Software Requirements Specification

for

APC Payroll

Version 3.0

Prepared by

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Contents

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Draft v.01	Alexandra Noynay	Draft fundamental work document.	09/25/24
Draft v.02	Alexandra Noynay	Another Fundamental Draft (Rough)	10/02/24
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Draft v.04	Alexandra Noynay	Finalized	10/29/24

1 Introduction

1.1 Document Purpose

This document outlines the software requirements for the Asia Pacific College (APC) Payroll System, specifically detailing the features and functionalities included in the current release. This Software Requirements Specification is to define the system's capabilities, user interactions, and operational constraints. It serves as a guide for developers, testers, and stakeholders by providing a comprehensive understanding of what the payroll system must accomplish. This includes processing employee salaries, calculating deductions, generating pay slips, and maintaining records of payroll-related data.

The scope of the APC Payroll System covered by this SRS focuses on key payroll functionalities. It includes core subsystems such as employee information management, salary computation, tax and benefit deductions, and the generation of reports for payroll administration.

1.2 Product Scope

The APC Payroll System is a software solution designed to automate and streamline payroll processes at Asia Pacific College. Its primary purpose is to accurately compute employee salaries, apply deductions for taxes and benefits, and generate pay slips. The system also maintains detailed records of employee earnings, tax contributions, and other payroll-related data, ensuring compliance with internal policies and government regulations. By automating payroll functions, the system minimizes human error, reduces the time spent on manual calculations, benefits and simplifies reporting tasks for payroll administrators.

1.3 Intended Audience and Document Overview

This Software Requirements Specification (SRS) document is intended for readers, each with a different focus and use for the information contained within. Primarily, this document is targeted at the client, Asia Pacific College (APC) Administration, and the professor overseeing the project. The client will use this document to ensure that the system's requirements align with their needs for the payroll process, At the same time, the professor will review it for academic completeness and technical accuracy.

For developers, the SRS outlines detailed functional and non-functional requirements that will guide the design and implementation of the system. Testers will reference the document to define test cases that ensure all features meet the specified criteria. Project managers and documentation writers can use the SRS to ensure that milestones, deliverables, and system documentation align with the client's expectations.

1.4 Definitions, Acronyms and Abbreviations

Abbreviation	Definition	Description
DTR	Daily Time Record	A record that details the times each employee logs in and out each day.
ERD	Entity Relationship Diagram	A diagram that illustrates the different tables within the database and how they relate to one another.
ITRO	Information Technology Resource Office	The office within Asia Pacific College provisions and manages information technology resources and provides support.
OT	Overtime	Instances in which employees render work beyond their schedule based on their contract.
OB	Official Business	Instances in which employees cannot log on to the daily time record due to having work-related business off-campus.
UCD	Use Case Diagram	A diagram that illustrates the different functions of the system and its interactions as they relate to each user's requirement.

1.5 Document Conventions

This document follows the IEEE formatting requirements which use Arial font size 11, or 12 throughout the document for text and underlining for comments. The document text is single-spaced and maintains the 1" margins.

1.6 References and Acknowledgments

https://laravel.com/docs/11.x
https://herd.laravel.com/docs/windows/1/getting-started/about-herd
https://vuejs.org/guide/introduction.html

2 Overall Description

2.1 Product Overview

The APC Payroll System is a new, self-contained software product designed specifically for Asia Pacific College to address payroll processing needs. It replaces any existing manual or semi-automated systems currently in use for payroll management, providing a more efficient, accurate, and scalable solution. As a standalone system, the APC Payroll System will integrate seamlessly with other administrative systems, such as employee databases and financial reporting tools, while strongly focusing on automating of salary calculations, tax deductions, and benefit allocations.

The system operates within a larger administrative framework, interfacing with key external components like the HR system for retrieving employee data (personal details, job roles, and benefits) and the accounting system for financial reporting and budget alignment.

2.2 Product Functionality

The APC Payroll System provides comprehensive functionality for managing employee payroll. It automates salary calculations, tax and benefits deductions, and generates employee payslips. The system tracks attendance, overtime, leave, and other payroll-related data, ensuring accurate and timely payments. Payroll administrators can access employee profiles, configure deduction rules, and generate detailed reports for auditing and compliance purposes. Additionally, payroll administrators and managers can approve DTR adjustments. Integrating with HR and accounting systems, it ensures the payroll process is seamless and error-free.

2.3 Design and Implementation Constraints

The system will also be constrained by existing hardware infrastructure, limiting memory usage and processing times to ensure smooth performance on standard office computers. Interfaces with HR and accounting systems must be compatible with the hardware. Furthermore, the system must follow institutional security policies, including data encryption, role-based access control, and compliance with privacy regulations.

2.4 Assumptions and Dependencies

The design and functionality of the APC Payroll System rely on certain assumptions and dependencies. It assumes the HR and accounting systems are already in place and functional, providing accurate employee data and accepting payroll information. It also depends on network infrastructure availability to enable communication between different departments and external systems, such as banks for processing salary payments. The project also assumes that the college will provide the necessary hardware and support resources for implementation, and that users have basic computer literacy to navigate the system.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

The APC Payroll System will feature an intuitive user interface to facilitate ease of use for different user roles. Payroll administrators will have access to a dashboard displaying key metrics such as pending approvals, total salary amounts, and employee records. Employees can view their pay slips, update personal information, and access historical salary data. The interface will be designed for clarity and simplicity, with clear navigation menus and filters allowing users to quickly retrieve the necessary information. The system will be accessible via desktop browsers.

3.1.2 Hardware Interfaces

The system will interact with the college's desktop computers and servers, which host the HR and accounting systems. The payroll system must communicate with external banking systems to process salary disbursements. All hardware interactions will be facilitated through secure connections and standardized protocols to ensure that the payroll data flows accurately between the system and the external hardware components. The hardware interfaces must ensure compatibility with local printers for printing pay slips and other documents.
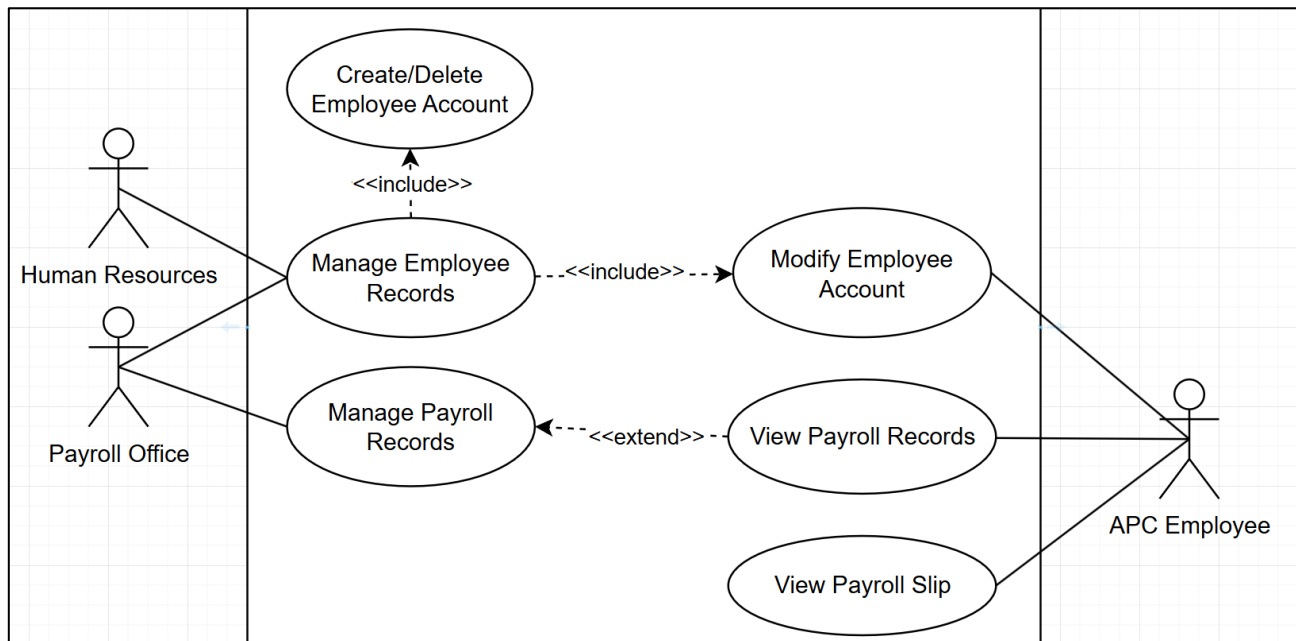
3.1.3 Software Interfaces

The APC Payroll System will interface with multiple software applications, particularly the HR and accounting system. Data from the HR system, such as employee details, salary rates, and benefits information, will be automatically imported into the payroll system. Similarly, the payroll system will transmit salary details to the accounting system for financial reporting. The system will also interact with taxation software to ensure compliance with legal tax deductions. Web services like Microsoft Azure will be employed for external data exchange, ensuring secure and efficient integration with other systems.
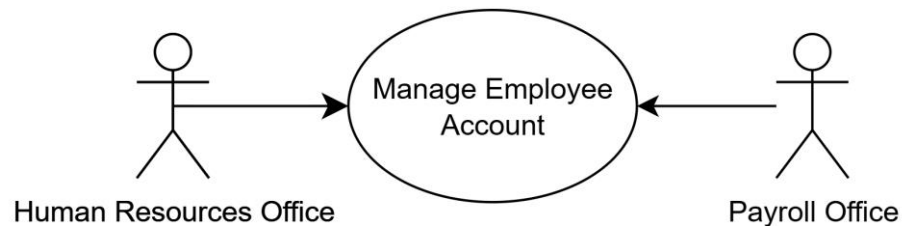
3.2 Functional Requirements

The system must provide core functionalities such as employee data management, payroll calculations, tax and benefits deductions, and salary disbursement. Additionally, it should generate detailed payroll reports for administrators and auditors. The system must support role-based access, allowing different access levels and approval for payroll-related tasks. It should also provide automated notifications to remind users of deadlines and pending actions. The system must also maintain accurate, up-to-date records of all payroll operations and store them securely for auditing purposes.

3.3 Use Case Model

3.3.1 Use Case #1: Manage Employee Account

Author	Jethro Rae B. Garcia
Purpose	Allows HR and Payroll Offices to manage employee accounts in the system.
Requirements Traceability	HR and Payroll Offices must be able to manage the accounts of employees in the system.
Priority	**High:** The functionality is necessary for all other use cases to be possible.
Preconditions	• The user is logged in • HR and Payroll Office has sufficient permissions to view and modify employee accounts • HR has sufficient permissions to create and delete employee accounts
Postconditions	• HR and Payroll Office are successful in viewing and/or modifying employee accounts • HR is successful in creating and/or deleting employee accounts
Actors	Human Resources Office and Payroll Office
Extends	*Not Applicable*
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "Manage Employee Accounts" section. - The user chooses whether to create, modify, or delete an account. - The user saves the changes; the system validates and updates the database. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. - The system returns an unexpected error.
Includes	Create/Delete Employee Account Modify Employee Account

3.3.2 Use Case #2: Create/Delete Employee Account

Human Resources Office

Author	Jethro Rae B. Garcia
Purpose	Allows Human Resources to create and/or delete accounts in the system.
Requirements Traceability	Human Resources must be able to add or remove employee's accounts to the system.
Priority	**High:** The functionality is necessary for all other use cases to be possible.
Preconditions	- The user is logged in - The user has sufficient permissions to create and delete employee accounts
Postconditions	The user is successful in creating and/or deleting employee accounts
Actors	Human Resources Office
Extends	*Not Applicable*
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "Manage Employee Accounts" section. - The user chooses whether to create or delete an account. - The user saves the changes; the system validates and updates the database. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. The system returns an unexpected error.
Includes	*Not Applicable*

3.3.3 Use Case #3: Modify Employee Account

Payroll Office

Author	Jethro Rae B. Garcia
Purpose	Allows APC Employee, Human Resources, and Payroll Office to view and modify an account in the system.
Requirements Traceability	The user must be able to view and modify an account of employees in the system.
Priority	**High:** The ability to change information in the system is necessary to keep the database updated.
Preconditions	• The user is logged in • The user has sufficient and privileged permissions to accomplish their respective tasks
Postconditions	• The user is successful in modifying the account
Actors	APC Employee, Human Resources, and Payroll Office
Extends	*Not Applicable*
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "Manage Employee Accounts" section. - The user views and may choose whether to modify an account. - The user saves the changes; the system validates and updates the database. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. The system returns an unexpected error.
Includes	*Not Applicable*

3.3.4 Use Case #4: Manage Payroll Records

Payroll Office

Author	Jethro Rae B. Garcia
Purpose	Allows the Payroll Office to manage payroll records of an employee in the system.
Requirements Traceability	The Payroll Office must be able to manage the payroll records of an employee in the system.
Priority	**High:** The ability to change information in the system is necessary to keep the database updated.
Preconditions	• Payroll Office is logged in • Payroll Office has sufficient permissions to access and modify an employee's payroll records
Postconditions	• Payroll Office is successful in managing payroll records of employees
Actors	Payroll Office
Extends	*Not Applicable*
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "Manage Payroll Records" section. - The user manages payroll records of a chosen account. - The user saves the changes; the system validates and updates the database. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. The system returns an unexpected error.
Includes	*Not Applicable*

3.3.5 Use Case #5: View Payroll Records

APC Employee

Author	Jethro Rae B. Garcia
Purpose	Allows APC Employee to access their account to view their payroll records in the system.
Requirements Traceability	An APC Employee must be able to access their accounts to view their payroll records in the system.
Priority	**Medium:** Although an employee must be able to access their records, HR and Payroll must be able to use the system more than the employee.
Preconditions	• APC Employee is logged in • APC Employee has sufficient permissions to access their own payroll records
Postconditions	• APC Employee are successful in accessing their payroll records
Actors	APC Employee
Extends	Manage Payroll Records
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "My Payroll Records" section. - The user selects to view a specific payroll period. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. The system returns an unexpected error.
Includes	*Not Applicable*

3.3.6   Use Case #6: View Payroll Slip

APC Employee

Author	Jethro Rae B. Garcia
Purpose	Allows APC Employee to access their account to view their payroll slip in the system.
Requirements Traceability	An APC Employee must be able to access their accounts to view their payroll slip in the system.
Priority	**Medium:** Although an employee must be able to access their records, HR and Payroll must be able to use the system more than the employee.
Preconditions	• APC Employee is logged in • APC Employee has sufficient permissions to access their own payroll slip
Postconditions	• APC Employee is successful in accessing their own payroll slip
Actors	APC Employee
Extends	*Not Applicable*
Flow of Events	**Basic Flow** - The user logs into the system. - The user navigates to the "My Payroll Records" section. - The user selects to view a specific payroll period. - The user selects to view the payroll slip of specified payroll period. **Exception** - The user enters an invalid input. - The user's login credentials return a mismatch. The system returns an unexpected error.
Includes	*Not Applicable*

4   Other Non-functional Requirements

4.1   Performance Requirements

The APC Payroll System must be capable of processing payroll for the entire college workforce efficiently and with minimal delays. The system should handle up to 500 employee records simultaneously, ensuring that payroll processing for all employees is completed within a reasonable timeframe, typically within 30 minutes during peak payroll periods. The system must support high availability, ensuring that users can access it during critical periods such as payroll finalization dates. It must also perform data backup operations regularly to prevent data loss.

4.2   Safety and Security Requirements

Security is crucial for the APC Payroll System due to the sensitive nature of payroll data. The system must implement multi-factor authentication to verify user identities before accessing the system. All personal and payroll data should be encrypted at rest and during transmission. Role-based access controls must ensure only authorized personnel can view or modify payroll information. Regular security audits and updates must be conducted to identify and fix vulnerabilities. The system should also comply with data privacy regulations, including the Security Policies, ensuring that employee data is handled securely.

4.3   Software Quality Attributes

The APC Payroll System must adhere to high software quality standards, including reliability, usability, maintainability, and scalability. Reliability ensures the system processes payroll data accurately and without failure, even under high usage. Usability is critical, as technical and non-technical staff will use the system; the interface must be simple and intuitive. Maintainability ensures that future updates or system changes can be made without disrupting operations. At the same time, scalability guarantees that the system can accommodate a growing number of employees as the college expands.

Appendix A – Data Dictionary/ERD

The entity relationship diagram and data dictionary may be accessed through the following links:

Document	Link
Entity Relationship Diagram	https://github.com/APC-SoCIT/APC_2024_2025_T1_Payroll/blob/main/documents/entity-relationship-diagram.pdf
Data Dictionary	https://github.com/APC-SoCIT/APC_2024_2025_T1_Payroll/blob/main/documents/data-dictionary.pdf

Appendix B - Group Log

Meeting with Adviser (Friday, Aug 30)

Agenda

- More details
- Sir Sean regards the unneeded module as the innovation

Minutes

- Data cleansing is for missed logouts/logins; we don't need to deal with that
- Additions/deductions (especially loans) are cumbersome
- Aim for better UX for payroll. Two benefits:
  - Makes it less prone to error
  - Make it intuitive, so no training is required

Meeting with Payroll Office (Friday, Aug 30)

Agenda

- Overview/review of project details
- APC payroll process inquiries
- How data is received from HR
- How additions and deductions are processed
- Step through each addition/deduction

Minutes

- Some fields are manual
- HR, Finance, Reception are also involved
- Existing payroll systems lack customization
  - Full time and part time differ
- Tax is the most problematic
- Previous attempt moved responsibilities to other involved departments

Meeting with HR Office (Sept 6)

Agenda

- Project overview
- Payroll process involvement of HR Office

Minutes

- DTR/Payroll process:
  - DTR is automatic, goes into APCIS
  - Employee is in charge of how to deal with discrepancies, with approval from supervisors:
  - Before 7 days or before cutoff, this is done within APCIS.
  - After this grace period, this is done manually by HR.
  - If not corrected, automatically taken from sick leave credits/deducted.
  - Cutoff processing:

- o range of dates for pay
  - o 11th - 25th of the month for 30th/31st
    - ▪ 5-day leeway for processing (HR -> payroll -> finance* -> BDO)
  - o 26th - 10th of the month for 15th
- HR involvement:
  - o Full-time employees (reception deals with part-time)
  - o Further cleanup regarding deduction and OT applications is processed during cutoff processing (11th, 26th).
  - o Sick leave conversions, resignation, adjustment
  - o Employee application for deductions

Meeting with Adviser (Sept 30)

Agenda

- Show updates

Minutes

- Suggest renaming to "Benefits Management System" to further limit scope
- Use Case Diagram is good
- Deployment Diagram is good
  - o Current systems need VPN because frameworks are EOL and vulnerable
  - o This system is using an updated framework, no need
- ERD modifications for history
- MVP is good

Meeting with Adviser and Payroll Office (Oct 11, 2024)

Agenda

- Present updates
  - o Scope
  - o MVP
- Clarify:
  - o Payroll cutoff discrepancies
  - o Income tax calculation

Minutes

- Updates:
  - o We will be focusing on the payroll office module
  - o MVP includes account management and basic manual payroll management
  - o Next steps involve automating calculations where possible and allowing for cutoff period management
- Clarifications:
  - o Pay release affects cutoff date, HR manages this
  - o Tax calculations are based on the current cutoff, extended to a whole year, only for that cutoff

October 11: Clarification Meeting with the APC Payroll and Sir Jojo

Appendix C – Test Plan/Test Cases

The test plan and test case documents may be accessed through the following links:

Document	Link
Test Plan	https://github.com/APC-SoCIT/APC_2024_2025_T1_Payroll/blob/main/documents/test-plan.pdf
Test Cases	https://github.com/APC-SoCIT/APC_2024_2025_T1_Payroll/blob/main/documents/test-cases.pdf