

CENTER OF INFORMATION TECHNOLOGY AND SCIENTIFIC
COMPUTING

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ATTENDANCE MANAGEMENT SYSTEM



Members

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|--------------------|-------------|
| 1. ABIY WONDIMU | ATR/5758/10 |
| 2. AMANUEL TEFERA | ATR/1769/10 |
| 3. EYOB GOITOM | ATR/1155/10 |
| 4. HENOK GELANEH | ATR/7217/10 |
| 5. KEROD FRESENBET | ATR/2660/10 |

COURSE: WEB PROGRAMMING
SECTION: IT

1. Introduction

1.1 Background

As future software developers we want to be a model of efficiency and effectiveness. We have identified a problem and we aim to solve it with automation. Attendance management is an integral part of any company's day to day processes, it is the bedrock on which other systems stand to function such as human resources management and not to mention payroll management. The aims of any company is profitability and productivity. You can't have one without the other, and such a system promises to do that exactly for any company in any niche. A system like the one we are suggesting can help keep an accurate tab on tardiness, compute each employee's salary, doing automated calculations, enforces discipline, removes the need for paperwork and filing and furthermore it equips an employee with quick remote access.

So as for the question of motivation, it might be summed into identifying a hole and feeling the need to plug it. But to elaborate our country seems to be a culture of tardiness and lack of punctuality, even in our own university teachers frequently arrive late, reschedule classes because of lateness and as such we believe that automation is the key to solve that. One overlooked quality of a computerized system is not having any room for subjectivity, for instance if an employee is tardy the system simply docks his/her pay, no complications will arise that usually spring from human interaction.

The target market is medium and large sized institutions and corporations that either have a significant employee count or have aspirations to grow to a significant number, we serve both the reactive and proactive block. Of course, a cost-benefit analysis will have to be done for each corporation and/or institution, but the general parameters are as previously stated.

Our project will deliver the following services:

- Time and Attendance management.
- Employee Scheduling
- Leave management
- Access control
- Job Floor tracking
- Field service

Today's Software

Nowadays, absence management is far easier to monitor when vacation, sick days and holidays can be automatically tracked and accrued. Complex overtime rules are easier to manage and unauthorized overtime is easier to control. Current systems take advantage of networking protocols to link the computers involved so employees can be monitored in real time and the information can be stored safely in a centralized location.

This is the general aim of our system for detailed specifications (see below).

1.2 The Existing System

As per our understanding of the question as what sort of system exists that you aim to replace or embetter, we will first refer to the many manual and traditional systems that are present in our country. In the present system all work is done on paper. Attendance is recorded on physical registers and it involves a lot of human oversight.

Disadvantages of present working system:

- It is manual and therefore requires a large amount of human oversight, which would in turn lead to a greater number of clerical errors.
- It is more time consuming, the aim of a commercial company is to increase capital and revenue, and the one resource that people generally agree is the most important is time, ergo it is not optimal to waste time using a manual system when problems like that can be circumvented.
- Is prone to falsification as is evident by the phenomenon known as time theft (discussed below in more detail).

1.3 Statement of the problem

Imagine a system so ancient that it was pioneered in the late 1800's, this is the system that is currently in place at many a corporation in our country. So, of course such systems are going to be plagued with problems.

- A lack of efficiency is one, employee documents are stored on paper with attendance and payroll also being managed on paper. A manual filing system is what is housing vital information about employees that might make or break a company. A number of sub-problems might be suggested like data falsification, time consumption due to manual searches of documents, etcetera.
- A lack of efficacy is another, how would a manual attendance management system fair with a company that has let's say 500 employees? It is logical to hazard a guess, that it would most certainly fail at a certain future point. How can a system being handled by error prone and limited in number individuals fair against employee tampering of data, payroll calculation.

1.4 Objective of the project

1.4.1 General Objective

To fashion an attendance management system that provides the three E's efficiency, efficacy and excellence.

1.4.2 Specific Objective

To realize the vision mentioned above, the following need to be attained:

- To attain full computer operational control.
- To have a user-friendly system.
- To have a system that is robust enough to expand into a complete employee management system.

1.5 Proposed System

In the proposed system an employee would only be officially recognized after signing up on the system with a full set of credentials. The employee will then be provided an identifier and will have the opportunity to set a password which would serve as their access point to monitor their attendance records (read only), check the number of leave days they might have and most importantly check their payments. The last part is very important as the software will provide any pertinent information about payment docking and such, thus avoiding any unnecessary human interaction. The proposed system would allow the employer to track any employee in real time and make payroll calculations in a matter of seconds error free.

The proposed system would also enable the employer to check if an employee is on leave (be it sick leave or a sabbatical), is eligible to receive leave. It would also enable employers to track overtime workers. It may also be coupled with a system that incentivizes non-tardiness and hard work.

Target Market

- Small, Medium and Large Enterprises.

To further elaborate, since the current state of our country is not very technologically literate, this gives us a unique opportunity to have a large potential market, even ranging into the large corporations of our country. Most high-level enterprises in our country have manual systems handling their most day to day activities that are considered “trivial” such as the managing the attendance of their employees. Except for multinational corporations, the majority of corporations in our country would benefit from the technology that we are suggesting.

Benefits

To start off, let us briefly describe what the traditional attendance systems mostly entail:

- Old-fashioned punch clocks
- Signatures on paper sheets
- Human oversight

Some would argue that if such systems were implemented well, then there would be no need for a paradigm shift, and they would be right to a certain extent. These systems are age tested and no

one is doubting their effectiveness especially in small environments, however what our system promises is far higher effectiveness and an elimination of all the cons in the “pro et contra”.

So, what are some of the cons of such a manual system?

- Inaccuracy
- Threat of manipulation (“time theft”)
- Laborious payroll calculation
- Arduous employee data extraction
- Low scalability
- No possibility of integration with other systems

And what are some of the pros of an automated system?

- ✓ Greater precision
- ✓ Reduced work load
- ✓ Full integration with other systems like payroll management and HR management, even could be packaged together as will payroll management be packaged with our software.
- ✓ Transparent performance tracking, ie. reduced back room activities
- ✓ Easy data sharing between multiple locations in real time.

Cost-Benefit Risk Reward Analysis

Software systems for time tracking and attendance management are slowly, but surely becoming the accepted standard in the developed world. Initial development of the system is going to require investment, but the consensus seems to be that the developmental costs can be quickly recouped through improved productivity and simplified operations.

Operation costs

The software system that we are suggesting is not a done and dusted type of deal after deployment. Like most management systems certain operational costs are necessary to keep the software up and working.

Some of the basic operational costs would involve:

End user training, although one of the aims of any automated system is to remove human involvement, it is improbable that our system can be fully autonomous, however what we aim to achieve is close to full autonomy. Furthermore, by making our software as user-friendly as possible we can reduce the costs involved in end user training.

Hardware is another operational cost and this would be “mother load” so to speak. Here is a specific list of hardware that might be involved in the day to day operation of our software.

- Computers for the deployment of the system.
- Backup drives (server if necessary depending on scale of company) to store relevant information of employees.
- A dedicated power generator to keep the system running, since this system is integral to the day to day operations of a prospective company.

Here is also a list of hardware that could potentially be integrated into our systems in the future.

- Bio-metric readers such as eye scanners, finger print scanners or any form of scanners that would serve to uniquely identify employees.
- A touch interface to the system. In the smart phone age, a touch interface would greatly improve efficiency and would bode well with employees and employers. As of 2017 data pulled by the Global economy website suggests that over 60 million people are mobile phone subscribers.

1.6 Scope

In this system there are two main classes:

1: Admin

- The Admin Add & Modify details of Employees, Other Administrators & specific organizational details (if required).
- Administrator must have valid user Id and password to login.
- If a wrong Id or password is given again it asks for valid Id and password.
- Valid administrator can view desired accounts.
- Administrator can insert/update the institutional calendar and he can also view the details of an employee.
- He can add/delete an employee or faculty into the organization.
- An admin can view the daily, monthly and yearly attendance of a specific employee.
- Admin can generate reports to the employees and organizational heads if the need arises.
- He can also view the details of an institution.
- The registration of an employee is necessary, and the process of registration is done only by the admin. They can add new employees when they are required to.
- Admin provide register number for all employees. Administrator can update his profile, and also can give help to the employees and operational heads.
- An admin can review and decide on whether to grant leave to an employee when requested by the employee, if they are given the go ahead by the institutional or section heads(managers).

2: Employee

- Employee must have valid user Id and password to login.
- If a wrong Id or password is given again it asks for valid Id and password.
- Valid employees can view desired accounts
- An employee can view his details.
- An employee that has logged in successfully can punch in and punch out to validate his attendance that day
- The employee can only punch in and punch out at specific time during the day where it is allowed.
- If an employee has not punched in, he will not be allowed to punch out.
- And he can view the reports generated by an administrator about their (the employees) attendance status.
- An employee can also request days of leave as long as he has days left in his/her yearly .