# CHAPTER ONE

## INTRODUCTION

In every organization, employees play a very important role as they are the backbone of any organization. Management of the employee performance plays a major role in deciding the success of the organization.

Employee Attendance System (EAS) is a simple attendance that specifically developed for small or medium companies where about 50 employees have. The purpose is to make sure that the employees are punctual and do their jobs on time. With this system, the administrator may save their time to observe the employees. This system provides easy to use and reliable employee attendance tracking and reporting. It allows employee to clock in and clock out using the PC mouse click. The employee also can apply leave and check leave through the system. The system will monitor the employees working time. Besides, the system can store the records for employees such as their personal details information. Based on the calculation of the above categories, the system is able to generate various reports such as attendance record and employee attendance analysis. Currently, there is no proper system to monitor the employees' attendance at some industry companies. Besides, the company still uses the paper-based system to keep tracks the records of the employees. As a solution, the system will be developed to overcome the problems that stated above and provide an effective way to monitor the employees' attendance. This system will provide a user-friendly interface to make the system easy to use.

## PROBLEM DEFINITION

Some companies are still using log book to keep track the of employees' attendance. This attendance records are not precise. Besides, the company still uses the paper-based system to keep tracks the records of the employees. This method is not secure because the records may get lost. It is also hard to find certain records using paper-based system.

## OBJECTIVE

There are several objectives that identified in this system. These objectives are listed as below:

* Able to keep track the attendance and records for the employees such as their personal details information.
* Able to calculate the total working day of the employee’s total of the employees who are coming late and total of the employees who apply leave.
* Able to generate various reports such as daily attendance record, monthly attendance record and employee attendance analysis.
* Can improve the efficiency of company for recording and ‘managing employees' record.
* To provide a paperless environment by using a computerized system that can save a lot of time.
* To eliminate need for expensive time clock hardware. The program is intuitive and easy to use where can do everything just by pointing and clicking the mouse.

## SCOPES

The system can be used by the system's administrator such as supervisor and the employees of the company. Each of users has their own interface through login. The project focused more on a small company or subsidiary company or factory or independently owned company where about 50 employees have. This is because it is easy to monitor and maintain. This system is platform independent t runs on linux and also on Windows platform. It is a simple window based attendance system developed for office use.

There are some of the modules included in the developed system that listed as below:

* Admin sign in and sign out
* View records employees
* Registration form for new employees
* Total of employees who are coming late, total of employees who apply leave, list of leave applied by the employees and various reports generated.
* Print reports as reference
* Admin change password
* Employee sign in and sign out
* Apply leave and check leave
* Employee change password

# CHAPTER TWO

## PROJECT PLANNING AND METHODOLOGY

### Introduction

Chapter Two discusse about the case study of the proposed system and the methodology that was used to develop the system. This chapter concentrates the detail description about the technique and procedures that are used to gather the system requirements and will specify the justifications for the chosen methodology for the project.

There are seven phases followed in order to accomplish the developed project. In the preliminary investigation phase, the perceived problems, opportunities and directives that triggered the project are defined and the risk of pursuing the project assessed. Besides, the phase must also establish the project charter that establishes scope, preliminary requirements and constraints as well as each schedule. In the problem analysis phase, the existing system will be studied by collecting factual information from the system users concerning the business and the perceived problems, causes and effects. From all this information, better understanding of the existing system's problems will be gained.

## METHODOLOGY

Incremental model has been used as the methodology. The incremental model combines elements of the linear sequential model (applied repetitively) with the iterative philosophy of prototyping. The incremental model applies linear sequences in a staggered fashion as calendar time progresses. Each linear sequence produces a deliverable “increment” of the software.

### SYSTEM DEVELOPMENT LIFE CYCLE

4.4 Incremental-delivery.eps                                   000FF8ECMacintosh HD                   B8AA5F2E:

**Advantages of incremental model**

* Some working functionality can be developed quickly and early in the life cycle.
* Results are obtained early and periodically.
* Parallel development can be planned.
* Progress can be measured.
* Testing and debugging during smaller iteration is easy.
* Risks are identified and resolved during an iteration; and each iteration is an easily managed milestone.
* Easier to manage risk - High risk part is done first.
* With every increment operational product is delivered.

**Feasibility study**

Feasibility was conducted to identify the best system that meets the all the requirements. This included an identification description, an evaluation of the proposed systems and selection of the best system for the job.

The requirements of the system were specified with a set of constraints such as system objectives and the description of the out puts. It is then responsibility of the analyst to evaluate the feasibility of the proposed system to generate the above results in consideration to various factors

## SYSTEM REQUIREMEN

The study of specification of the requirements is very essential since it’s the primary goal of the system analyst to improve the efficiency of the existing system for the development of the new system, a preliminary survey of the existing system will be conducted. Investigation done whether the upgrading of the system into an application program could solve the problems and eradicate the inefficiency of the existing system.

## Project Facilities Requirement

### Software Requirement

The software requirement for developing the system consists of development platform, development tools, database management system and others software.

*Development Platform (Windows 10 pro 64bit)*

For the Employee Attendance System, Windows 10 pro 64 bit is chosen as the development platform because it has offered many features and advantages such as reliable, easy to use, secure and high performance that suite the needs of the project scope.

*Development Language (Java)*

For the client side, Java is used with JDBC as the connector. Java is chosen as the development tool because it is the most popular language for development

*Database Management System (MySQL)*

On the server side which is the database, MySQL, MySQL - Front and JDBC are used as the driver to connect visual basic to MySQL. MySQL is chosen as the database system because MySQL is a multi- user, multithreaded server that uses SQL to interact with and manipulate data. It is the most popular open source SQL database

*Others*

Others software such as Microsoft Project, Adobe Photoshop 6.0 and Rational Rose will be used. Microsoft Project will be used to develop a standard Gantt chart. Adobe Photoshop is used to design the splash screen of the system.

### Hardware Requirement

There are some minimum system requirements that need to be followed while installing the software that listed as below:

Intel Pentium 300 or higher processor.

Microsoft Windows 7 and any version above

50 MB available disk space

1024 x 768 pixels by 256 color display Mouse

CD-ROM drive

# CHAPTER THREE

## SYSTEM DESIGN

### Architectural design

In this design level, the basic structural framework that identifies the major components of a system and the communications between these components. Below is a general model for the whole system

EMPLOYEE ATTENDANCE SYSTEM (EAS)

Leave report

Employee report

Check-out

Check-in

Update employee

Employee ’module modulemmodule

Delete Employee

View Employee

Add Employee

Authentication

Report module

Leave module

Login module

Attendance

Request Leave

View All Request

Attendance report

View Attendance

Approve Request

### DATABASE DESIGN

Database is an integrated collection of data. These database files are the key source of information into the system. The main objective of database systems is to handle data and data related services. The overall objective in the development of database technology has been to treat data as an organizational resource. Database Management Systems (DBMS) allow data to be protected and organized separately from other resources.

*The organization of data in database aims to achieve three major objectives:*

Data integration.

Data integrity.

Data independence.

*Data structure design*

### Input design

This comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data into a usable form for processing data entry. The input design acts as the link between the information system and the user. The activity of putting data into the computer for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system.

### Output design

Output design is a process that involves designing necessary outputs in the form of reports that should be given to the users according to the requirements. Efficient, intelligible output design should improve the system’s relationship with the user and help in decision making. Since the reports are directing referred by the management for taking decisions and to draw conclusions they must be designed with almost care and the details in the reports must be simple, descriptive and clear to the user. So while designing output the following things are to be considered.

* Determine the kind of information to present
* Make the presentation of information in an acceptable format
* Decision on how to distribute the output to intended receipts

This was the most important phase of my project life cycle .It had connected my maximum time

The block diagram given bellow depicts various fact which were understood by one during the analysis phase.

### INTERFACE DESIGN

It involves documenting the current user interface and the various elements needed to fulfill the user requirements. The images of the user interface pages are included to demonstrate the application’s look and feel.

Description of complete user interface specification:

#### The Login page:

The main screen will contain the login page as shown in the figure below. The login page consists of Administrator login and the User login button. They consist of two text boxes that are username and password. There is also a submit button with the value submit. The Admin login leads to admin Homepage that contains all the roles to be played by the administrators. The user login leads to a user home that gives roles to be played by the employees.

How the user interface behaves:

When an employee input their username and password they must be authenticated before access is granted to the various applications. An error message is issued when the user enters the wrong username or password. The error message prompts the user that they have entered the wrong username or password. In the case of correct password and username then the user is allowed to gain access to the application that they are privileged to use.

As shown in figure below, the employee will only be able to view his personal details and that of his /her emergency contact. On the other hand the administrator is privileged to use all the functionality of the application. Figure below shows the use case diagram of the system’s functionalities:

Admin Login

Authentication

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# CHAPTER FIVE

## SYSTEM TESTING AND IMPLEMENTATION

System testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error. A good test is one that has a probability of finding undiscovered errors. The purpose of testing is to identify and correct bugs in the developed system.

In the code testing the logic of the developed system is tested. For this every module of the program is executed to find an error. To perform specification test, the examination of the specifications stating what the program should do and how it should perform under various conditions.

### Testing method used

#### Unit testing

Unit testingfocuses first on the modules in the proposed system to locate errors. This enables to detect errors in the coding and logic that are contained within that module alone. Those resulting from the interaction between modules are initially avoided. In unit testing step each module has to be checked separately.

*Testing* are the most important steps after the implementation of the developed system. The system testing is performed to ensure that there are no errors in the implemented system. The software must be executed several times in order to find out the errors in the different modules of the system.

*Validation* is the process of using the new software for the developed system in a real environment. The validation phase reveals the failures and the bugs in the developed system. It will be come to know about the practical difficulties the system faces when operated in the true environment.

## SYSTEM IMPLEMENTATION

Implementation includes all those activities that take place to convert from the old system to the new. The old system consists of manual operations, which is operated in a very different manner from the proposed new system. A proper implementation is essential to provide a reliable system to meet the requirements of the organizations. An improper installation may affect the success of the computerized system.

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### Implementation method Used

This is the most secure method for conversion from the old system to the new system is to run the old and new system in parallel. In this approach, a person may operate in the manual older processing system as well as start operating the new computerized system.

This method offers high security, because even if there is a flaw in the computerized system, we can depend upon the manual system. However, the cost for maintaining two systems in parallel is very high. This makes it economically enviable.

# CHAPTER SIX

## LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

### CHALLENGES

There were a lot challenges during the project activity.

*Time constraint*

The research involved a lot of undertakings such as reading, internet activities, analyzing data, system designing, coding, testing and documentation. Therefore time allocated for the project were not enough.

*Resources constraint*

The nature of the project dictated a lot with respect to its monetary demands. A lot of resources were required that could go beyond the financial stature of a student thus posing a major challenge.

## RECOMMENDATIONS

The practicality of this system puts it at the verge of implementation for any interested party with room for adjustments in future. For future developments or improvements, other functionalities can be added over the existing one so that the system may have improved efficiency. Other validation mechanisms can also be added to make the system more secure.

## CONCLUSION

This project has finally come to its conclusion. The system has finally been developed with much emphasis on error limitation and efficiency. The important thing is that the system is robust. There is also a provision for future developments in the system. The entire system is secure. This online system is only subject to improvement and approval.

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