Back – End development

block 2

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## Abstract

It is a step-by-step explanation of how to build a fully functional database.

And, yeah, it looks like magic…

A picture containing text, window, indoor, building

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# Introduction

The report will cover aspects of using PHP, SQL and basic HTML/CSS in order to create a website and link it to the database.

The report will include the tools that are used, the techniques and step by step development process of connection and deployment of the website and the database.

# Er Diagram

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# Tools Used

### PHP

Hypertext Preprocessor, commonly known as PHP is widely used for developing interactive websites.

By using PHP, it is possible to create complex functions that make the website more functional and convenient to use.

However, the implementation of PHP is far beyond just adding functions, as it can connect the website to a certain database, to store user information and meta data in it.

### Why PHP?

#### Community

Since PHP have been used for many years, it is obvious that during those years it has built a strong community of developers, which means there is a plenty of support and navigation, especially for beginners.

Also, most jobs require PHP as it is a well-known language, so the implementation of it is beneficial for the future career.

#### Open Code

Well, being open source has lots of advantages:

* Security
* Free use
* Lots of Frameworks
* Constant Updates

(Mino, 2021)

#### Flexible/Versatile

PHP is able to connect to any database, can be used with different Operational Systems (MacOS, Windows, Linux), and supported on most of the well-known browsers. (Mino, 2021)

### SQL

Structured Query Language (SQL) is a standard language to work with different types of data.

Data stored can come from a certain website or a server, or can be passed to another server/website. Basically, keeps a connection between servers through database.

For the current project, MySQL database system is used to interact with between website and a database.

### Why MySQL?

Although MySQL has lots of competitors, it can represent strong advantages, that is superior than other databases.

* Superior Security
* On-Demand Flexibility
* High Performance
* Usability & Control
* Open Source

(Datamation, 2016)

### HTML/CSS

HTML and CSS will be used in order to give a website a decent structure and design, for a better User Experience and easy navigation.

### Linux

We will be using Linux OS in order to access the Web-Server, by the use of Command Line. It is one of the important steps, and must be done in order to deploy the website to the outer web.

### Why Linux?

Again, popularity gives Linux bigger community and more features for implementing the web-hosting. (www.hostgator.com, n.d.)

### Git/GitHub

Git will mostly be used to transfer data, such as files and directories from the local machine to the web-server, and a Github is sort of a bridge to temporarily store data and update it, and eventually send the final result to the server.

# Development Process

### Code

First off, HTML is used for creating the structure of the website, and different webpages that interact with the database.

CSS is used to make the website interactive and easier to use.

Also there is some Bootstrap framework used, again for the better performance.

### SQL-Server

With the use of SQL the database is created, followed by tables and rows inside them, to make sure the data is allocated correctly.

The primary and foreign keys have to be put in order to create connections with other tables.

### Connection

The php comes into place in connecting the website with the database using keywords and names, which can be referred to when calling some function or data.

The most important thing that has to be in order to connect website and database, is to put a query that defines host and database name.

After that it is possible to create other SQL queries like to add or delete chosen data.

### Web-Server

In order to put up the working website and the database to the outer web the server is a must aspect.

First off, the Linux machine should be started. After that, the plugins for the server and database should be installed.

Meanwhile, the domain name should be connected to the machine in order to access it

After all of that is done, it is time to import files into the server for the website to show up.

# Functionality

### Data Input

Using basic HTML, the form with inputs should be created. Each input has it’s own parameters set up, which will be linked to the same parameters and rows in database, so that the data in the inputs are sent into the right place.

Then it will possible to take out the same data to pop up in the tables, which can be viewed in “View” pages

### Form Validation

In order to ensure that the user is inserting correct data, there should be the code that checks if the inserted data is eligible, and if the characters are set correctly.

It can be done by creating a function in PHP that checks if characters are set appropriately, and also if there is an empty input or not, eventually giving out an error if something is wrong.

### Code Validation

To make sure that the overall code syntax correct or if there are any broken links, there are some code validation websites, that show any possible errors in code.

# References

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The one and only website:

https://astroworld.saxtons.org.uk