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*Capable People, Capable Communities*

**Micro-Credentials in Software Development**

**Certificate in Software Development**

**MCSD51**

**Project Report**

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Executive Summary

In this project, we developed a web application to generate password. We used basic HTML, CSS, Embedded JavaScript, Node.JS and JavaScript to develop this app. This is a self-sponsored, individual project developed in an iterative manner. We created the Use Cases and User Stories based on our personal knowledge and experience related to water safety.

# Introduction

Why we need a password generator.

The number of people who get into trouble, and even lose their lives, in water in Aotearoa New Zealand is quite high as a proportion of the population. We have a very long coastline and treacherous rip currents at many beaches. Not many people, especially recent migrants, are not aware of the dangers of rip currents.

I have personally seen many rescues and even helped people get to safety. I am aware that there is a national website (<https://watersafety.org.nz/>) that helps promote water safety in New Zealand but not many people seem to be aware of its existence or use it to educate themselves.

# Initial Proposal

The next few pages are the Initial Proposal, provided here for easy reference.

# Variations From The Initial Proposal

Changes for proposal need be here.

I added the following extra features.

* Graph of deaths
* Links to videos on rip currents

I did not implement the Search functionality due to time constraints.

# Tools and Technologies Used (in alphabetical order)

* CSS
* Cookies
* EJS
* Express.js
* HTML
* JavaScript
* Node.js
* XAMPP - Apache
* Notepad++ / Edit plus

# SDLC

Water fall

As planned during the proposal stage, the incremental/ iterative methodology worked with more features and functionality added and tested at every stage.

# Project timeline

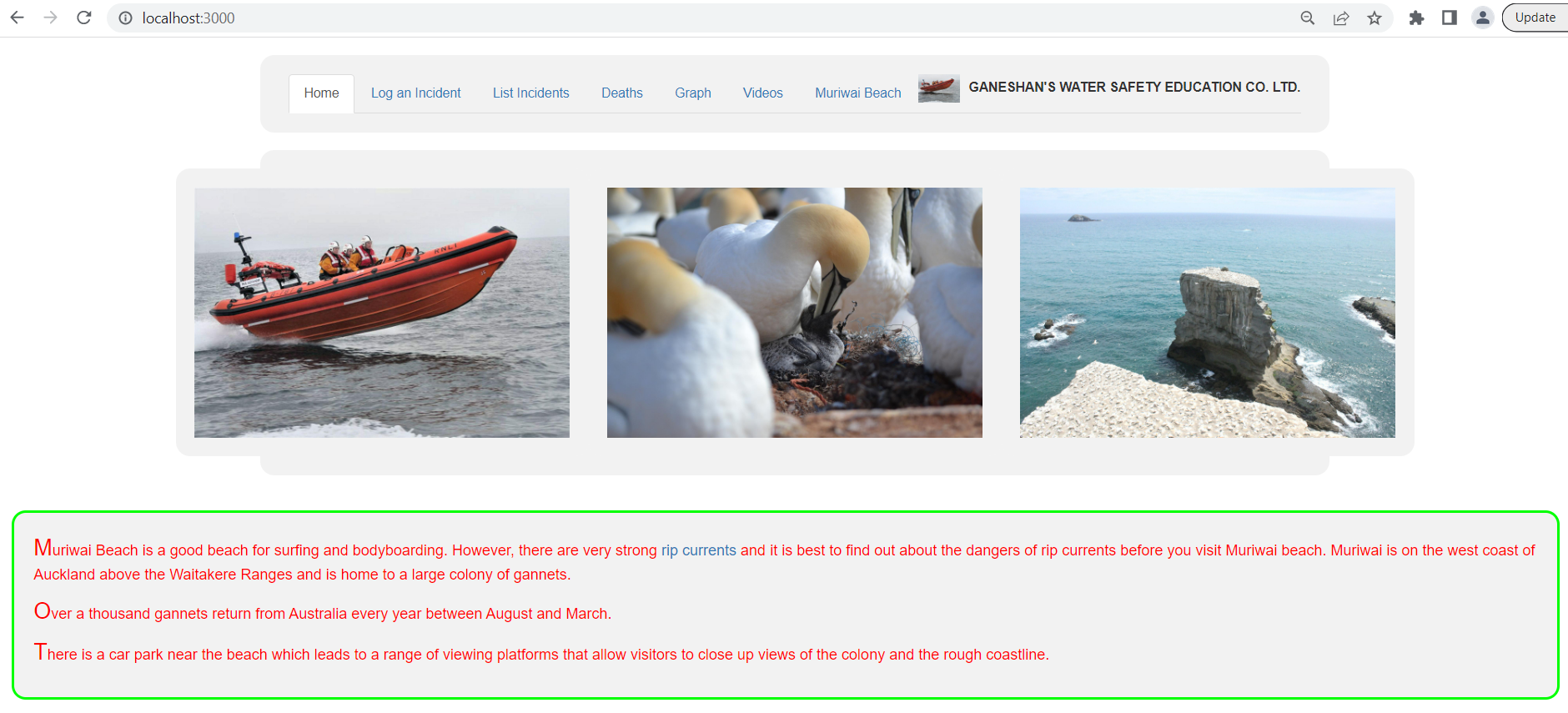
We have changed it…..

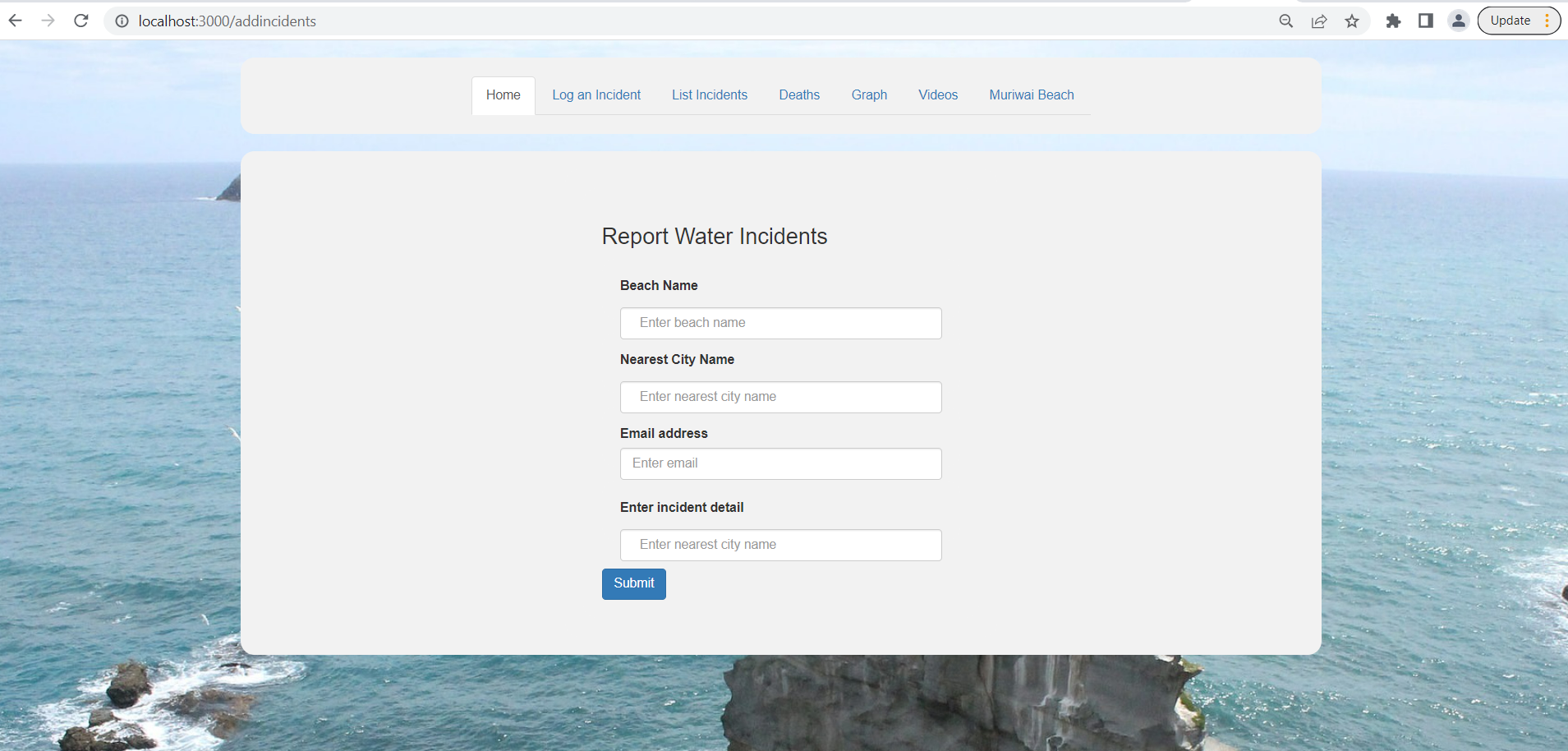
I pretty much followed the planned timeline as in the proposal.

# Ethical and cultural impact

As discussed in the Proposal, this project can impact the community by raising awareness of water safety.

# Selected Screenshots of the completed App





Graphical user interface, application, table

Description automatically generated

Chart

Description automatically generated

A picture containing text, indoor, screenshot, different

Description automatically generated

# Reflection

I started with very little knowledge in web app development. By doing this project I learned how to use basic HTML, CSS, Bootstrap, MYSQL, Node.JS and JavaScript. I am aware that there is much more to learn. I also learned about Use Cases and improved my project and time management skills. The learning environment was good and collaborative with people helping each other.

If I am to do this project or a similar project again, I will…………..

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# Appendix: Code

**server.js**

var express = require('express');

var path = require('path');

var cookieParser = require('cookie-parser');

var bodyParser = require('body-parser');

var flash = require('express-flash');

var session = require('express-session');

var db=require('./dbConfig');

var app = express();

// view engine setup

app.set('views', path.join(\_\_dirname, 'views'));

app.set('view engine', 'ejs');

app.use(express.json());

app.use(express.urlencoded({ extended: false }));

app.use(cookieParser());

app.use(express.static(path.join(\_\_dirname, 'public')));

/\* GET home page. \*/

app.get('/', function(req, res, next) {

res.render('home', { title: 'Home' });

});

app.get('/videos', function(req, res, next) {

res.render('videos', { title: 'Videos' });

});

app.get('/addIncidents', function(req, res, next) {

res.render('addIncidents', { title: 'Home' });

});

app.get('/getIncidents', function(req, res){

db.query("SELECT \* FROM incidents", function (err, result) {

if (err) throw err;

console.log(result);

res.render('getIncidents', { title: 'xyz', incidentData: result});

});

});

app.get('/deaths', function(req, res){

db.query("SELECT \* FROM deaths", function (err, result) {

if (err) throw err;

console.log(result);

res.render('deaths', { title: 'xyp', deathData: result});

});

});

app.get('/graph', function(req, res){

db.query("SELECT \* FROM deaths", function (err, result) {

if (err) throw err;

console.log(result);

res.render('graph', { title: 'graph', graphData: result});

});

});

app.post('/addIncidents', function(req, res, next) {

var beach = req.body.beach;

var city = req.body.city;

var email = req.body.email;

var detail = req.body.detail;

var sql = `INSERT INTO incidents (beach, city, email, detail, reported\_at) VALUES ("${beach}", "${city}", "${email}", "${detail}", NOW())`;

db.query(sql, function(err, result) {

if (err) throw err;

console.log('record inserted');

req.flash('success', 'Data added successfully!');

res.render('addIncidents');

});

});

// port must be set to 3000 because incoming http requests are routed from port 80 to port 8080

app.listen(3000);

console.log('Node app is running on port 3000');

module.exports = app;

**views/home.ejs**

<!DOCTYPE html>

<html lang="en">

<head>

<title>Water incident reporting</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">

<link href= "/stylesheets/style.css" rel="stylesheet" type="text/css" />

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>

</head>

<body>

<div class="container">

<ul class="nav nav-tabs" role="tablist">

<li class="active"><a href=/>Home</a></li>

<li><a href=addincidents>Log an Incident</a></li>

<li><a href=getincidents>List Incidents</a></li>

<li><a href = "https://westauckland.co.nz/beaches/muriwai-beach"/>Muriwai Beach</a></li>

</ul>

</div>

<div class="container">

<div id ="leftbox">

<a href="https://en.wikipedia.org/wiki/Muriwai">

<img src="images/muriwai1.jpg" width="400px" alt ="Gannets at Muriwai, Auckland">

</a>

</div>

<div id="middlebox">

<a href="https://en.wikipedia.org/wiki/Gannet">

<img src="images/gannets.jpg" width="400px" alt ="Gannets at Muriwai, Auckland">

</a>

</div>

<div id="middlebox">

<a href="http://www.windsurf.co.nz/windsurf\_cam\_muriwai.asp">

<img src="images/muriwai2.jpg" width="400px" alt ="Gannets at Muriwai, Auckland">

</a>

</div>

</div>

<div id="divHome">

<p>

Muriwai Beach is a good beach for surfing and bodyboarding.

However, there are very strong

<a href="pages\ripcurrents.html">rip currents</a> and it is best to

find out about the dangers of rip currents before you visit

Muriwai beach. Muriwai is on the west coast of Auckland

above the Waitakere Ranges and is home to a large colony

of gannets.

</p>

<p>

Over a thousand gannets return from Australia every year

between August and March.

</p>

<p>

There is a car park near the beach which leads

to a range of viewing platforms that allow visitors

to close up views of the colony and the rough coastline.

</p>

</div>

</body>

</html>

**views/addIncidents.ejs**

<!DOCTYPE html>

<html lang="en">

<head>

<title>Water incident reporting</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link href= "/stylesheets/style.css" rel="stylesheet" type="text/css" />

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

</head>

<body>

<div class="container">

<ul class="nav nav-tabs" role="tablist">

<li class="active"><a href=/>Home</a></li>

<li><a href=addincidents>Log an Incident</a></li>

<li><a href=getincidents>List Incidents</a></li>

<li><a href = "https://westauckland.co.nz/beaches/muriwai-beach"/>Muriwai Beach</a></li>

</ul>

</div>

<div class="container mt-4">

<div class="card">

<div class="card-body">

<h3>Report Water Incidents</h3>

<form method="POST">

<div class="form-group">

<label for="beach">Beach Name</label>

<input type="text" class="form-control col-lg-9" id="beach" aria-describedby="emailHelp" placeholder="Enter beach name" name="beach">

</div>

<div class="form-group">

<label for="city">Nearest City Name</label>

<input type="text" class="form-control col-lg-9" id="city" aria-describedby="emailHelp" placeholder="Enter nearest city name" name="city">

</div>

<div class="form-group">

<label for="email">Email address</label>

<input type="email" class="form-control col-lg-9" id="email" aria-describedby="emailHelp" name="email" placeholder="Enter email">

</div>

<div class="form-group">

<label for="detail">Enter incident detail</label>

<input type="text" class="form-control col-lg-9" id="detail" aria-describedby="emailHelp" placeholder="Enter nearest city name" name="detail">

</div>

<button type="submit" class="btn btn-primary">Submit</button>

</form>

</div>

</div>

</body>

</html>

**views/getIncidents.ejs**

<!DOCTYPE html>

<head>

<title>Incidents</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">

<link href= "/stylesheets/style.css" rel="stylesheet" type="text/css" />

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>

</head>

<body>

<div class="container">

<ul class="nav nav-tabs" role="tablist">

<li class="active"><a href=/>Home</a></li>

<li><a href=addincidents>Log an Incident</a></li>

<li><a href=getincidents>List Incidents</a></li>

<li><a href = "https://westauckland.co.nz/beaches/muriwai-beach"/>Muriwai Beach</a></li>

</ul>

</div>

<div id="divGet">

<table>

<tr>

<th>ID</th>

<th>Beach</th>

<th>City</th>

<th>Contact</th>

<th>Detail</th>

</tr>

<% if (incidentData.length !=0) {var i=1; incidentData.forEach( function(data) {

%>

<tr>

<td><%=data.id %></td>

<td><%=data.beach %></td>

<td><%=data.city %></td>

<td><%=data.email %></td>

<td><%=data.detail %></td>

</tr>

<% i++; }) %> <%}%>

</table>

</div>

</body>

</html>

**public/stylesheets/style.css**

body {

background-image: url("paper.gif");

background-color: #e4f5cb;

}

h1 {

text-align: centre;

color: blue;

}

p {

color: red;

font-size: 16px;

}

p::first-letter {

font-size: 150%;

font-style: bold;

}

table {

border-collapse: collapse;

width: 38%;

}

th, td {

padding: 10px;

text-align: center;

border-bottom: 2px solid #ddd;

}

th {

background-color: yellow;

}

tr:hover {background-color: lime;}

div {

border-radius: 15px;

background-color: #f2f2f2;

padding: 20px;

}

#divHome

{

border: 3px solid #00ff00;

margin: 1cm 1cm 1cm 0.5cm;

}

#divGet

{

border: 4px solid #FF0000;

border-radius: 15px;

background-color: #f2f2f2;

padding: 20px;

display: flex;

justify-content: center;

}

#myChart

{

border: 4px solid #FF0000;

border-radius: 15px;

background-color: #f2f2f2;

padding: 20px;

display: flex;

justify-content: center;

}

input[type=text], select {

width: 100%;

padding: 12px 20px;

margin: 8px 0;

display: inline-block;

border: 1px solid #ccc;

border-radius: 4px;

box-sizing: border-box;

}

#leftbox {

float:left;

width:40%;

}

#middlebox{

float:left;

width:50%;

}

#rightbox{

float:right;

width:25%;

}

.container {

display: flex;

justify-content: center;

margin: 0.5cm 1cm 0.5cm 0.5cm;

}

.center {

display: flex;

margin: auto;

width: 60%;

border: 3px solid #73AD21;

padding: 10px;

}