

SwiftClock System / Software Requirements Specification (SRS)

Author: Stephen Aranda

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1. Introduction

1.1 Purpose

The purpose of the software that is to be developed is to increase work productivity in the office of the human resource director, Abby Richter and for any other stakeholder that is to use to product, to cut company costs, and to increase data security. Currently, the director of human resources cannot create all the required reports necessary for a daily/weekly business operation such as a time benefits report, missing punches report, and workplace safety reports. Also, multiple third party software is used in conjunction with the program that is currently in use such as a calendar application to schedule appointments and view upcoming business events, functionalities such as this can be included in the software which would ultimately increase work productivity. The human resource department handles employee pay roll, times of attendance, employee benefits, and employee on boarding/off boarding along with any required training that need to be given. Assisting this department of the company by developing the proposed system will help in the pursuit of the mission/goal of Ecological Laboratories Inc, even if it is indirectly.

1.2 Scope

Product Name

- Report Generator
- Time Clock Managing System
- Talent Tracking
- Payroll management
- Calendar View

Overview

The system that is to be developed will be a combination of a report generator and a time clock managing system to manage employee times of attendance, manage talent tracking (employee training's), payroll, and will allow the user to create the necessary reports that the business demands. There will be a dashboard menu where the user will be able to select what part of the application they would like to use. The home section of the dashboard will outline employee hourly wages and who is in or out for the day. There will be a time cards section included that will lead the user to a more detailed version of the in/out board previously mentioned that will show the user a view of when an employee clocks in and out and a reports section which will give the user the ability to create the necessary reports/requests such as a benefits time report, missing punches report, time off requests, production requests, and workplace safety reports. Furthermore, a calendar section will be available for use to help with planning and to view

upcoming business events. The addition and removal of any employee will be included as well from an employees section of the dashboard.

Goals

The criteria success factor for this software will be to ensure that the user is able to create the necessary reports, add/remove any employee, and will allow for the management of employees all without jeopardizing any confidential information. This will result in a much more productive work environment in the office as it will include features that are not currently implemented in the program that is currently in use.

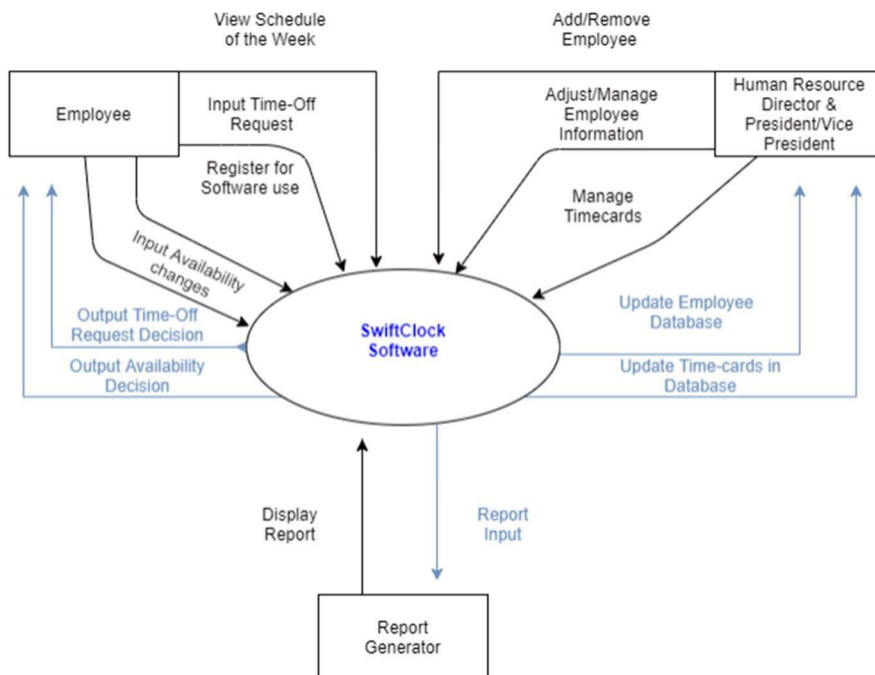
Out of Scope

One functionality currently out of the scope for the product, includes the ability to export a payroll into applications such as quick books or other third-party software. This will, however, be included in a later update. Also, the product is currently limited to PC, mobile use on a mobile device is not currently in the scope.

1.3 Product overview

1.3.1 Product perspective

Data Flow / Software Context Model



System interfaces

The system will eventually have functionalities with other systems, such as QuickBooks to increase productivity and improve usability of the program. This, however, will be included in a future update after release.

User interfaces

The system will provide a graphical user interface, also known as a GUI. It will consist of multiple scenes, the first thing a user will view is a log in screen where they will be able to type in their username and password and will be able to reset both credentials should they ever forget one or the other. After logging in, the user will then be directed to the home screen of the program where there will be a dashboard menu across the top of the page. From the dashboard, the user will be able to click/press on different sections that will lead them to the desired location of the program.

The sections will be named as followed:

- “Home” - This section will direct the user back to the main screen of the program where the user will be able to view when a quick view of what employees are in or out for the day along with employee hours/wages.
- “Calendar” - This section will direct the user to a calendar view of the month for the user to view to assist with planning and scheduling of business operation events along with the ability to view who is scheduled to work.
- “Time Cards” - This section will direct the user to a more detailed version of the in/out board on the home screen which will outline the times that the employees clock in and out, including lunch breaks along with how many hours the employee has worked through the week.
- “Employees” - This section will direct the user to a screen where they will be able to add/remove/manage any employee from the database for any reason. This is also where the training's will be able to be assigned to an individual employee.
- “Reports” - This section will direct the user to a screen where any of the necessary reports that the user will need to make will be made available.
- “Settings” - This section will direct the user to a screen where they will be able to manage their account and program settings.

The database will update automatically when an employee is added or removed from the system.

Hardware interfaces

The system will be available for use on any entry level PC and will require the use of a pointing device such as a mouse. A keyboard will also be required to allow the user to type in necessary credentials and information. The system will run on the mentioned operating system and on any processor.

Software interfaces

The system will be designed for interaction on the Windows, macOS, and Linux operating systems. Additionally, the system will be developed using Java, so IntelliJ IDEA Version 2019.2.1 is the integrated development environment of choice that will be used for the creation of this project and SceneBuilder 8.5.0 will be used for the design of the JavaFX user interface. Adobe XD version 27 will also be used to design the layout of the user interface. H2 Database Engine is the relational database management system of choice for this project.

Communications interfaces

The system will require a stable internet connection (TCP/IP based protocols) in order to communicate with the database server and to receive new employee training updates.

Memory

There are no memory constraints that need to be outlined for this proposed system.

Operations

The system will include a feature that automatically logs out the user if left unattended for an hour, in order to lower the probability of anyone accessing confidential information of any employees. This function will direct the user back to log in screen and will require the user to type in the password again.

Site adaptation requirements

This system will be available for use on the most common operating systems for personal computers; Windows, Apple macOS, and Linux. There is no need for the adaptation onto mobile devices using operating systems such as Android and Apple's iOS as this program is aimed at users who have access to a PC for use at work.

1.3.2 Product functions

The product functions as a means to simplify the management of all employee payroll operations, time cards, employee information such as hire dates and when they are scheduled to work for the admin.

- After the admin signs up and creates their account, they will have access to a variety of different functions.
- There will be a function that generates reports that are necessary for a human resources department.
- The admin will be able to adjust pay wages and add/remove new employees to the database of all the current workers using their name, email address, hire date, their employee ID number, and a variety of other important employee information.

- Additionally, the software will also have the ability to show the admin a calendar like view of the month that will help with planning any sort of upcoming business event along with viewing the schedule of all the employees.
- Employees that are added by the admin will be assigned passwords, and with that password, they will also have access to the program to see when they are scheduled through the calendar function, view what training's need to be completed, view pay wages, and how many hours they have worked in the week.
- There will be a notifications function that will alert the user of any upcoming maintenance work or updates of the software.
- The software will have a settings function where the admin will be able to change their password, email, and adjust what other employees are able to see on the program depending on their position in the company.
- The employees will also be able to change their password and email from their settings function.

1.3.3 User characteristics

The system will be intended for users that know how maneuver an entry level PC. The software will be very user friendly, so users will only be expected to know how to open the program and read instructions. An education level of at least a high school graduate will be recommended. Furthermore, the program will have the necessary contrast to better assist those who are visually impaired that will be interacting with the system.

1.3.4 Limitations

Key	Summary	Description	Labels
<u>CEN3073-22</u>	<u>The system must not be taken down for maintenance between 7 AM and 7 PM on the weekdays.</u>		Limitation
<u>CEN3073-21</u>	<u>The system must be able to run on Windows, macOS, and Linux.</u>		Limitation
<u>CEN3073-20</u>	<u>The software must maintain user information safe with no room for security breaches.</u>		Limitation
<u>CEN3073-19</u>	<u>The software's user interface must be a GUI.</u>		Limitation
<u>CEN3073-18</u>	<u>The software must be written using Java.</u>		Limitation

CEN3073-17	The software will not allow the addition of multiple of the same exact employee.		Limitation
CEN3073-16	The software must log the user out after an hour of idle time.		Limitation
CEN3073-15	The user password must contain a lowercase letter, uppercase letter, and special character.		Limitation

[8 issues](#)

1.4 Definitions

Attrition - Refers to the voluntary/involuntary terminations, deaths, and employee retirements that result in a reduction to the businesses workforce.

Bench-marking - A process of measuring the performances of an organization or team using metrics such as customer satisfaction rate, or sales.

Benefit Time Report - A report that outlines an employee's hire date, the current amount of paid time off (PTO), the total amount of PTO earned, and the total amount of PTO taken.

Confidentiality agreement - An agreement between the employer and employee in which the employee cannot disclose company information.

Grievance - A complaint brought forward by an employee about a violation of law or dissatisfaction with work conditions.

Gross Misconduct -If you perform certain actions that are unacceptable and lead to immediate firing, it is defined as gross misconduct.

2. References

- 29148-2018
- SWEBOK V3.0
- Ecological Laboratories Inc Final Employee Handbook
- Prof. Vanselow CEN 3073 Software Specifications Website:
<https://sites.google.com/site/profvanselow/course/cen-3073?authuser=0>

3. Specific Requirements

SwiftClock: Use Cases & Use Case Diagram

Author: Stephen Aranda

Use Case 1

Name	Add/Remove Employee
Identifier	<u>CEN3073-33</u>
Description	Add/Remove employees from the database.
Pre-Condition	1. The Directors account is already created for use.
Postcondition	1. The Director shall be able to add or remove any employee from the database along with modifying their information.
Basic Course of Action	1. The use case begins when the Director wants to add or remove an employee to or from the system. 2. The system verifies the current database information of all employees in the system. 3. The Director enters the "Employees" tab where they will have the option of adding or removing. 4. The Director enters the employee's credentials if adding. 5. The Director selects the employee that is to be removed if removing. 6. Use case ends.
Alternate Course	A. The System is down for maintenance. A.1. The system enters the information that is to be added or removed into a queue. A.2. Once the system comes back online, the queued addition or removal will be put into effect.

Use Case 2

Name	Display Timecards
Identifier	<u>CEN3073-43</u>
Description	Display timecards for each employee in the company.
Pre-Condition	1. There are employees already within the system.
Postcondition	1. The system shall display the timecards for all employees in the database.
Basic Course of Action	<ol style="list-style-type: none">1. The use case begins when the Director wants to view the employee's timecards or when an Employee wants to view their own timecard.2. The system verifies the database information corresponding to the Director for all employees or to the single employee.3. The system displays all the timecard credentials.4. Use case ends.
Alternate Course	<p>A. The System does not have any employee timecards to display.</p> <p>A.1. The system determines that there are no available timecards.</p> <p>A.2. The system allows the user to add an employee, so the system has something to display.</p> <p>A.3. The system displays all the timecards credentials.</p>

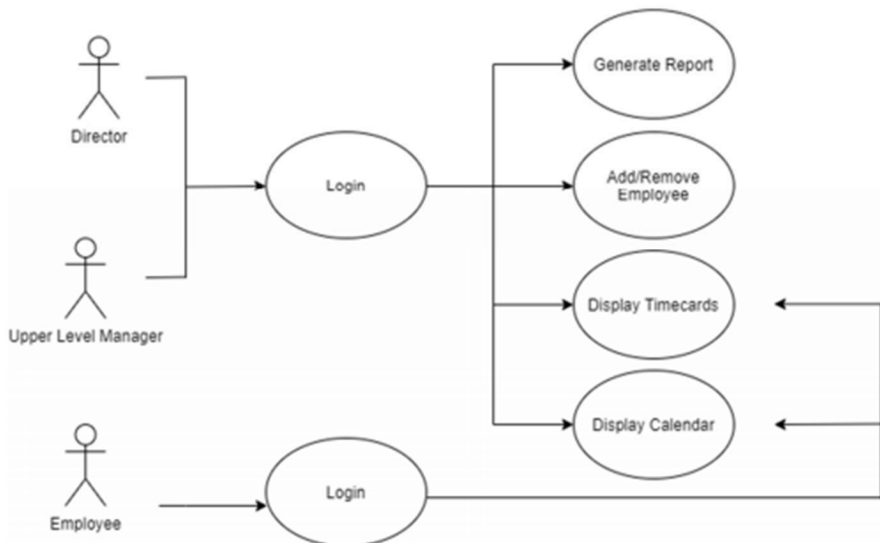
Use Case 3



Name	Generate Report
Identifier	<u>CEN3073-34</u>
Description	Generates selected report using the required information.
Pre-Condition	1. The Directors account is already created for use.
Postcondition	1. The Director shall be able to generate the selected report.
Basic Course of Action	<ol style="list-style-type: none">1. The use case begins when the Director wants to generate a report for company use.2. The Director navigates to the "Reports" tab.3. The system verifies the selected report that is to be generated.4. The system acquires the data needed to generate the selected report.5. The system generates the report as a file that can be printed.6. Use case ends.
Alternate Course	<p>A. The System does not acquire the required information for the report.</p> <p>A.1. An error message will appear for the Director to add any missing information for the report to be generated.</p> <p>A.2. The use cases continue from <u>step 4</u> from the basic course of action.</p>


Use Case 4



Name	Display Calendar
Identifier	<u>CEN3073-35</u>
Description	Displays the Calendar for the Director and for the Employee for viewing.
Pre-Condition	<ol style="list-style-type: none"> 1. The Directors account is already created for use. 2. The Employees account is already created for use.
Postcondition	<ol style="list-style-type: none"> 1. The Director shall be able to view their calendar. 2. The Employee shall be able to view their calendar.
Basic Course of Action	<ol style="list-style-type: none"> 1. The use case begins when the Director or Employee wants to view their respective calendar. 2. The Director or Employee navigates to the "Calendar" tab. 3. The system verifies the information that is to be displayed onto the calendar, such as upcoming events or work schedules. 4. The system displays those events or work schedules onto the calendar. 5. Use case ends.
Alternate Course	<p>A. The calendar displays outdated information.</p> <p>A.1. An error message will appear for the user, letting them know to refresh the program since it was updated recently.</p> <p>A.2. The user refreshes the page.</p> <p>A.3. The calendar is updated.</p> <p>A.2. The use cases continue from <u>step 3</u> from the basic course of action.</p>






Use Case Diagram





Key	Summary	Description	T	Linked Issues	P	Labels
CEN3073-45	The system shall display the main functions of the program on a dashboard that the user can access freely.		Requirement	CEN3073-40		Usability
CEN3073-44	The system shall organize the title of the reports that can be generated in alphabetical order.	When the director is looking to generate a report, the reports that can be generated will be sorted in Alphabetical order for easy searching.	Requirement			Functional

<u>CEN3073-43</u>	<u>The system shall automatically update the calendars for all employees in their respective calendar when it is updated by the Director.</u>	If the director makes a change that involves other employees, then this change should be reflected in all the calendars of the employees as well.	Requirement			Functional
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<u>CEN3073-42</u>	<u>The system shall organize the order of all employees in the database by the last name and will be sorted in alphabetical order.</u>	The system will organize the names of all employees by the Last name and will be sorted in alphabetical order to help with finding an employee.	Requirement			Functional
<u>CEN3073-41</u>	<u>The system shall automatically log out the user if it is left on idle for 10 minutes.</u>	If the program is left on idle for 10 minutes, the system will log the user out to increase security.	Requirement			Non-Functional

CEN3073-39	The system shall be written using the high level language java.		Requirement			Non-Functional
CEN3073-38	The system shall allow the Director to modify existing employee information.		Requirement	CEN3073-31		Functional
CEN3073-37	The system shall allow the Director to assign training's to individual employees.		Requirement	CEN3073-30		Functional
CEN3073-36	The system shall manage employee time cards.		Requirement	CEN3073-29		Functional
CEN3073-35	The system shall display a calendar that will show the employee schedule and upcoming business events.		Requirement	CEN3073-28		Functional

CEN3073-34	The system shall generate the required reports when the button is pressed and the report is selected.		Requirement	CEN3073-25		Functional
CEN3073-33	The system shall add/remove employees while updating the database.		Requirement	CEN3073-24		Functional

[12 issues](#)

4. Verification

Key	Summary	verification approach
CEN3073-45	The system shall display the main functions of the program on a dashboard that the user can access freely.	Inspection
CEN3073-44	The system shall organize the title of the reports that can be generated in alphabetical order.	Inspection
CEN3073-43	The system shall automatically update the calendars for all employees in their respective calendar when it is updated by the Director.	Test
CEN3073-42	The system shall organize the order of all employees in the database by the last name and will be sorted in alphabetical order.	Analysis

CEN3073-41	The system shall automatically log out the user if it is left on idle for 10 minutes.	Inspection
CEN3073-39	The system shall be written using the high level language java.	Analysis
CEN3073-38	The system shall allow the Director to modify existing employee information.	Test
CEN3073-37	The system shall allow the Director to assign training's to individual employees.	Demonstration
CEN3073-36	The system shall manage employee time cards.	Analysis
CEN3073-35	The system shall display a calendar that will show the employee schedule and upcoming business events.	Inspection
CEN3073-34	The system shall generate the required reports when the button is pressed and the report is selected.	Demonstration
CEN3073-33	The system shall add/remove employees while updating the database.	Test

[12 issues](#)

5. Appendices

5.1 Assumptions and dependencies

Assumptions

- There must be a stable internet connection (TCP/IP)
- The database will update in co-ordinance with the software
- Users will access this software from a PC
- The user will have some employees to manage
- The software will keep user information safe and secure
- The software will follow all guidelines and regulations of HIPPA and the employee handbook

5.2 Acronyms and abbreviations

Director: The Human Resource Director, Abby Richter.

System: The Software Product that is to be developed.

Major Stakeholder: Abby Richter.

CRC: Class, Responsibilities, Collaborator.