

**MANAGEMENT INFORMATION SYSTEM OF  
PERSONNEL WITH ATTENDANCE MONITORING  
THROUGH IMAGE PROCESSING FOR PROVINCIAL  
TOURISM AND CULTURAL AFFAIRS OFFICE**

**A Capstone Project Proposal  
Presented to the Faculty of the  
Information and Communications Technology Program  
STI College Batangas**

**In Partial Fulfillment  
Of the Requirements of the Degree  
Bachelor of Science in Information Technology**

**John C. Abion  
Elane Jane O. Cuasay  
Poul Adrin M. Dapat  
Jon Karlou C. Lontoc**

**June 2024**



## **ENDORSEMENT FORM FOR PROPOSAL DEFENSE**

**TITLE OF RESEARCH:**                    **MANAGEMENT INFORMATION SYSTEM  
WITH ATTENDANCE MONITORING THROUGH  
IMAGE PROCESSING FOR TOURISM  
BATANGAS CAPITOL**

**NAME OF PROPONENTS:**            John C. Abion  
   Elane Jane O. Cuasay  
   Poul Adrian M. Dapat  
   Jon Karlou C. Lontoc

In Partial Fulfilment of the Requirements  
for the degree Bachelor of Science in Information Technology  
has been examined and is recommended for Oral Defense.

### **ENDORSED BY:**

Mr. James Leonard M. Bicol  
**Capstone Project Adviser**

### **APPROVED FOR PROPOSAL DEFENSE:**

Mr. Jan Jhariel S. Baroro  
**Capstone Project Coordinator**

### **NOTED BY:**

Engr. Rhonnette Amor P. Comia  
**Program Head**

**JUNE 2024**

## **APPROVAL SHEET**

This capstone project proposal titled: **Management Information System of Personnel with Attendance Monitoring through Image Processing for Provincial Tourism and Cultural Affairs Office** prepared and submitted by **John C. Abion, Elane Jane O. Cuasay, Poul Adrian M. Dapat, and Jon Karlou C. Lontoc**, in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology, has been examined and is recommended for acceptance and approval.

**Mr. James Leonard M. Bicol**  
Capstone Project Adviser

Accepted and approved by the Capstone Project Review Panel  
in partial fulfillment of the requirements for the degree of  
Bachelor of Science in Information Technology

Ms. Jerica Meliton-Dalisay  
**Panel Member**

Engr. Rhonnette Amor P. Comia  
**Panel Member**

**Engr. Marcos C Borbon**  
**Lead Panelist**

**Noted:**

Mr. Jan Jhariel S. Baroro  
**Capstone Project Coordinator**

Engr. Rhonnette Amor P. Comia  
**Program Head**

**June 2024**

## **TABLE OF CONTENTS**

	<b>Page</b>
<b>Title Page</b>	<b>i</b>
<b>Endorsement form for Proposal Defense</b>	<b>ii</b>
<b>Approval Sheet</b>	<b>iii</b>
<b>Table of Contents</b>	<b>iv</b>
<b>Introduction</b>	<b>1</b>
<b>Project Context</b>	
<b>Purpose and Description</b>	
<b>Objectives</b>	
<b>Scope and Limitations</b>	
<b>Review of Related Literature/Systems</b>	
<b>Related Literature</b>	
<b>Related Studies and/or Systems</b>	
<b>Synthesis</b>	
<b>Technical Background</b>	
<b>Overview of Current Technologies to be Used in the System</b>	
<b>Calendar of Activities</b>	
<b>Resources</b>	
<b>Methodology, Results, and Discussion</b>	
<b>Requirements Analysis</b>	
<b>Requirements Documentation</b>	
<b>Design of Software, System, Product, and/or Processes</b>	
<b>References</b>	
<b>Appendices</b>	
<b>Resource Persons</b>	
<b>Personal Technical Vitae</b>	

## **INTRODUCTION**

### **Project Context**

Management Information Systems is a type of program that uses computer-based tools that allow you to manage information such as collecting, analyzing, processing, storing, and distributing company data that may be used for decision making. The system entitled Management Information System of Personnel with Attendance Monitoring through Image Processing for Provincial Tourism and Cultural Affairs Office is creating new server-based software to help the personnels of the Tourism Office to have accurate and timely data. This system will be responsible for the daily activities of all personnel in the Tourism Office to ensure they are carrying out their duties effectively.

Management Information Systems have many advantages such as – It collects information accurately to avoid errors in the information; Enhances data security because only the authorized person can see all the information while employees personnel can only see their own information; Improves decision making by gathering day-to-day activities of the employees or personnel as it helps the admin to determine who deserves to be promoted or demoted; Improves operational efficiency by having accurate information as it lessens the delay of the transactions in the Tourism Office, with the help of the Attendance monitoring through Image Processing would accurately tracked their Time-in and Time-out of the employees of the Tourism Department.

The Provincial Tourism and Cultural Affairs consisting of 34 permanent employees, 4 casual employees, and 2 Job Order.

Employee records and information are the foundation of a healthy work environment. The management of employee records includes the arrangement and maintenance of confidential employee documents, like applications, payroll data, certifications, training records, and retirement documents, among others. HR teams can guarantee compliance and prepare for audits with the aid of records management. However, maintaining the employee lifecycle, creating talent

profiles, evaluating salary equality, monitoring productivity and performance, and making strategic decisions about hiring are all supported by having accurate personnel data. The rationale for this study is rooted in the need to address the inefficiencies and inaccuracies. The proposed research aims to develop a management information system with attendance monitoring that addresses these issues, providing a reliable and efficient solution. This study will explore the specific challenges faced by the Tourism Office, analyze potential solutions, and ultimately propose a system that meets the organization's needs.

One of the primary challenges faced by the Tourism Office are;

- The manual monitoring of attendance can be worked around, and the fingerprint biometrics encounter scanning problems.
- Batangas Capitol experienced loss of records because of unorganized records, like SALN, Personal Data Sheet, Daily Time Records and Travel Order Forms.
- Inaccurate information from employees on Personal Data Sheets, Travel Order forms and Leave Forms sent to Human Resources causes delays.

### **Purpose and Description**

The main purpose of this capstone project is to create a webpage that would aim to explore ways to improve the Provincial Tourism and Cultural Affairs Office (PTCAO) operational capacity by analyzing the best practices, building an excellent workplace for employees, and embracing technological innovation. Employee payroll and records management includes organizing and storing confidential employee records, such as applications, payroll information, certifications, leave and transaction records, and schedule. With this aiming to aid the tourism department, HR departments can ensure compliance and get ready for audits.

Ultimately these align with Tourism of Batangas in broadening mission for fostering inclusive growth, empower communities and ensure the sustainable development of the province's tourism department.

## **Objectives**

The goals of this study are to identify the challenges facing the Batangas Capitol Office of Tourism;

- To implement a system that can be used to monitor attendance and leave.
- To create a database for the records of their employees that can be archived and retrieved.
- To develop and set up an automated form filling system that will assist users in avoiding delays and carrying out repetitive information consistently.

## **Scope and Limitations**

### **Scope**

The purpose of "Management Information System of Personnel with Attendance Monitoring Through Image Processing for Provincial Tourism and Cultural Affairs Office (PTCAO)" is to ensure a comprehensive, efficient, and user-friendly solution for tracking and managing attendance. This study is also designed for use by the following:

- **Administrative** – Manage all the information and daily attendance of Provincial Tourism and Cultural Affairs Office (PTCAO) employees.
- **Employees** – View their day-to-day attendance and can manage their own Information.



This system aims to enhance accuracy, reduce manual errors, and monitor the attendance of the employees of Provincial Tourism and Cultural Affairs Office (PTCAO).

**Employees.** This research holds immense promise for the convenience and accuracy of automated attendance training, eliminating the need for manual sign-ins and records that can be updated, archived and retrieved.

**Provincial Tourism and Cultural Affairs Office.** This research empowers the Management of PTCAO to gain precise, real-time data personnel attendance and personnel management information systems.

**STI College Batangas.** This research directly benefits STI College Batangas by providing invaluable insights for refining and enriching its curriculum for information technology students. By shedding light on the specific dynamics of the Management Information System of Personnel with Attendance Monitoring Through Image Processing for Provincial Tourism and Cultural Affairs Office, the study equips students with the knowledge and skills they need to actively contribute to the sustainable development of this unique and promising industry.

**Future Researchers.** In essence, the research on Management Information System of Personnel with Attendance Monitoring Through Image Processing for Provincial Tourism and Cultural Affairs Office (PTCAO), acts as an overview of the current state of events and a guide for upcoming research. It opens the way for several possibilities for study.

The study period will begin the next academic year after the system has been developed and authorized by the panel of experts. The features and functionalities of the suggested system include the following:

- **Log-in** – refers to a feature of the proposed system that will require authorized users to enter their username and password to access their account.
- **Terms and Conditions** – This contains the contract, guidelines, and system requirements that must be met for the system to continue going to the webpage.

### **Admin's Panel**

- **Dashboard** – in this section, the admin can view and add their information.
- **Profile** – This is where the admin can change their personal information.
  - **PDS Files** – This is where the admin can filter his/her Personal Data Sheet and save it.
  - **SALN** – This is where the admin can filter his/her Statement of Assets, Liabilities, and Net Worth and save it.
  - **Saved Files** – This is where the admin can see his/her saved files. This is also where the admin can upload files and save them.
- **Calendar** – This is where the admin can see the date and the daily attendance of the employees.
- **Employees** – This is where the admin can see all the employees' information.
  - **List of Employees** – This is where the admin can see all the employees.
    - **Search Bar** – This is where the user can search for a specific employee.
    - **Permanent Employees** – This is where the admin can see the permanent employees.
    - **Casual Employees** – This is where the admin can see the casual employees.
    - **Job Order Employees** – This is where the admin can see the job order employees.
  - **Daily Time Record** – This is where the admin can see the daily time-in and time-out of the employees.
  - **Leave Credits** – This is where the admin can see the employees leave credits.
  - **Confirmation** – This is where the filed leaves of the employees will be approved or declined.
  - **Files** – This is where the admin can see the files of the employees.
    - **PDS Files** – This is where the admin can see the Personal Data Sheets of the employees.

- **SALN** – This is where the admin can see the Statement of Assets, Liabilities, and Net Worth of the employees.
- **Saved Files** – This is where the admin can see the saved files. This is also where the admin can upload files and save them.
- **List of Present** – This is where the admin can see the list of all the employees that are present either onsite or offsite.
- **List of Absent** – This is where the admin can see the list of all the employees that are absent.
- **List of On-Leave** – This is where the admin can see the list of all the employees that are on-leave.
- **Travel Order Form** – This is where the admin can create a travel order form for the employees involved.
- **Leave Form** – This is where the admin can file a leave.
- **User Log** – This is where the admin can create, edit, and delete accounts.
  - **Create Account** – Allows the admin to create accounts for the employees.
  - **Edit User Account** – Allows the admin to edit user information and access control in the system.
  - **Delete Account** – Allows the admin to delete employees' accounts if necessary.

### Employee's Panel

- **Dashboard** – in this section, the employee can view and add their information.
- **Profile** – This is where the employee can change their personal information.
  - **Leave Credits**– This is where the employee can see their status about their leave.
  - **Daily Time Record** – This is where the employee can see his/her daily time-in and time-out.

- **Files** – This is where the employee can edit his/her files and save them.
  - **PDS Files** – This is where the employee can filter his/her Personal Data Sheet and save it.
  - **SALN** – This is where the employee can filter his/her Statement of Assets, Liabilities, and Net Worth and save it.
  - **Saved Files** – This is where the employees can see the saved files. This is also where the employees can upload files and save them.
- **Calendar** – This is where the employee can see the date and their daily attendance.
- **Status** – This is where the status of leave form and travel order will be shown.
- **List of Present** – This is where the employee can see the list of all the employees that are present either onsite or offsite.
- **List of Absent** – This is where the employee can see the list of all the employees that are absent.
- **List of On-Leave** – This is where the employee can see the list of all the employees that are on-leave.
- **Leave Form** – This is where the employee can file a leave.

### **Limitation**

- It would only cover the office of Provincial Tourism and Cultural Affairs Office (PTCAO).
- Can only be accessible within the workstation of the Provincial Tourism and Cultural Affairs Office (PTCAO).
- The employees have limitations to the system, only the admin can access all the information while the employees can only view and manage their own information.

## **REVIEW OF RELATED LITERATURE/SYSTEMS**

### **Related Literature**

This study proposes the development of a system that automated stamps students' attendance using automated image render ways such as facial detection and identification. Face recognition is challenging due to factors such as face pattern, orientation, shape, varied patterns, and the complexity of face expression. Using multiple datasets, the system is taught to identify the face-representing pattern (positive pattern of face) and set it apart from the surroundings (critical pattern of facial expression) environment. The major goal is to provide an autonomous platform for recognizing faces in video, as well as documenting student attendance by identifying them from their various face patterns. This aids in the automatic maintenance and management of the attendance system (Joachim Betz 2023). This project's main objective is to develop a Face Recognition-based attendance system that automates a manual procedure. This project satisfies the standards for time management and meets the requirements for modernizing the handling of attendance. This gadget is used in the classroom to hold student data, including names, roll numbers, classes, secs, and pictures. An Excel spreadsheet with the instructor's name on it is updated once every hour. An NVIDIA Jetson Nano Developer kit and a Logitech C270 webcam served as the project's processing board and camera, respectively, and the images were extracted using OpenCV. The device automatically detects attendance after processing the image using the LBPH Algorithm, a Haar cascade classifier, and histogram data comparison to a preloaded dataset. An Excel file containing the pertinent class instructor information is updated hourly.

The method proposed in this paper is to record the attendance through images using face detection and face recognition. The proposed approach has been implemented in four steps such as face detection, labelling the detected faces, training a classifier based on labelled dataset, and face recognition. The database has been constructed with positive images and negative images. The complete database has been divided

into training and testing set and further, processed by a classifier to recognize the faces in a classroom. The final step is to take attendance using a face recognition technique in which the input image of a classroom is given and faces of the given image will be detected along with their IDs. The frames of a video taken for a minute are taken into consideration to avoid the missed ones due to rotational issues (C. B. Yuvaraj 2023). Additionally, a smart and automated attendance system for managing attendance can be implemented using various methods of biometrics. Face recognition is one of them. By using this system, the issue of fake attendance and proxies can be solved. In the previous face recognition-based attendance systems, there were some disadvantages like intensity of light and head pose problems. To overcome these issues, various techniques like illumination invariant, Viola and Jones algorithm and Principal Component Analysis are used. The major steps in this system are detecting faces and recognizing them. Then, a comparison of detected faces can be done by cross checking with the database of the student's face. This smart system will be an effective way to maintain the attendance and records of students.

The proposed approach uses Convolutional Neural Network CNN algorithm for training the images and LBPH visual descriptor for image classification. This model will be able to provide more accuracy than existing literature work. Authors have compared their experimental results with the existing approaches and found them satisfactory (Tanya Srivastava 2019). According to Karthikeyan S 2023, who proposes a paper on a web application for an image- based online attendance tracking system (PATSO) that utilizes machine learning algorithm SVM for classification and face recognition techniques to identify and track attendance. The system gets a group or an individual image of students from the user and compares them to a pre-stored database of images to verify attendance. The proposed method is convenient, and accurate, and eliminates the need for manual attendance tracking not only in online mode but also in offline modes. The system's effectiveness was evaluated through a series of experiments, which showed a high accuracy rate of over 90%.

Also, Management information System According to the article employee information management system provided in the invention, when an employee goes to work, goes off work or passes through a gate at other time, the feature data are transmitted to a server in the form of a packet; and due to the mode, convenience is brought to the employee, situations of employee accumulation and congestion at the gate do not happen, the time is saved, and the working efficiency is improved (Chen Cuihua 2019).

### **Related Studies and/or Systems**

When compared to traditional approaches, which are labor-intensive and inefficient, attendance systems have been ranked as one of the essential concerns that reflect domain achievements and their performances have contributed better to organizations, businesses, and universities. Many automatic identification systems have gained popularity, and to maximize their features, much research has been done and many applications have been developed. We provide a structured evaluation of attendance management systems, which have a high potential for controlling, documenting, and tracking user presence in various domains. This study aims to address topics linked to attendance system technologies, including the advantages, schemes and methods, and difficulties. This study also presents a comprehensive schema for article categorization based on a literature survey. Ninety of the 204 papers found were deemed pertinent for this review. The chosen papers undergo a thorough examination, critique, and evaluation in compliance with Kitchenham's recommendations for conducting a systematic literature review. Finally, we point out the important direction that needs to be pursued in this field of study. Also, according to Son, N. T., (et). (2020). Security professionals have been paying close attention to face recognition (FR), particularly when it comes to using closed-circuit television (CCTV) cameras for security surveillance. Even though computer vision has evolved significantly, sophisticated face recognition systems only function well under controlled circumstances. When faced with real-world situations like illumination, motion blur, camera resolution, etc., they

drastically decrease. This article describes how we use interior security cameras, or ATSS, to develop, install, and carry out empirical comparisons of machine learning open libraries in creating attendance taking (AT) support systems. In order to document the appearances of 120 students studying on the third floor of the FPT Polytechnic College building throughout five classes, our trial system was put into use. Our solution is suitable for both a general-purpose attendance system with CCTV and a school, allowing for flexible system expansion. The measurement results demonstrate that the precision is appropriate in a wide range of settings.

When it comes to attendance, when using classroom-based learning, teachers typically find it difficult to maintain track of and manage student attendance. The paper offers a remedy for this by utilizing image processing techniques used in facial recognition. Real-time student attendance tracking software was created. Functional stability, usability, dependability, portability, efficiency, and maintainability are all measured by the ISO 9126. Within the parameters of software engineering, the functionality and user acceptance were evaluated, and the results ranged from acceptable to a very acceptable rating of 3.74. Additionally, this project uses an image processing technique to track attendance in real time. Our project's idea is to provide the faculty database with real-time student attendance information. We use MATLAB as a platform for Image Processing for this. In image processing, we use a camera that is positioned precisely atop the classroom door to take this picture. This camera will take pictures of its immediate surroundings, focusing solely on the face in each shot, and then transmit the data from those pictures to our processing systems. This acquired image will now be subjected to a variety of filtering and masking procedures in accordance with the algorithm that we are employing for image processing and detection in order to produce the desired appropriate image format. After that, our system will compare the input image with the reference points to identify the desired image. It will then identify the student and use IOT to send the student's attendance information to the faculty database. Facial emotion recognition is a topic of great interest in the social sciences and human-computer interaction domains. The science of human behavioral prediction and analysis—particularly the study of human emotion—has



changed dramatically as a result of advances in artificial intelligence (AI). Presently, models installed on remote servers employ the most common techniques for recognizing emotions. We think that closer proximity between the input device and the server model can result in more effective and efficient real-world applications. Computational approaches like edge computing can be useful for the same reason. Time-sensitive applications that might be used in delicate domains can also be encouraged by it. In this paper, we suggest a standalone edge device with a Raspberry Pi foundation that can identify real-time facial feelings. This paper was primarily created using a dataset of people who work in organizations, even though this edge device can be utilized in a range of applications where human face expressions play a vital part. Because the Mini-Exception Deep Network computes efficiently in less time than other networks, a standalone edge device based on a Raspberry Pi has been created using it. With the FER 2013 dataset, this device has surpassed the state-of-the-art in terms of accuracy, achieving 100% accuracy for face detection in real time with 68% accuracy. Future research will combine an Intel Movidious neural computer stick with a deep network on Raspberry Pi to speed up real-time facial emotion recognition system installation and minimize processing time.

## **Synthesis**

Labor costs are a vital resource for any business, significantly impacting its success or failure. Effective management of these costs through the application of contemporary technology, such as boundary task handling, can improve operational efficiency. An analysis of the Arch Empress Company's example suggests that automating payroll and employee attendance with facial recognition technology might significantly boost flexibility and productivity. The company now does these duties manually.

In particular, automatic attendance systems based on facial recognition offer a trustworthy and efficient replacement for manual attendance records. These

systems use NVIDIA Jetson Nano Developer kit hardware and OpenCV and LBPH algorithm software to capture images, process them, and update attendance records in real time. This automation reduces personnel expenses and minimizes errors while ensuring accurate and consistent attendance tracking.

The benefits of these systems include enhanced productivity, real-time data processing, and multi-verification methods that save labor costs and improve security. They are an inexpensive solution because of their low cost and simple installation, and their robustness is guaranteed by testing in a range of environmental conditions. The implementation of cutting-edge biometric technologies by the Arch Empress Company demonstrates the transformative power of technology on organizational performance and provides an example of how it may greatly enhance operations.

For effective management and documentation of user presence across a range of domains, including businesses, organizations, and educational institutions, attendance systems are essential. The development and adoption of automated identification systems has been prompted by the labor-intensive and ineffective nature of traditional methods. These methods have a lot of potential to improve attendance tracking and control, according to a systematic study. This study outlines the benefits, approaches, and difficulties associated with these technologies based on a comprehensive evaluation of 204 publications, of which 90 were chosen for further examination. In addition, the review offers a thorough schema for classifying articles and highlights crucial avenues for further research in this area.

Facial recognition technology has drawn much interest in security and attendance monitoring, especially when used with CCTV cameras. Even with advances in computer vision, motion blur and lighting still cause sophisticated facial recognition systems to perform poorly in real-world scenarios. At FPT Polytechnic College, a trial system with interior security cameras was put in place to record 120 students' attendance in five classes. This system showed adequate accuracy and adaptability, making it appropriate for both general-purpose and

school-specific attendance monitoring. Furthermore, according to ISO 9126 standards, a real-time attendance tracking system that was implemented in classrooms and using image processing techniques demonstrated good user acceptance and functional stability.

To improve real-time applications, more ideas include integrating edge computing with facial emotion identification. Using the FER 2013 dataset, a standalone edge device built on a Raspberry Pi platform was created to identify facial expressions with a high degree of accuracy. This device's efficient and real-time processing capabilities make it promising for many applications, including tracking attendance. In a different project, a camera placed at the classroom door was used to track student attendance in real time using MATLAB image processing. In order to update attendance records via IoT, the system takes pictures, processes them to concentrate on faces, and compares them with reference data. These developments highlight the revolutionary potential of automated attendance systems, which provide effective, dependable, and expandable solutions to modern problems.

## TECHNICAL BACKGROUND

### Overview of Current Technologies to be Used in the System

The HR of the Tourism Department of the Batangas Capitol are currently using Microsoft excel almost in their day-to-day activity in the Office. Their Documents are stored in an Excel which sometimes can be altered or moved, their Attendance are checked manually using excel, their personal records and filling up of forms also uses excel.

This project's proposed increase the operation of Tourism Office employees, a management information system with attendance monitoring through image processing will utilize several advanced technologies to improve accuracy, and efficiency. It would simplify and reduce the amount of work that would aid the Tourism Department and improve their work efficiency.

### Calendar of Activities

Date	Name of Members	Location	Name of Activities
Feb 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	Putting up ideas of what company
March 11, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	Interview at STI College Batangas
March 15, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	First Title Proposal
April 4, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Scholarship Office in Batangas Capitol	Proposed a topic at Batangas Capitol about scholarship

April 23, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Human Resources Department of BatangasCapitol	Got rejected and recommended at the HR Department oof the Batangas Capitol
April 26, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Tourism Office of BatangasCapitol	Got transferred again in the Tourism Department
May 6, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	Second title Propsal
May 22, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Tourism Office of BatangasCapitol	Gathering of Evidence
June 3, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	Mock Defense
June 6, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Tourism Office of BatangasCapitol	Follow-up Interview
June 9, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	STI College Batangas	Final Defense
June 13, 2024	John C. Abion Elane Jane O. Cuasay Poul Adrian M. Dapat Jon Karlou C. Lontoc	Tourism Office of BatangasCapitol	Interview

### Gantt Chart of Activities

MONTH																																
	FEBRUAR Y				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBE R			
ACTIVITY																																
Groupings																																
Search for Company																																
Information Gathering																																
Title Proposal																																
Follow-up Interview																																
Title Defense																																
Analysis of Data Gathered																																
Introduction																																
Purpose and Description																																
Review of Related Lit																																
Synthesis																																
Technical Background																																
Appendices																																
Mock Defense of Capstone 1																																
Final Defense of Capstone 1																																
System Development																																
System Testing																																
Analyzing ISO Result																																
Methodology, Result & Discussion																																
Mock Defense of Capstone 2																																
Final Defense of Capstone 2																																

## Resources

### Hardware:

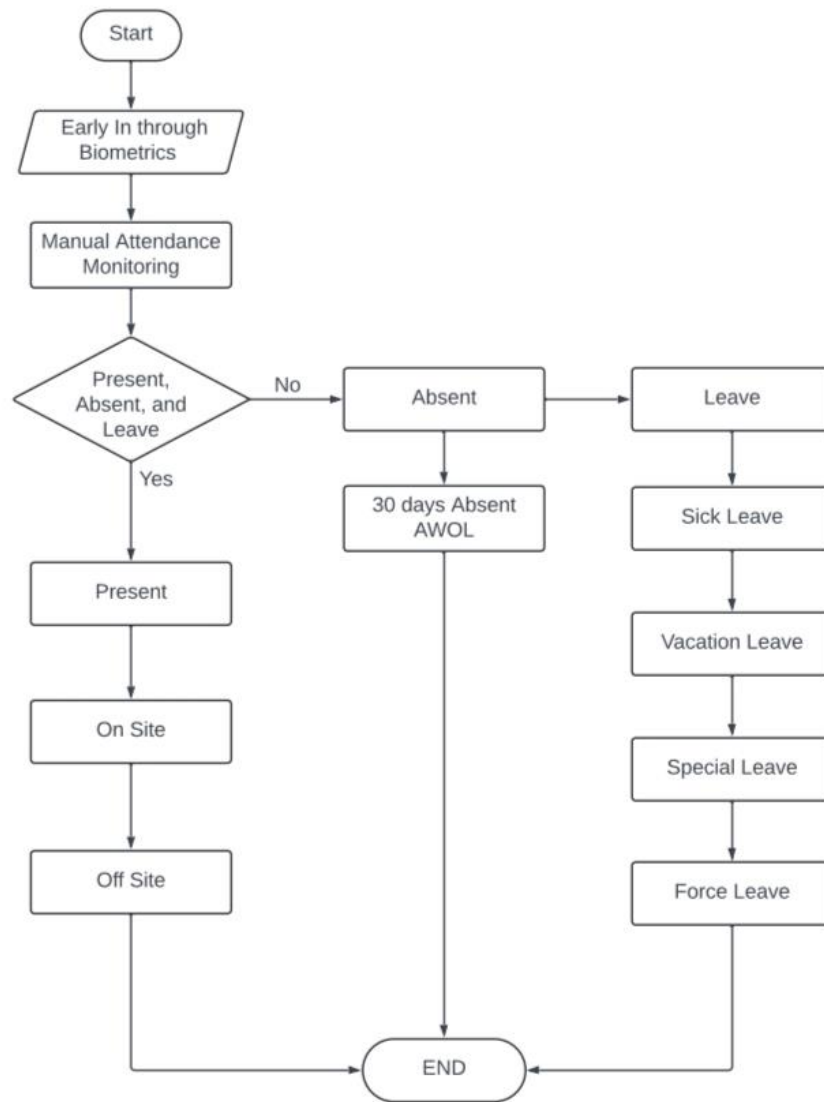
- Device name: LAPTOP-2KTUSGHF
- Processor: AMD Ryzen 5 5600H with Radeon Graphics 3.30 GHz
- Installed RAM: 16.0 GB (15.3 GB usable)
- Device ID: 9AB219A6-A909-4D5B-B6FA-45DF40F4EC3D
- Product ID: 00356-24651-23404-AAOEM
- System type: 64-bit operating system, x64-based processor
- Pen and touch: No pen or touch input is available for this display
- OS: Windows

### Software:

- PHP (Hypertext Pre-processor) – a popular open-source programming language used largely for web development. It is a server-side language that creates dynamic web pages on a web server. PHP code is embedded into HTML code, which allows developers to combine server-side functionality with client-side display.
- OpenCV-python is a library that provides Python bindings for the OpenCV (Open-Source Computer Vision Library), which is an open-source computer vision and machine learning software library. The OpenCV-python package includes pre-built CPU-only OpenCV packages for Python, making it easier to install and use OpenCV in Python environments.

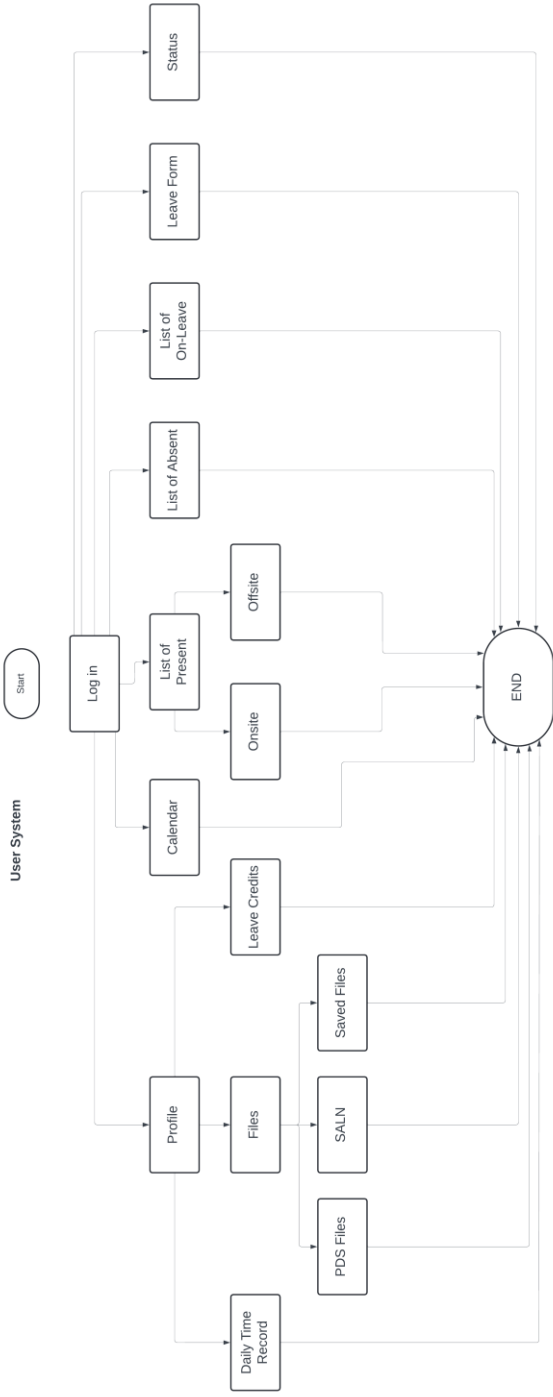
## Current System

Current  
System

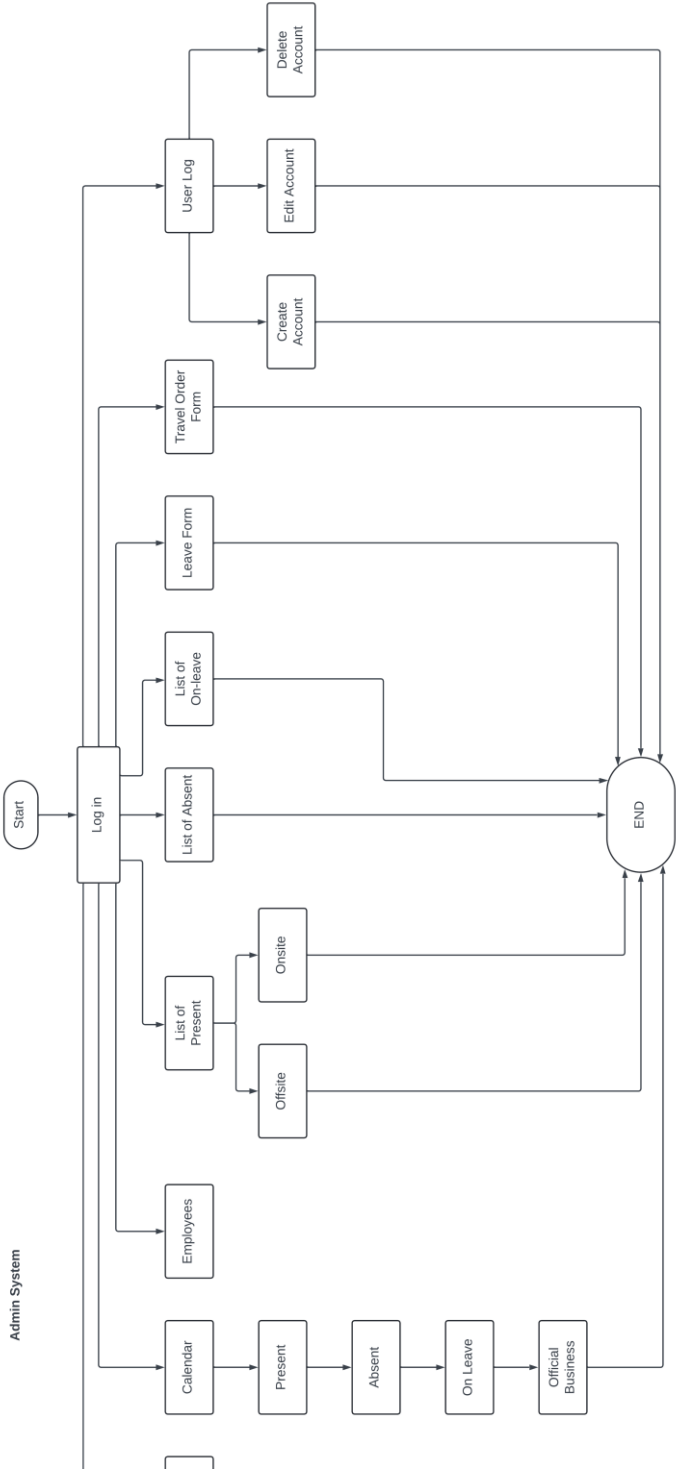


## User's Panel

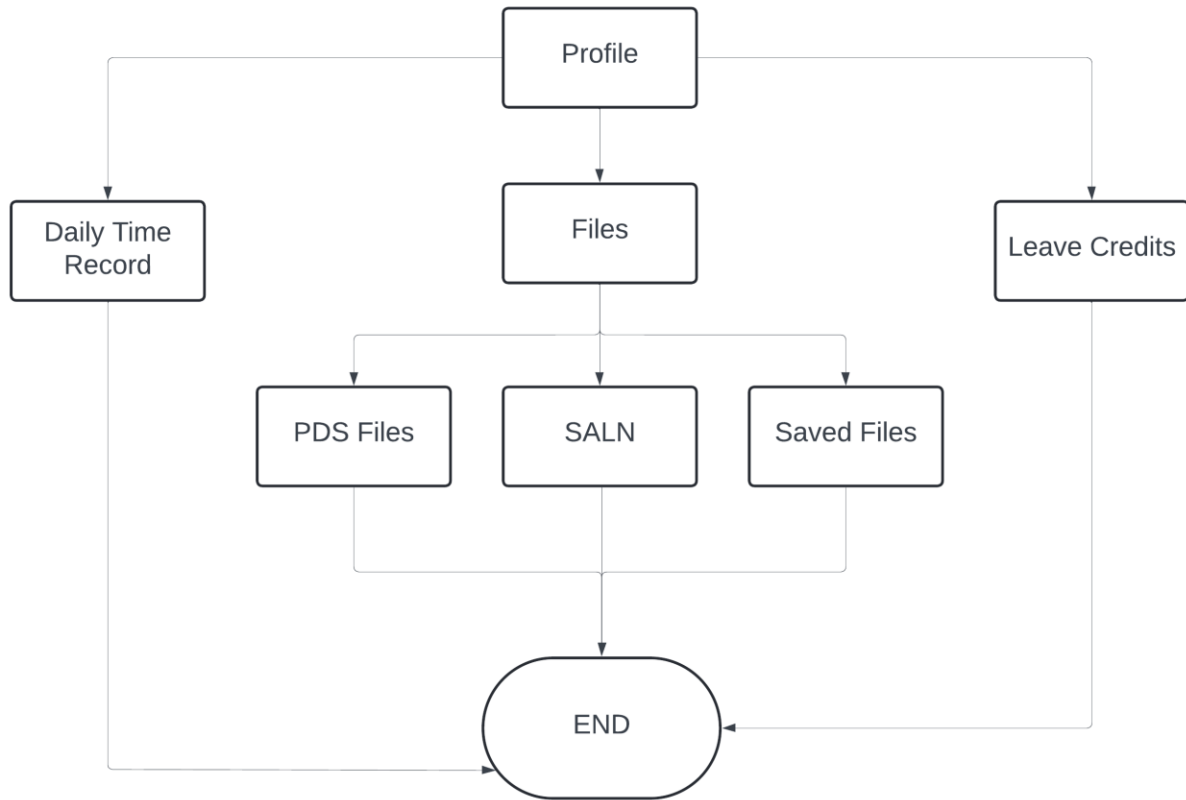




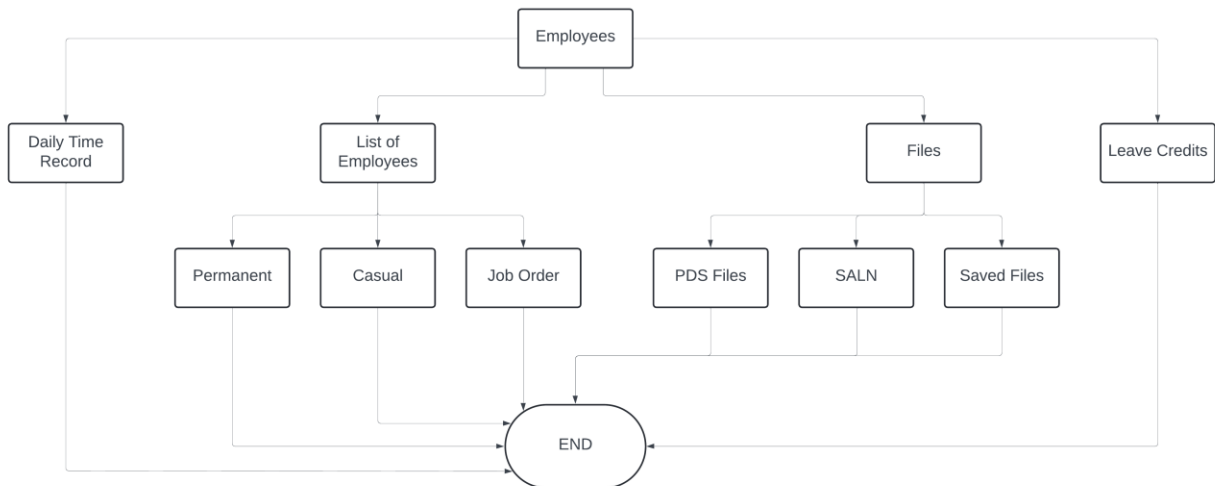
## **Admins Panel**



### Admin System



### Admin System



## REFERENCES

- Ali, N. S., Alhilali, A. H., Rjeib, H. D., Alsharqi, H., & Sadawi, B. A. (2022). Automated attendance management systems: systematic literature review. *International Journal of Technology Enhanced Learning*, 14(1), 37. <https://doi.org/10.1504/ijtel.2022.120559>
- Attendance Monitoring Using Computer Vision*. (2020, May 15). Typeset.io; Springer, Singapore. [https://doi.org/10.1007/978-981-15-7078-0\\_72](https://doi.org/10.1007/978-981-15-7078-0_72)
- Automatic Attendance Monitoring System Using LBPH and HAAR Algorithm. (2023). *Typeset.io*. <https://doi.org/10.1109/icaccs57279.2023.10112924>
- Employee information management system*. (2018, July 3). Typeset.io. <https://typeset.io/papers/employee-information-management-system-4ifu2e4598>
- Espinosa, S. K. K., Paray, M., Tanquiamco, D., Jandayan, C., & Denilla, P. G. (2020). Analysis and Design of Employee Attendance Monitoring Using Face Recognition System for Archempres Fruit Corporation. Social Science Research Network. <https://doi.org/10.2139/ssrn.3636604>
- Implementing Machine Learning for Face Recognition based Attendance Monitoring System. (2019, March 1). Typeset.io. <https://typeset.io/papers/implementing-machine-learning-for-face-recognition-based-1wexzdoqub>
- Joseph, S. B., Dada, E. G., Misra, S., & Ajoka, S. (2022). Parallel Faces Recognition Attendance System with Anti-Spoofing Using Convolutional Neural Network. In Lecture notes on data engineering and communications technologies (pp. 123–137). [https://doi.org/10.1007/978-3-030-93453-8\\_6](https://doi.org/10.1007/978-3-030-93453-8_6)
- Management System of Coastal Enterprises | WorldCat.org. (2020). <https://search.worldcat.org/title/8625687067>
- Matilda, S., & Shahin, K. (2019). *Student Attendance Monitoring System Using Image Processing*. <https://www.semanticscholar.org/paper/Student-Attendance-Monitoring-System-Using-Image-Matilda-Shahin/f5c8fbc9f06996ed60fa440d08965555475bacd5>
- Son, N. T., Anh, B. N., Ban, T. Q., Chi, L. P., Chien, B. D., Hoa, D. X., Van Thanh, L., Huy, T. Q., Duy, L. D., & Khan, M. H. R. (2020). Implementing CCTV-Based Attendance Taking Support System Using Deep Face Recognition: A Case Study at FPT Polytechnic College. *Symmetry*, 12(2), 307. <https://doi.org/10.3390/sym12020307>
- Tirlotkar, P. (2018). Smart Attendance System Using Image Processing. *IJERT*. <https://doi.org/10.17577/IJERTCONV5IS01100>
- Trinos, M. I. P. D., Rios, J. H., Portades, K. G. O., Portades, P. R. O., Langreo, R. M. P., & Abisado, M. B. (2019). *Real-time Class Attendance Monitoring using Smart Face Recognition*. <https://doi.org/10.1109/hnicem48295.2019.9072846>

Rathour, N., Khanam, Z., Gehlot, A., Singh, R., Rashid, M., AlGhamdi, A. S., & Alshamrani, S. S. (2021). Real-Time Facial Emotion Recognition Framework for Employees of Organizations Using Raspberry-Pi. *Applied Sciences*, 11(22), 10540. <https://doi.org/10.3390/app112210540>

R, D. K., T, A., F, N., & P, R. (2022, June 29). *Image Processing Based Student Attendance Monitoring System*. <https://journal.ijprse.com/index.php/ijprse/article/view/635>

Unconventional to Automated Attendance Marking Using Image Processing. (2023, January 1). Typeset.io. <https://typeset.io/papers/unconventional-to-automated-attendance-marking-using-image-260hhacj>

Vilash, P., Kumar, V. P., Reddy, K. S., & Soppari, K. (2022). AUTOMATIC ATTENDANCE MONITORING SYSTEM USING IMAGE PROCESSING. *ResearchGate*. [https://www.researchgate.net/publication/361819005\\_AUTOMATIC\\_ATTENDANCE\\_MONITORING\\_SYSTEM\\_USING\\_IMAGE\\_PROCESSING](https://www.researchgate.net/publication/361819005_AUTOMATIC_ATTENDANCE_MONITORING_SYSTEM_USING_IMAGE_PROCESSING)

Yuvaraj, C. B., Srikanth, M., Kumar, V., Srinivasa, V., & Koolagudi, S. G. (2017). *An approach to maintain attendance using image processing techniques*. <https://doi.org/10.1109/ic3.2017.8284353>

