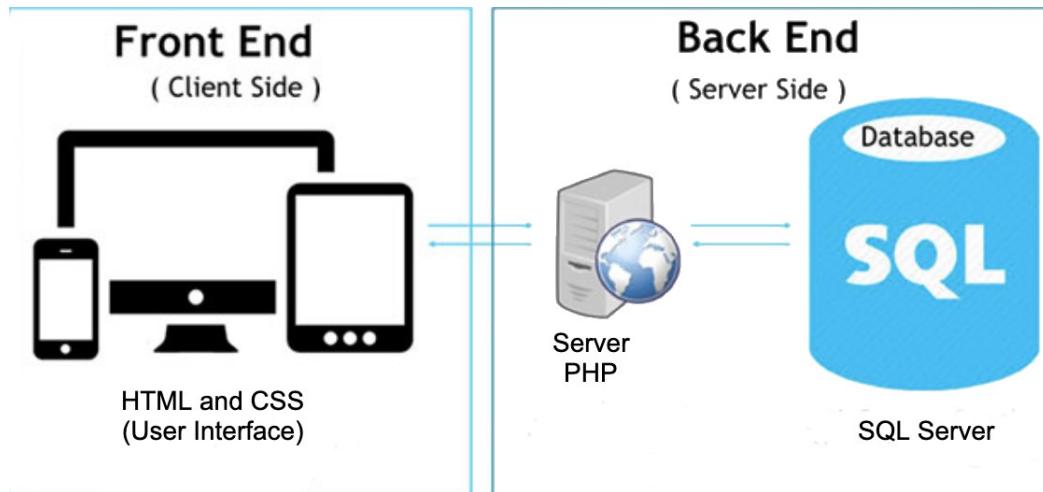
1.3 Customer specification

The perspective I'm making the website from is one where Oslo commune wants me to make a website for the school where the pupils can log in and do everyday school activities. The commune also wants me to highlight the modern technology and environmentally friendly solutions used during construction in order to attract attention to the site. An important requirement from the customer is that the system should be user friendly. It tells me that the application should be easy to navigate considering the range of ages will be from six to thirteen years old. Furthermore, the application should be filled with predictable clicks and clear text and colours. Another requirement is regarding safety. The customer wants me to design a secure login/register system in order to ensure data privacy.

Chapter 2

Use of hardware and software

The web application will run on my personal computer using the local server XAMPP. As for the software I will be using several programming languages. For front-end, i will use CSS, HTML and for the backend i will use PHP. The applications i used for these languages was Sublime text editor and phpmyadmin. Sublime makes it easy to write structured code and phpmyadmin is a no brainer because it allows you to run queries or simply make a database by the click of a few buttons.



Chapter 3

Implementation

3.1 My database

3.1.1 Table 1: Users

For the login/registration system i needed to create a table for the users. The users in this scenario is meant to be the students, and they need to register their name, email and password

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
username	varchar(50)	NO		NULL	
password	varchar(255)	NO		NULL	
email	varchar(100)	NO		NULL	

My table consist of 4 rows, the student's full name, school email and their password. A requirement from the customer is that the system should be secure, and for that i decided to use the password_hash function which will encrypt the user's password using the one-way algorithm. As you can see, this will prevent the users passwords from being exposed if any unfortunate situation would occur.

			id	username	password	email
<input type="checkbox"/>			21	mario	\$2y\$10\$fltqH/qBtrJdW3/K.184BuKZfkrFjcEDT1nWNBRyP2g...	mario@hotmail.com
<input type="checkbox"/>			22	iqbal	\$2y\$10\$SPiJATDgwyapcFNsmgV6tuhmqXpPVPSWuxQLuDwADrb...	iqbal@hotmail.com

3.1.2 Table 2: List

This table is for listing whatever the student want their blog to be about. In this case, the student Mario is really interested in movies, so this table allows him to keep a track of the movies he's watched or going to watch and review in his blog.

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
title	varchar(255)	NO		NULL	
genre	varchar(255)	NO		NULL	
description	text	NO		NULL	

The table consists of rows, the primary key id, the movie title. What genre the movie is and a quick description at the end

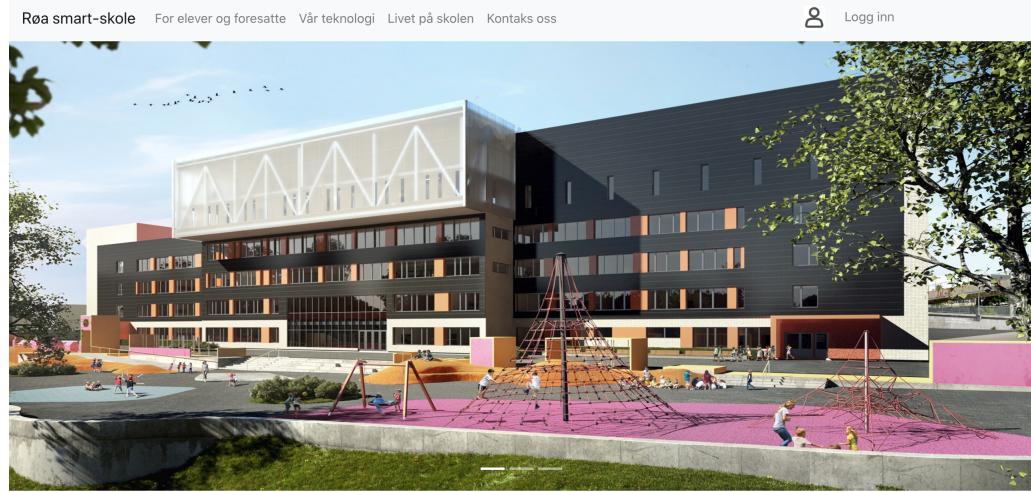
	Rediger	Kopier	Slett	id	title	genre	description
<input type="checkbox"/>				4	The Godfather	Gangstermovie	goat
<input type="checkbox"/>				5	Parasite	Drama, thriller and mystery	straight fire
<input type="checkbox"/>				6	Dunkirk	Warmovie	dubbb
<input type="checkbox"/>				7	Joker	Drama	underlying social commentary?
<input type="checkbox"/>				8	1917	Warmovie	One of my favourites this year
<input type="checkbox"/>				10	Knives out	Comedy and crime	Underwhelming

3.2 My web application

3.2.1 Index page

The first thing a user sees when he/she enters the website is the index page. And for the school it should be easy to navigate and gain information. To show the attributes of the school building, I included a carousel highlighting the school building. From the navigation bar, anyone can brows and read more about the school, its technology and so on.





192.168.64.2/azim/index.php

3.2.2 Login/Register

From the navigation bar, the user can click the log inn button which will lead to this page. Here the user can choose to log in or register a new account.

Røa smart-skole For elever og foresatte Vår teknologi Livet på skolen Kontaks oss

Logg inn

Fullt navn:

Password:

submit

Har du ingen bruker? Registrer deg her

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Here the students can register for a new account, inputting their name, email and password

Registrer bruker

Fult navn:

Email adresse:

Password:

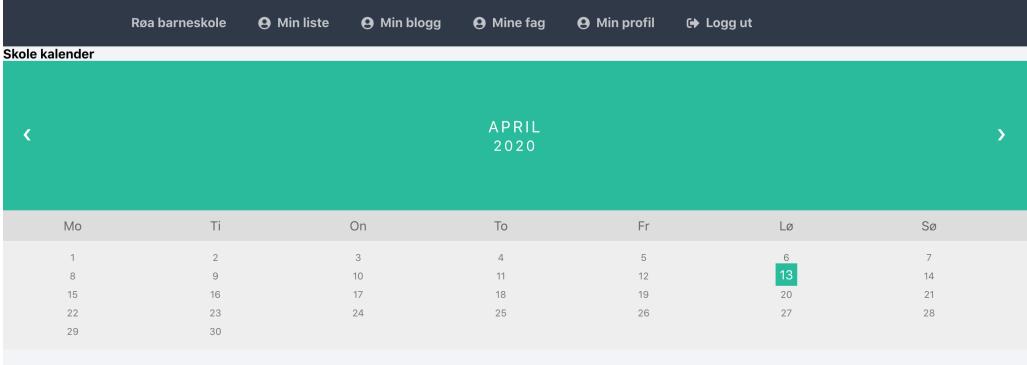
[Register](#)

[Har du en bruker? Logg inn her](#)

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3.2.3 Dashboard

This is the page that meets the user once they have logged in. From the dashboard page I can even add more relevant information or even customize the current calendar so that the students can update it themselves eventually.



The screenshot shows the Røa barneskole dashboard. At the top, there is a navigation bar with links: Røa barneskole, Min liste, Min blogg, Mine fag, Min profil, and Logg ut. Below the navigation bar is a section titled "Skole kalender". In the center, it displays the month of April 2020. The days of the week are labeled Mo, Ti, On, To, Fr, Lø, and Sø. The dates are arranged as follows: Row 1: 1, 2, 3, 4, 5, 6, 7; Row 2: 8, 9, 10, 11, 12, 13, 14; Row 3: 15, 16, 17, 18, 19, 20, 21; Row 4: 22, 23, 24, 25, 26, 27, 28; Row 5: 29, 30. The date 13 is highlighted with a green background and a white border.

3.2.4 Profile

This page allows the user to see their information, such as username and email, the password is encrypted here as well for security purposes.

Din profil

Profil detaljer:

Fullt navn: mario
Passord: \$2y\$10\$fltqH/qBtrJdW3/K.184BuKZfkrFjcEDT1nWNBRyP2gUl2sSlc6mm
Email adresse: mario@hotmail.com

3.2.5 List

This is a simple CRUD list. In other words, the user can create, view, update and delete data. At this point in making the website, I could have fun with which way i wanted to go. Amongst the things i considered was a messaging system, but in the end i decided to add a blog segment/part to the site. The idea is that the students can improve their reading and writing abilities through simple blog posts about whatever interest they have. In this case, the student Mario is all about movies. This page helps Mario keep a list of all the movies he's watched, and planning on making a blog post about.

Mario's movie list			
Legg til			
Tittel	Sjanger	Beskrivelse	Oppdater
Knives out	Komedie og krim	Meeeehhhhh	Edit Delete
1917	Krigsfilm	Fantastisk kino opplevelse	Edit Delete
Joker	Drama	Veldig annerledes	Edit Delete
Dunkirk	Krigsfilm	Nydelig regissert	Edit Delete
Parasite	Drama, thriller og mysterie	Dritbra	Edit Delete
The Godfather I	Gangster	Evig klassiker	Edit Delete

By clicking the edit button on the right hand side, the user will be directed to a new page as shown below where he/she can update the list. And after the user has updated, it will redirect to the original page with the update done. Here I'm showing an example by taking the first row, and editing the description

Home

Title	<input type="text" value="Knives out"/>
Genre	<input type="text" value="Komedie og krim"/>
Description	<input type="text" value="Helt ok"/>
	<input type="button" value="Update"/>

After editing I see that the list has been updated:

[Gå tilbake](#)

Mario's movie list

[Legg til](#)

Tittel	Sjanger	Beskrivelse	Oppdater
Knives out	Komedie og krim	Helt ok	Edit Delete
1917	Krigsfilm	Fantastisk kino opplevelse	Edit Delete
Joker	Drama	Veldig annerledes	Edit Delete
Dunkirk	Krigsfilm	Nydelig regissert	Edit Delete
Parasite	Drama, thriller og mysterie	Dritbra	Edit Delete
The Godfather I	Gangster	Evig klassiker	Edit Delete

The user also has the option to delete a row at any time. Here I'm showing an example by deleting the last row

Are you sure you want to delete?

[Avbryt](#) [OK](#)

Mario's movie list

[Legg til](#)

Tittel	Sjanger	Beskrivelse	Oppdater
Knives out	Komedie og krim	Helt ok	Edit Delete
1917	Krigsfilm	Fantastisk kino opplevelse	Edit Delete
Joker	Drama	Veldig annerledes	Edit Delete
Dunkirk	Krigsfilm	Nydelig regissert	Edit Delete
Parasite	Drama, thriller og mysterie	Dritbra	Edit Delete
The Godfather I	Gangster	Evig klassiker	Edit Delete

After deleting the last row:

[Gå tilbake](#)

Mario's movie list

[Legg til](#)

Tittel	Sjanger	Beskrivelse	Oppdater
Knives out	Komedie og krim	Helt ok	Edit Delete
1917	Krigsfilm	Fantastisk kino opplevelse	Edit Delete
Joker	Drama	Veldig annerledes	Edit Delete
Dunkirk	Krigsfilm	Nydelig regissert	Edit Delete
Parasite	Drama, thriller og mysterie	Dritbra	Edit Delete

3.2.6 Blog

I haven't finished this part yet, it turns out that the php code is more comprehensive than I first imagined, so there is still a little work to be done. But the idea is that this page will show blog posts from the students.

[Gå tilbake](#)

Mario's BLOGG

Velkommen til min blogg



Om meg

Hei! Jeg heter Mario! Jeg liker å se på filmer og snakke om dem.

Populære blogginnlegg

- 1917
Må sees!
- Joker
En annerledes opplevelse
- Knives out
Skuffende

Continuing the same page:

Parasite

April 13, 2020

Parasite vant beste film i 2019, og nå vet jeg hvorfor...

[LES MER »](#)



Finishing off the page:



Gudfaren

April 13, 2020

Jeg så endelig på Gudfaren!

[LES MER »](#)

[Forrige side](#)

[Neste side »](#)

Chapter 4

Concluding the assignment

Overall I'm satisfied with the web application. I believe i fulfilled the requirements for the assignment and requirements for the customer. The idea was that i could use this project in both my subjects, and I will be able to do that now. Having said that, I know there is still so much i can do and improve on with this website, especially the page where the blog posts are.

I wanted to have fun with this, and I honestly did. Considering I've had far more experience with object oriented programming languages, this was something different, not only for developing my skills in web development, but also for our exam, where queries and understanding of tables is crucial.

Chapter 5

My source code and references

Considering that the source code is quite extensive, I decided to post it on my GitHub. It can be found at: <https://github.com/azimiqbal/WebScience>

For my references I used several tutorials from different websites. We were advised early on that the focus should be on the back end, not styling and spending time on CSS. For that purpose I used the bootstrap framework, and found several templates online that were helpful. I also found a helpful tutorial for my login system which is linked down below:

Bootstrap template for my carousel:

https://www.w3schools.com/bootstrap/bootstrap_carousel.asp

Bootstrap template for login form:

<https://bootsnipp.com/snippets/bxzmb>

For navbar:

<https://getbootstrap.com/docs/4.0/examples/navbars/>

For registration:

<https://codeshack.io/secure-registration-system-php-mysql/#validatingformdata>

For CRUD list:

<https://www.tutorialrepublic.com/php-tutorial/php-mysql-crud-application.php>

For use of orderby in SQL:

https://www.w3schools.com/sql/sql_orderby.asp

For usage of ? in SQL:

<https://stackoverflow.com/questions/3727688/what-does-a-question-mark-represent-in-sql>

