# ` AKASH GLOBAL COLLEGE OF MANAGEMENT AND SCIENCE

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# SYNOPSIS

**On**

**Attendance Monitoring System**

*Submitted in partial fulfillment of requirement for the award of the degree*

# MASTER OF COMPUTER APPLICATIONS

**Of**

# Bangalore City University

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**Under the Guidance**

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# Project Synopsis

**Project title: Attendance Monitoring System**

## Project Description:

The Attendance Monitoring System with NodeMCU ESP8266 and RFID Card Scanner revolutionizes traditional attendance tracking methods. By seamlessly integrating scanning technology with NodeMCU ESP8266, the system offers a secure and efficient way to record attendance in various organizations.

Users simply scan their RFID CARD using the connected RFID CARD scanner, initiating the attendance process. The NodeMCU ESP8266 then processes this data and communicates with a central server. The server, equipped with a database of registered users, verifies the RFID CARD information in real-time, updating attendance records promptly. This streamlined process ensures accuracy and security while eliminating the need for manual attendance registers.

**Scope & Objective**:

Scope:

* Automation: The system aims to automate attendance tracking processes in educational institutions, offices, and other organizations by integrating RFID card scanning technology with NodeMCU ESP8266.
* Versatility: It is designed to be versatile, catering to various sectors such as schools, colleges, offices, and institutions.
* User-Friendly Operation: Users can easily initiate attendance recording by scanning their RFID cards using the connected RFID card scanner.
* Real-Time Updates: The system ensures real-time updates to attendance records by processing data through NodeMCU ESP8266 and facilitating communication with a central server.

Objectives:

* Accuracy: The primary objective is to enhance the accuracy of attendance recording by verifying RFID card information against a database of registered users in real-time.
* Security: Implement robust security measures to safeguard attendance data from unauthorized access or tampering.
* User Convenience: Provide administrators with a user-friendly web interface to conveniently manage attendance data, generate reports, and monitor attendance trends.
* Scalability: Design the system to be scalable, allowing for easy expansion to accommodate the evolving needs of organizations.

**Minimum Hardware and Software Requirements:**

**Hardware Requirements**:

* NodeMcu ESP8266
* MFRC522 RFID Card Module
* 5V Buzzer
* LCD
* Connection Wires

## Software Requirements:

* Application : Arduino IDE
* Frontend : HTML, CSS and PHP
* Backend : MySQL, C++
* Server : Xampp

## Module Description

**NODEMCU**

NodeMCU is an open-source IoT platform. It consists of hardware based on the ESP-12 module and firmware running on Espressif Systems' ESP8266 Wi-Fi SoC. NodeMCU serves as the smart door lock's brain in this project. Relay ON/OFF is determined by the NodeMCU based on data it obtains from the cloud database.

**MFRC522 RFID CARD Module**

The MFRC522 RFID Card Module is a versatile and widely used component in electronic projects, particularly those involving RFID (Radio Frequency Identification) technology. This module is designed to facilitate communication between RFID cards/tags and microcontroller units like Arduino, Raspberry Pi, or NodeMCU ESP8266.

**5V Buzzer**

A 5V Buzzer is a simple electronic component that produces audible sound when an electrical signal is applied to it. It is commonly used in various electronic projects and applications where an audible alert or notification is required.

Signature of Student: Signature of Guide

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