IoT Based Real Time Monitoring for Secure

Operation for EV

# SAMPLE CODING

**Code for Real-Time Monitoring and Cloud Data Upload in Electric Vehicle System**

#include <xc.h>

#define \_XTAL\_FREQ 8000000 #define motor\_pin PORTBbits.RB0

#define water\_sensor\_pin PORTAbits.RA0 #define smoke\_sensor\_pin PORTAbits.RA1 #define temp\_sensor\_pin 0

void UART\_Init();

void UART\_SendString(const char \*data); void ADC\_Init();

unsigned int ADC\_Read(unsigned char channel); void LCD\_Init();

void LCD\_Display(char \*data); void main() {

TRISA = 0xFF; TRISB = 0x00;

ADC\_Init(); UART\_Init(); LCD\_Init();

while(1) {

unsigned int temp\_value = ADC\_Read(temp\_sensor\_pin);

unsigned int water\_status = water\_sensor\_pin; unsigned int smoke\_status = smoke\_sensor\_pin;

LCD\_Display("Temp:"); LCD\_Display(temp\_value);

UART\_SendString("Temp="); UART\_SendString(temp\_value); UART\_SendString("&Water="); UART\_SendString(water\_status); UART\_SendString("&Smoke="); UART\_SendString(smoke\_status); UART\_SendString("\n");

if(smoke\_status == 1 || temp\_value > 50) { motor\_pin = 0;

} else {

motor\_pin = 1;

}

delay\_ms(5000);

}

}

# Web Application:

1. **index.js**

<?php

$conn = new mysqli("localhost", "root", "", "ev\_monitoring");

$result = $conn->query("SELECT \* FROM DataLogs ORDER BY LogID DESC");

?>

<!DOCTYPE html>

<html>

<head>

<title>EV Monitoring Logs</title>

<style>

table { width: 100%; border-collapse: collapse; }

th, td { border: 1px solid #aaa; padding: 8px; text-align: center; } th { background: #ddd; }

</style>

</head>

<body>

<h2>DataLogs</h2>

<table>

<tr><th>LogID</th><th>DATA</th><th>LogDate</th><th>LogTime</th></tr>

<?php while($row = $result->fetch\_assoc()): ?>

<tr>

<td><?= $row['LogID'] ?></td>

<td><?= $row['DATA'] ?></td>

<td><?= $row['LogDate'] ?></td>

<td><?= $row['LogTime'] ?></td>

</tr>

<?php endwhile; ?>

</table>

</body>

</html>

# insert.php (IoT Device Sends Data)

<?php

$conn = new mysqli("localhost", "root", "", "ev\_monitoring");

$data = $\_GET['data'];

$date = date('Y-m-d');

$time = date('H:i:s');

$conn->query("INSERT INTO DataLogs (DATA, LogDate, LogTime) VALUES ('$data', '$date', '$time')"); echo "Logged";

?>