

Report on Smart Attendance System Using RFID

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Table of contents

Title	
Introduction	
Objectives	
Methodology	
System Scenario	
Users	
Logical Model	
Advantages	
Conclusion	

Introduction:

Attendance is something that is used everywhere, from education institutes to professional fields. It is an important action for keeping track of people's presence. In factories and offices it is a system that is used for keeping track of employees presence and performance at work and depending on it many decisions are taken. But this system is still in analog stage. In most of the places pen-paper is used which is a very bothersome and hard to summarize way of keeping attendance. So in this project we have taken initiative to make a smart attendance system in which the hustle of using pen and paper can be ignored and records will be kept in a more accurate way.

Objectives:

- To create a smart attendance system
- To keep accurate daily or monthly entry and exit record.
- To keep track of employees' working time frame.

Methodology:

In this project there are three parts. A hardware portion, a user interface which is the software part and database.

- First we have built a hardware system using RFID reader and card with raspberry pi and used python to read the ID cards and connect to online database for storing data.
- Then we used an online server where the data collected from the RFID reader will be stored in a MySQL database.
- Lastly we created a UI for the system admin using java swing, JDBC where the admin can create, modify and delete employee information. Also see attendance report and export it as overall

report or employee specific report. For populating the Jtables we used rs2xml library.

System Scenario:

In a company all employees possess RFID cards as their individual identification card. When they swipe the card into the reader the reader identifies the employee and collects record of his entering time through a Raspberry Pi. This information is sent to the database and while leaving at the end of the day the employee again swipes the ID and the leaving time of that employee is recorded and his attendance for the day is counted. So the database keeps the data of that employees attendance, in-time and out-time, also it contains all the employees' details along with the RFID allocated to the employees.

Then the UI for this system contains options to view employee details, modify them, employee attendance and exporting the attendance record to a CSV format.

Users:

- Employees
- Admin

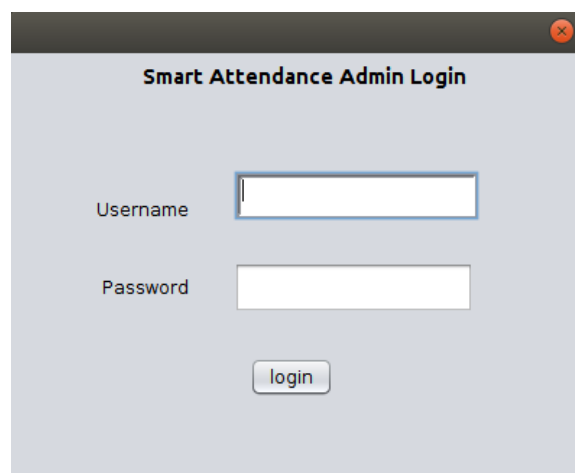
A screenshot of a web application window titled "Smart Attendance Admin Login". The window has a light gray background and a dark gray header bar with a red close button in the top right corner. Below the header, there are two input fields: "Username" and "Password". The "Username" field is a white rectangle with a blue border, and the "Password" field is a white rectangle. Below these fields is a "login" button with a gray border and the word "login" in the center.

Figure 1: Admin Login

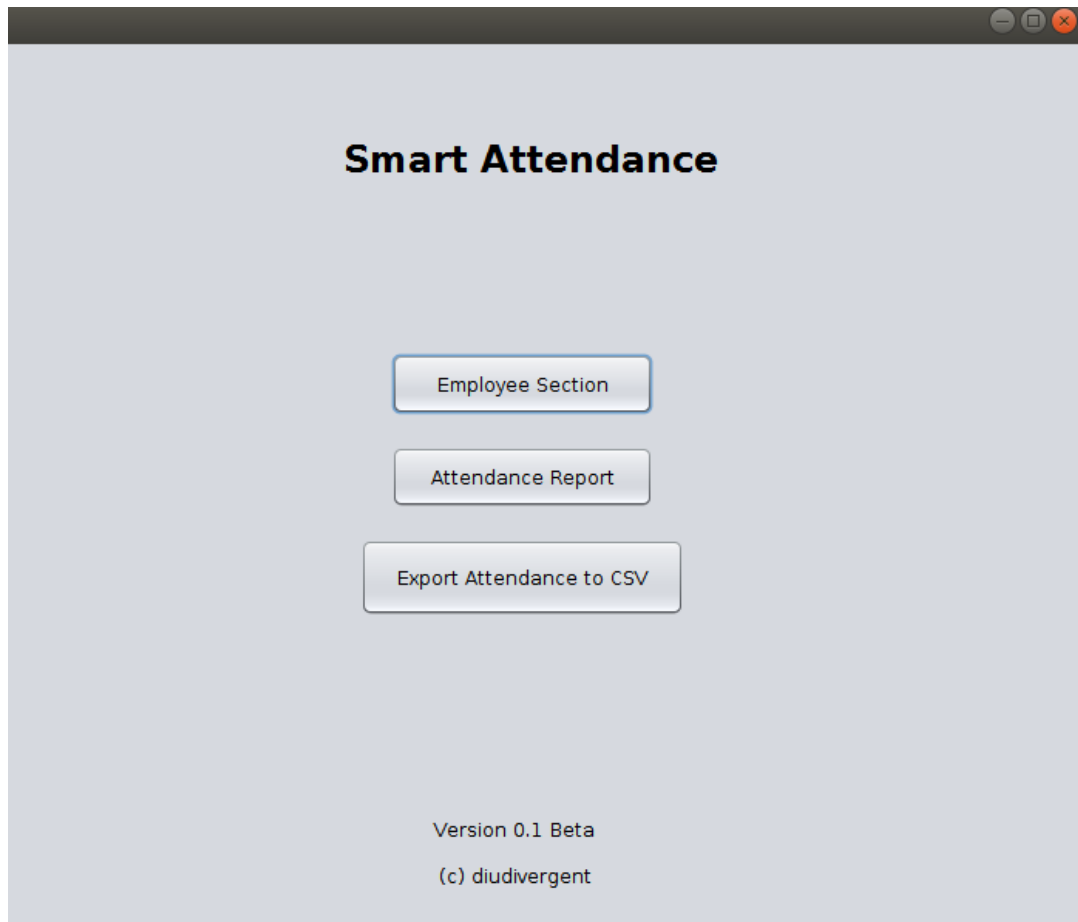
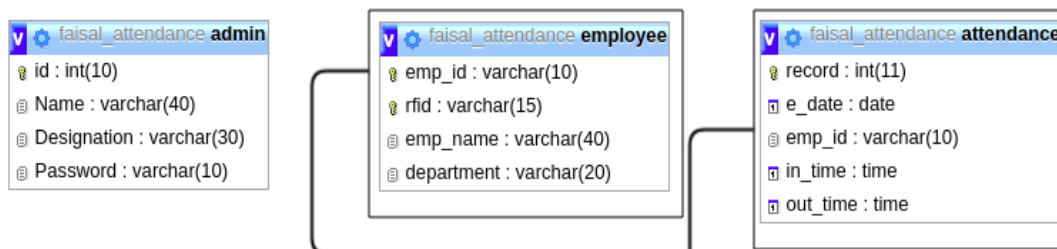


Figure 2: Admin Panel

Logical Data Model:



Advantages:

- Keeping record of employees and their attendance becomes easy and hassle free.
- This system can be implemented in a way that unless the employee swipes card he will not be able to enter the company so the chance of missing attendance will be reduced.
- In and out time for every employee is recorded so the employer can keep track on an employees working hours.

Conclusion:

Keeping employee records and daily attendance is very hard and a lot of work if it is kept in analog system. These data are also hard to find, access and summarize if they are in papers. So this system can make all this hard work easy. All the info are needed to be inputted once and the system will do the work of keeping those organized and also help keeping the record of an everyday hassle.