IOT BASED ATTENDANCE SYSTEM

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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APPROVAL

This Project titled **"IOT BASED ATTENDANCE SYSTEM**", submitted by Md. Ashik Reza, Md Aman Ullah, Mitu Akter, to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering. And it is approved as to its style and contents.

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Md Ohidujjaman Tuhin, Lecturer, Department of CSE** Daffodil International University. We declare that any part of this project has been submitted elsewhere for the award of any degree.

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ACKNOWLEDGEMENT

First, we thank God for His divine blessing that makes us possible to complete the final year project successfully.

We hereby, completing this project, would like to express our very great appreciation to **Ohidujjaman Tuhin**, Senior **Lecturer**, Department of CSE, Daffodil International University, Ashulia, Dhaka for providing required guidance and their valuable and constructive suggestions during our project work. Their willingness to give their time so generously has been very much appreciated.

We would also like to thank **Md. Mahfujur Rahman Raju**, Lecturer, Department of CSE, for his timely help comment and suggestions. His suggestions and comments had really given us a new direction to think about the project. We thanked our course mates for their suggestions and comments.

ABSTRACT

Digital Attendance is a part of a digital and by it we can take the attendance of the employees in any factory and any employee details can be kept when he is coming to the office Accounts will be available for when he is on leave.

when he is coming, when he is gone, when he has spent so much time in the office. The digital still system will have a lot of security in your office and factory and it will not harm you and there will be many benefits in digital attendance system.

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CHAPTER 1

Introduction

All organizations, big or small, require a tracking system and process for attendance of employees and workers for tasks and projects to be effective. To avoid any discrepancies and variation in the time and attendance of servants all formations should have records of each employee.

Recording attendance manually is time swallowing and unskilled, and technology has advanced this procedure by making it automatic. The face acceptance ability of the smart attendance administration system has hugely exalted this process. This smart system of recording attendance is more useful since it acknowledges the employee's face and punch card uses their fingerprint for identification. A system is recording employee time and attendance. It contains identification information in the form of a bar code.

Attendance is taken on a punch card team and a biometric device system is buried. The face of the employee can be tightened properly and the release will mark the employee's presence and the employee's ID card will have a serial number. Employee .The system is also recording a video image of the user.

Literature Review

The student's attendance system is a very important part of educational institutions. This system monitors student attendance and eliminating time wasted when we collect attendance in a manual. There is some existing student's system where we compare these systems with our system and we do efficient our system more than these existing systems.

There was a model of a barcode-based student attendance system. It was presented by K. L. Sudha, S. Shinde, Titus Thomas, and Aris Abdugani. This project was used as a barcode scanner. In this project, each student's ID card has a barcode on the backside of it. But the main drawback of this system was that it was a barcode-based attendance system. But our is Radio Frequency Identification (RFID) based system which reads multiple at a time.

There is another student's attendance system which was designed by Tayo Arulogun, Adeboye Olatunbosun, Fakolujo O. A., and Olaniyi Olayemi Mikail. It is a RFID based system. But it is a matter of sorrow that this system doesn't support the salary payment system.

Moreover, there is another model which is Radio Frequency Identification (RFID) technology-based attendance control system. It was developed by Nurbek Saparkhojayev and Selim Gvercin. In this system, all PCs are connected to one server and all data is saved in one database and monitoring all information. But the main disadvantage of this system is its maintenance cost is very high.

Finally, we solve all drawbacks of these existing systems. Moreover, we improve some other features of these existing systems. And we also add some new features to our project.

CHAPTER 2

Implementation

We connect Node MCU ESP8266 and RFID- RC522 and FPC1020 figure print sensor with MYSQL Database. Then we should connect Node MCU ESP8266 Board with RFID Module. By using the RFID Module, we scan RFID cards and tag which are accepted or not. By using ESP8266 we send that data to MYSQL Database. It connects through a PHP page.

We used three devices to project digital attendance. The first was the Note MCU. RFID 5512 model and the third was the RFID card. Our code will be installed in the new MCU and will be connected to the RFID module If we are free to connect with MCU, we will be able to pass by connecting the r. If we work with the fit card, we will go to the administrator's computer and it will take to verify that we have the card ID number and then We can log in

We will have a unique number on the ID card, we will enter and exit by pulsing with it and the computer will be connected to Wi-Fi. We will have it for digital sentencing.

We have to set up our unique number on the ID card from the administration computer and we have to register it and we will not have to work so we have to register with our unique number from the administer then we will show our when we work and work out Show us out when it's time and the administrator can see when I'm coming and when I'm going and control me from there.

Existing System

The existing system has implemented with the help of direct Wi-Fi (Wireless Federation). With this device, we will be able to control many employee attendances in less time without any hassle.

We will take a lot of time to attend every day and we will be able to control weekly and last month we will be able to control it. It will be much easier for us. We will have an ID card for each of us and we will have a number that we have to enter and we will not be able to enter and it will be very easy for us to calculate him and his details.

CHAPTER 3

Hardware and Software

Software:

- Arduino IDE
- XAMP

Hardware:

- Node MCU V3
- RFID Reader with Tag
- Jumper Wire
- FPC1020

Node MCU:

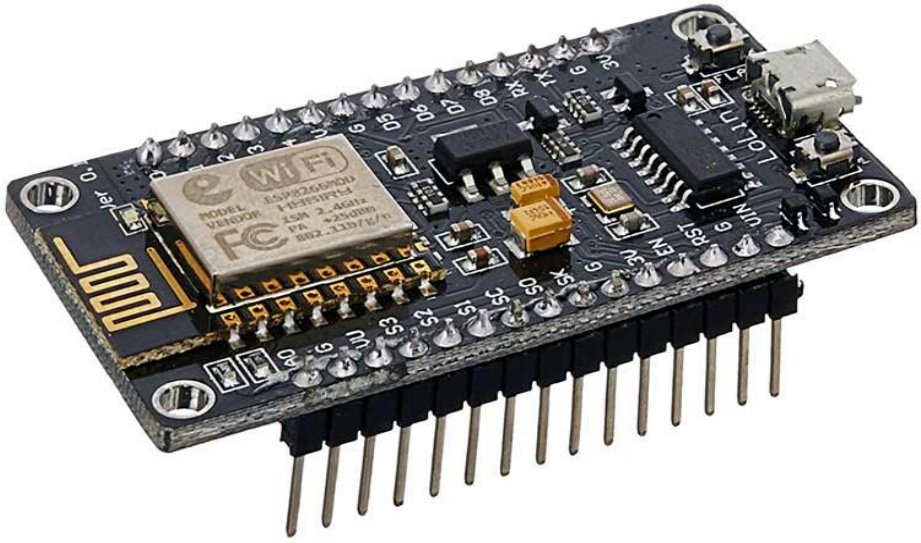


Figure – 3.1: Node MCU

Node MCU is one of the best open-source IoT platforms which includes firmware to runs on the ESP8266 Wi-Fi SoC. It is ESP-12 based module.

It refers to the firmware rather than the dev kits. This firmware uses the Lua scripting language. It is an eLua project-based which built on the Espressif Non-OS SDK for ESP8266.

Lua-cjson and spiffs are used it. LUA based interactive firmware for Expressif ESP8622 Wi-Fi SoC. It is an open-source hardware board which is contrary to the $3 ESP8266 Wi-Fi modules includes a CP2102 TTL to a USB chip. It is using for programming and debugging. It is breadboard-friendly; It can simply be powered through its micro USB port.

RFID Module Card:

RFID- RC522:

RFID RC522 is a low cost., We can easy to use module suitable for equipment and advanced application development that needs RFID applications. It stands for Radio-Frequency Identification. It refers to small electronic devices that consist of a small chip and an antenna.

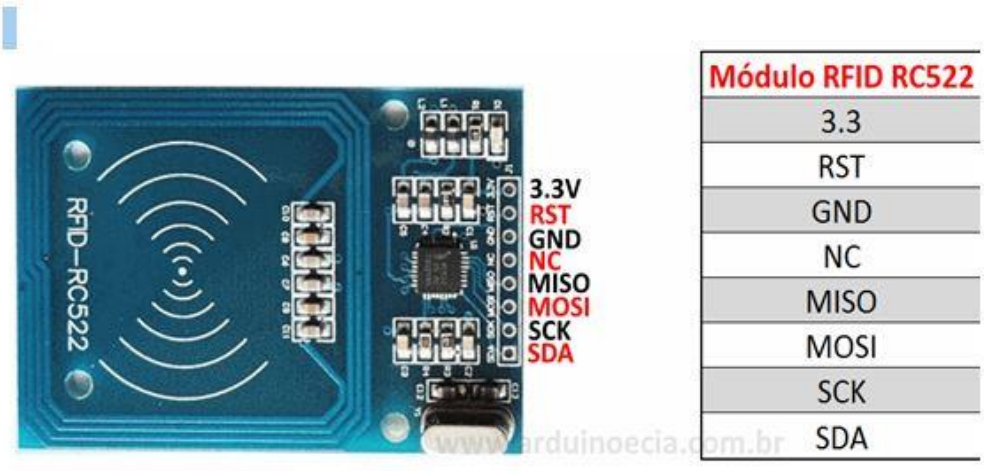
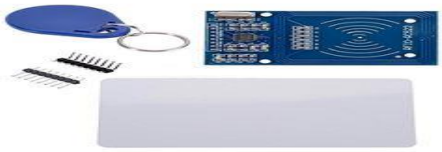


Figure – 3.2: RFID – RC522

Figure – 3.3: Card Scanner



Circuit Diagram:

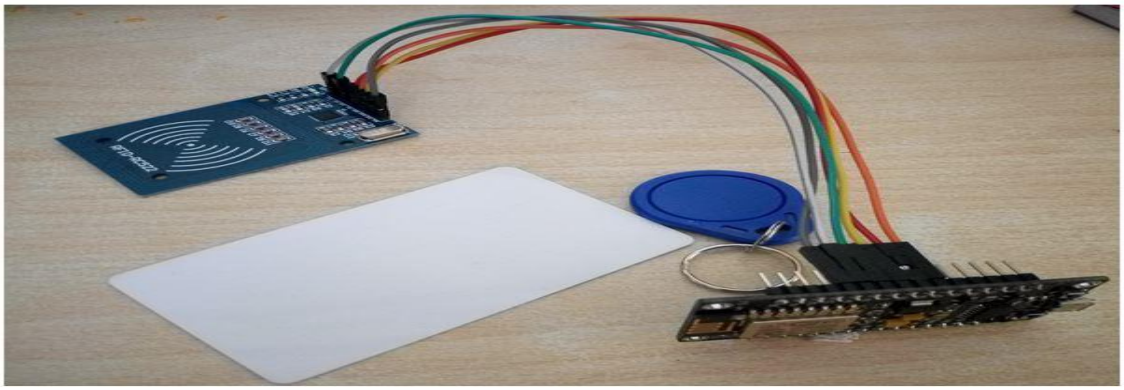
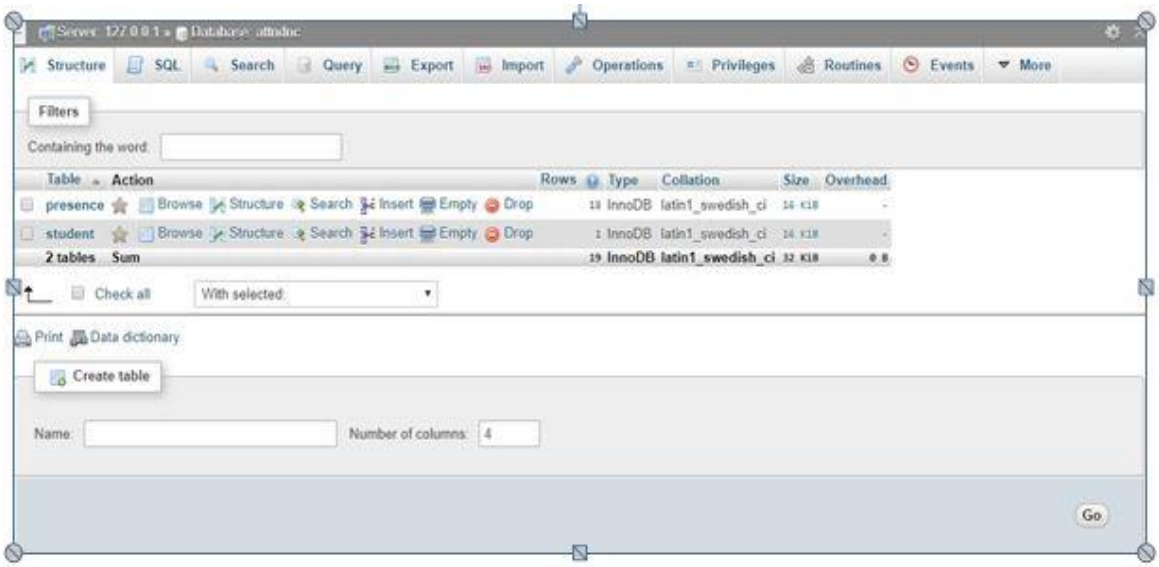


Figure – 3.4: Circuit Diagram



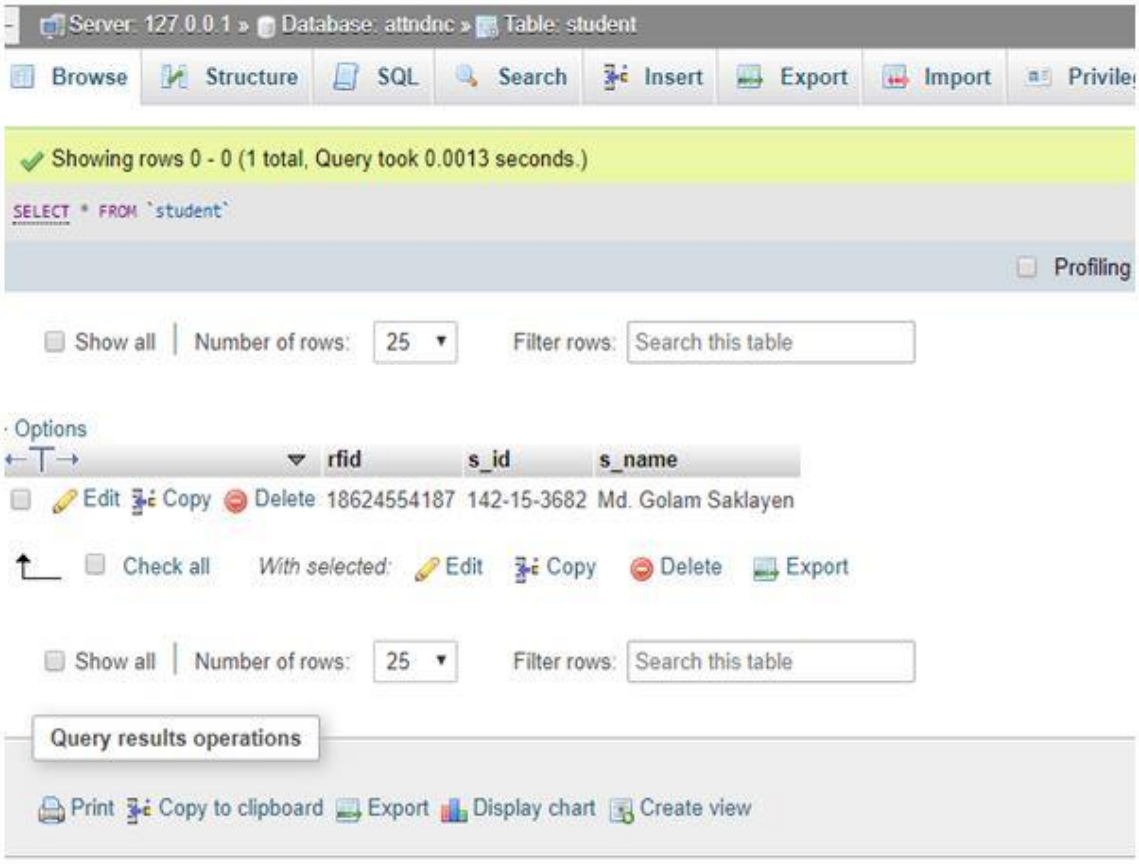


Figure – 3.5: Database

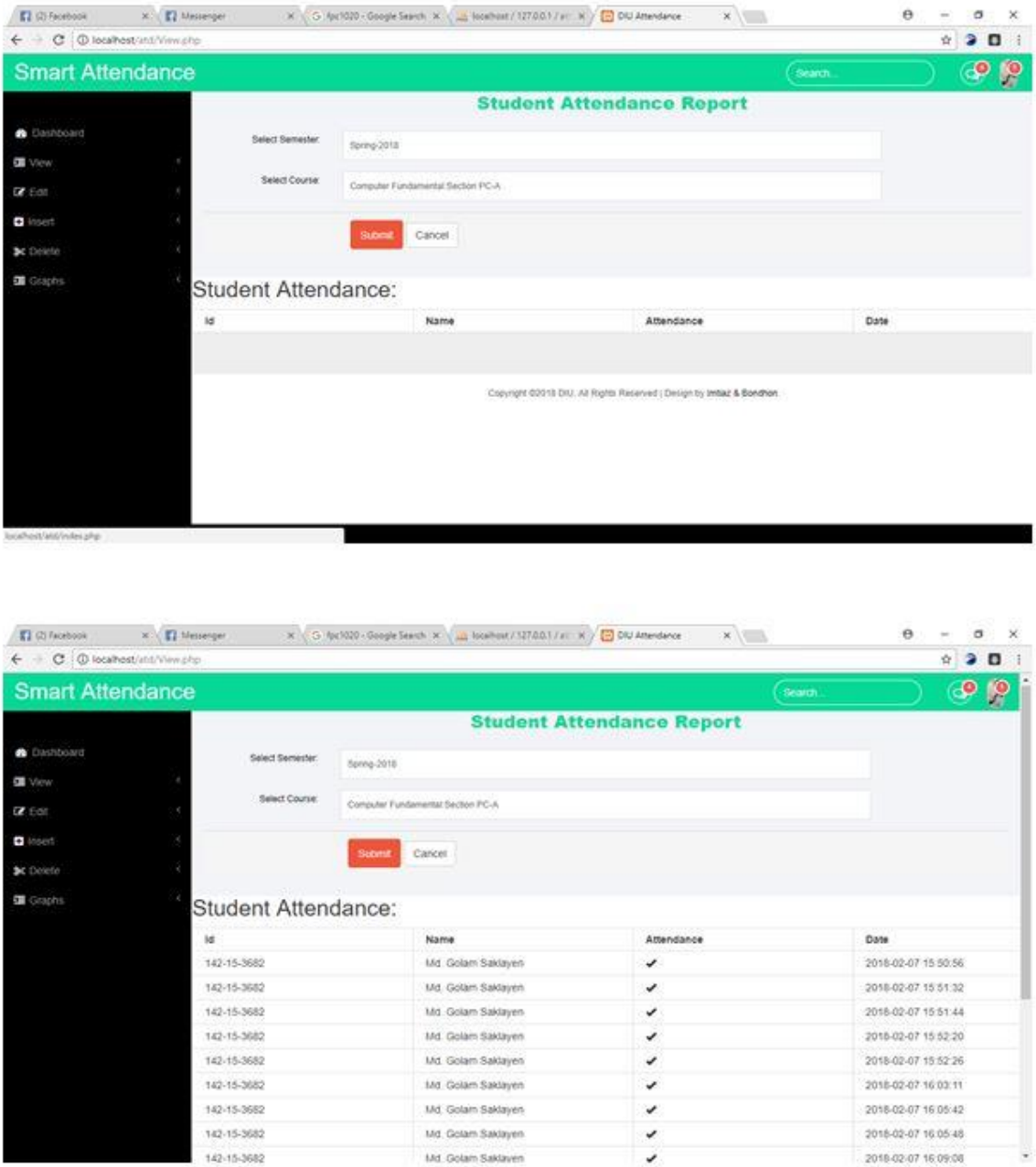


Figure – 3.6: User Interface

SQL Database Code

```
-- phpMyAdmin SQL Dump

-- version 4.9.2

-- https://www.phpmyadmin.net/

--

-- Host: 127.0.0.1

-- Generation Time: Dec 07, 2020 at 04:01 PM

-- Server version: 10.4.11-MariaDB

-- PHP Version: 7.4.1

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";

SET AUTOCOMMIT = 0;

START TRANSACTION;

SET time_zone = "+00:00";

--

-- Database: `attndnc`

--

-- --------------------------------------------------------

--

-- Table structure for table `presence`

--

CREATE TABLE `presence` (
```

```
  `id` bigint(20) NOT NULL,
  `rfid` text DEFAULT NULL,
  `biometric` varchar(10000) NOT NULL,
  `allow` text DEFAULT NULL,
  `date` timestamp NOT NULL DEFAULT current_timestamp() ON
UPDATE current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
--
-- Dumping data for table `presence`
--
INSERT INTO `presence` (`id`, `rfid`, `biometric`, `allow`,
`date`) VALUES
(88, '19624754180', '1', '1', '2018-03-14 04:48:22'),
(89, '19624754180', '1', '1', '2018-03-14 14:32:54'),
(90, '18624554187', '1', '1', '2020-12-01 14:16:10'),
(91, '19024554181', '1', '1', '2018-03-14 14:48:05'),
(92, '18724554188', '0', '0', '2018-03-10 14:47:55'),
(93, '17624554188', '0', '0', '2018-03-14 14:47:42'),
(94, '16624554107', '1', '1', '2018-03-14 14:47:02'),
(95, '15324554127', '1', '1', '2018-03-13 20:00:00'),
(101, '18624554187', '1', '1', '2020-12-01 14:30:39'),
```

```
(102, '8014795168', '', '1', '2019-02-23 03:31:49'),
(103, '1282337217', '', '1', '2019-02-23 03:34:41'),
(104, '8014795168', '', '1', '2019-02-23 03:40:49'),
(105, '1282337217', '', '1', '2019-02-23 03:41:02'),
(106, '1282337217', '', '1', '2019-02-23 06:40:45'),
(107, '8014795168', '', '1', '2019-02-23 06:41:33'),
(108, '8014795168', '', '1', '2019-02-23 06:45:38'),
(109, '1959022964', '', '0', '2020-12-02 20:13:59'),
(110, '1959022964', '', '0', '2020-12-02 20:14:32'),
(111, '1959022964', '', '1', '2020-12-02 20:19:05'),
(112, '1959022964', '', '1', '2020-12-02 20:20:11'),
(113, '1959022964', '', '1', '2020-12-03 02:13:58'),
(114, '57147245162', '', '0', '2020-12-04 05:10:50'),
(115, '1959022964', '', '1', '2020-12-04 05:11:17'),
(116, '1959022964', '', '1', '2020-12-04 05:11:42'),
(117, '1959022964', '', '1', '2020-12-04 05:11:43'),
(118, '1959022964', '', '1', '2020-12-04 05:15:10'),
(119, '1959022964', '', '1', '2020-12-04 05:15:10'),
(120, '3422112352', '', '0', '2020-12-04 07:37:23'),
(121, '3422112352', '', '0', '2020-12-04 07:40:07'),
(122, '3422112352', '', '0', '2020-12-04 07:56:59'),
```

```
(123, '3422112352', '', '0', '2020-12-04 07:57:47'),
(124, '3422112352', '', '0', '2020-12-04 08:05:03'),
(125, '1959022964', '', '1', '2020-12-04 08:05:41'),
(126, '3422112352', '', '0', '2020-12-04 08:05:51'),
(127, '3422112352', '', '1', '2020-12-04 08:07:25'),
(128, '3422112352', '', '1', '2020-12-04 08:22:51'),
(129, '3422112352', '', '1', '2020-12-04 08:23:23'),
(130, '3422112352', '', '1', '2020-12-04 08:24:08'),
(131, '3422112352', '', '1', '2020-12-04 08:27:24'),
(132, '3422112352', '', '1', '2020-12-04 08:29:18'),
(133, '25216245162', '', '0', '2020-12-04 08:29:49'),
(134, '25216245162', '', '1', '2020-12-04 08:30:37'),
(135, '3422112352', '', '1', '2020-12-07 13:55:05'),
(136, '3422112352', '', '1', '2020-12-07 13:56:32'),
(137, '57147245162', '', '0', '2020-12-07 13:57:41'),
(138, '1959022964', '', '1', '2020-12-07 14:39:33'),
(139, '1959022964', '', '1', '2020-12-07 14:41:32');


-- --------------------------------------------------------

--

-- Table structure for table `student`
```

```
--
CREATE TABLE `student` (
  `rfid` varchar(100) NOT NULL,
  `s_id` varchar(100) NOT NULL,
  `s_name` varchar(100) NOT NULL,
  `designation` varchar(100) NOT NULL,
  `salary` double NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
--
-- Dumping data for table `student`
--
INSERT INTO `student` (`rfid`, `s_id`, `s_name`,
`designation`, `salary`) VALUES
('1234556676', '', 'Faysal111111111111', 'Sr Officer',
20000),
('1282337217', '142-15-121', 'Shohel Rana', '', 0),
('15324554127', '142-15-168', 'Imtiaz Khandokar', '', 0),
('16624554107', '142-15-154', 'Amir Shah', '', 0),
('17624554188', '142-15-131', 'Karim Khan', '', 0),
('18624554187', '142-15-3682', 'Md. Golam Saklayen', '', 0),
('18724554188', '142-15-138', 'Mohsin Khandakar', '', 0),
```

```
('18824554189', '142-15-135', 'Shifat Jaman', '', 0),
('19024554181', '142-15-143', 'Abu Bakar', '', 0),
('1959022964', '', 'GS', 'Sr Officer', 20000),
('19724554137', '142-15-144', 'Faysal Kabir', '', 0),
('25216245162', '', 'Mr. Salam', 'Sr Officer', 20000),
('3422112352', '', 'Sinha', 'Sr Officer', 20000),
('43565555555', '', 'Kaka Kaki', 'Sr Officer', 20000),
('62621111072288', '', 'kaka', 'sr', 1000),
('6262700072288', '', 'John', 'sr', 1000),
('62627Eb72278', '', 'John', 'sr', 1000),
('62627Eb72279', '', 'John', 'sr', 1000),
('62627Eb72288', '', 'John', 'sr', 1000),
('8014795168', '142-15-133', 'Sohanur Rahman', '', 0);
--
-- Indexes for dumped tables
--
--
-- Indexes for table `presence`
--
ALTER TABLE `presence`
  ADD PRIMARY KEY (`id`);
```

```
--
-- Indexes for table `student`
--
ALTER TABLE `student`
  ADD PRIMARY KEY (`rfid`);
--
-- AUTO_INCREMENT for dumped tables
--
--
-- AUTO_INCREMENT for table `presence`
--
ALTER TABLE `presence`
  MODIFY `id` bigint(20) NOT NULL AUTO_INCREMENT,
AUTO_INCREMENT=140;
COMMIT;
```

CHAPTER 4

Applications

1. It is very easy to use in the office and school and takes very little time.
2. It can be controlled without any hassle and it
3. It can be controlled without any hassle and it is very easy to understand when it is coming when it is going and how many

Future Work

By planning for the future we can work with digital content like we can use one in school college office factory and bring it in less cost to make mine so it will take less time and we will benefit a lot if our usage increases. I use the devices.

It can be improved by modernizing it like when I am going when it is coming. It is best if the SMS goes to my house. I went to school and went to my house

immediately but as soon as your son reached school When I came out, it was seen that my son had come to my house and it was possible to work on it.

Conclusion

The Digital attendance system has been proven to work favorably which is connected sample appliances to it. The appliances were controlled by a wireless device.

After connecting our devices, the Wi-Fi that is connected to our administrator's computer is the Wi-Fi that we need to connect to the punch machine. Besides, it is not possible to send data. We will have a separate Unicode for this blog. Can be seen. Usable in school-college.

After completing this project on the topic IOT Based Attendance System, we can have concluded that this smart system of recording attendance is more useful since it acknowledges the employee’s face and punch card uses their fingerprint for identification.

This project includes to support the salary payment system and reads multiple card at a time which increases its reliability. Now i am able to talk any issue related with IOT Based Attendance System.

The whole credit goes to our supervisor Md. Ohidujjaman Tuhin as well as our co-supervisor Md. Mahfujur Rahman Raju; they refined our ideas and make this project wonderful.

Acknowledgement

We thank Daffodil International University for providing the vitally important knowledge and the necessary guidance as well as encouragement in completing this paper.

We would like to express our special thanks of gratitude to our supervisor Md. Ohidujjaman Tuhin as well as our co-supervisor Md. Mahfujur Rahman Raju who gave us the golden opportunity to do this wonderful project on the topic IOT Based Attendance System, which also helped us in doing a lot of Research and we came to know about so many new things we are really thankful to them.

Secondly we would also like to thank our parents and friends who helped us a lot in finalizing this project within the limited time frame.

Reference:

[1] K. Domdouzis, B. Kumar, and C. Anumba, “Radio-Frequency Identification (RFID) applications: A brief introduction.”, Advanced Engineering Informatics, Vol. 21, 2007, pp 350-355.

[2] S. A. Weis, S. E. Sarma, R. L. Rivest, and D. W. Engels, “Security and Privacy Aspects of Low-Cost Radio Frequency Identification Systems.” Security in Pervasive Computing, 2003, pp 201-212.

[3] F. Silva, V. Filipe, A. Pereira, “Automatic control of students’ attendance in classrooms using RFID”, in 3rd International Conference on Systems and Networks Communication, 2008, pp 384-389.

[4] S.Kadry and M.Smaili, “Wireless attendance management system based on iris recognition”, Scientific Research and Essays, Vol. 5(12), 18 June 2010, pp. 1428 1435.

[5] B. Medien and T.Burghardt, “Report on Identity Verification”, University of Bristol, November 2002.

6] D. Zhang and A.K. Jain, “Biometric Authentication”, Proc. First International Conference on Biometric Authentication (ICBA), Hong Kong: Springer-Verlag, 2004.

[7] Y. Belganoui, J-C. Guezel, and T.Mahe, “La biometrie, sesame absolu…”, Industries et Techniques, No.817, July 2000.

[7] Mohd Helmy Abd Wahab 2010 “Design and Development of Portable RFID for Attendance System”, 978-1-4244- 5651-2/10, 2010,

[8] Qun Hou, Wuhan, Hubei, 2010 “Research and Implementation of Remote Heart Rate Monitoring System Based on GSM and MCU”, CHINA,

[9] S.B.Patil and R.M.Walli, “Design and Development of fully automatic AT89C52 based low cost embedded system for rail tracking”, International Journal of electronic communication and soft computing science and engineering”, Vol. 1, Issue 1.

[10] Yan Hongwei, Pan Hongxia, 2009 “Remote Data Monitoring System Design Based on GSM Short Message Service” in IEEE International Symposium on

[11] T.S. Lim, S.C. Sim and M.M. Mansor, 2009 “RFID Based Attendance System”, 2009 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2009), Kuala Lumpur, Malaysia

[12] Z. Yongqiang, L. Ji 2006 “The Design of Wireless Fingerprint Attendance System” International Conference on Communication Technology, ICCT '06, Handan, Hebei, China, 27-30 November 2006, pp. 1-4.

[13] M. Man, L.Y. Kyng 2007 “Utilizing MYKAD Touch N Go features for Student Attendance System (TITO)”. Proceeding of 1st International Malaysian Educational Technology Convention 2007, Johor Bahru, Malaysia, pp.114-120.