JEV SOFTWARE ENGINEERS

EMPLOYEE TIME CLOCK

Term Project

Team 9
Jerrica Deloatch Ethan Jalca
CISC 371 - Software Engineering I: Principles
Fall 2021

This document contains all of the deliverables for team 9's term project.

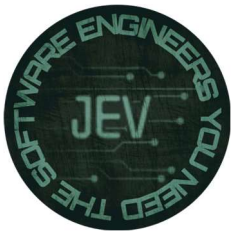
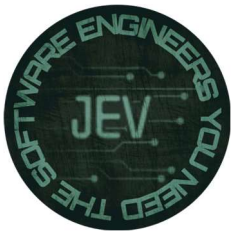


TABLE OF CONTENTS



To: Professor Narasimhaswamy Banavara

From: Jerrica Deloatch, Ethan Jalca

Date: October 21, 2021

Subject: Written Proposal

Purpose

This letter is written by CISC 371 team 9 (JEV) to propose a concept for our group project.

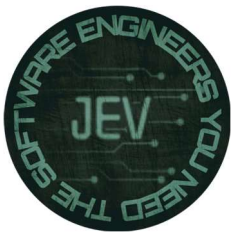
Situation

In business, for an employer to pay their employees fairly, there needs to be a way to document and store the time an employee spends working.

Proposed Solution

JEV would like to help companies complete this everyday task. Therefore, for our team project, we would like to develop an employee time clock. Our employee time clock will allow the access of multiple users. This is to accommodate the various employees who arrive at and depart from their workplace. Of these users, there will be two variations. The most common type of user will be the standard user. Standard users will be given one privilege, and that is to create time punches. Administrative users will be able to create, delete, and modify the punches of any user. These privileges come in handy when an employee forgets to clock in or clock out. Administrative users will also be allowed to add new users to the employee time clock system, as well as remove existing users.

JEV is also aware of laws regarding lunch breaks for full-time employees and will incorporate functions and features for unpaid breaks. So, all users will be capable of creating multiple clock-ins and clock-outs during their arrival, departure, or lunch breaks.



TEAM CHARTER

CISC 371 - Software Engineering I: Principles - Term Project

MEMBERS

Ethan Jalca

Jerrica Deloatch

OBJECTIVE

Team 9 will develop an employee time clock system, along with supporting documents for its use.

TIME COMMITMENT

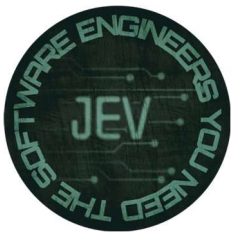
Team 9 will work together for the next two months, with weekly efforts preoccupying about 25% of each member's time.

DELIVERABLES

Team 9 will deliver a written proposal asking for permission to complete the proposed task, along with this team charter, a project concept summary, a professional business report, resource usage and estimated costs logs, program codes, a demo site, and a live presentation of its employee time clock.

REPORTING PLAN

Team 9 will meet weekly to assign specific tasks to each of its members. Team 9's leader will discuss any late task and progress made towards term project's completion. Members will sign performance and appraisal percentages in the Group Meeting Log Sheet.



TEAM BIO

Jerrica Deloatch

Jerrica Deloatch is an alumnus of Ocean County College and a current student at Mercy College. She loves technology and is currently majoring in Computer Science. Jerrica currently has an associate degree, which she earned in 2020, and is working hard to earn a bachelor's degree. After earning her bachelor's degree, Jerrica will continue to pursue a higher education at Mercy College.

Jerrica's professional goal is to become an amazing technical writer and indie game creator. Once she has stabilized her career and income, she hopes to become charitable and fund the college education of high school students who are struggling in poverty. She would like to mentor those students and help them reach their goals.

Strength: Technical Writing, Writing, Reporting, Designing

Weakness: Initial coding

Phone: (347) 780-3645

Email: jerricadeloatch@gmail.com

Website: jerricadeloatch.com

Communication Preference: Phone or Email

Ethan Jalca

Ethan Jalca is a current student at Mercy College pursuing a bachelor's degree in computer science. He currently is a full-time student with a part time job as a teaching aide for grades pre-k and kindergarten primarily. He enjoys working with technology, often helping his coworkers with any technical issues they may come across. After he obtains his bachelor's degree, he will apply for jobs pertaining to technology.

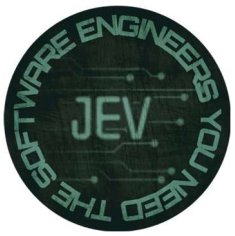
Strength: Programming/Coding

Weakness: Writing

Phone:

Email:

Communication Preference: Phone or Email



PROJECT CONCEPT SUMMARY

PROJECT SELECTION AND RATIONALE DESCRIPTION

After careful consideration, JEV chose to design an employee time clock due to the pros and benefits it may provide. We at our company JEV, stand on being conscientious, ethical, and fair, and we maintain that by installing an employee time clock within a business, employers and employees will also conduct themselves in a similar manner.

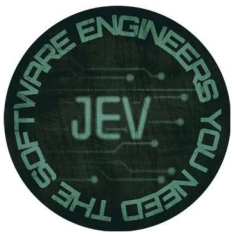
For these reasons, JEV's employee time clock is designed and developed to help employers easily track and schedule their employees' attendance. The clock aims to solve the minor problems encountered by employers wishing to pay their employees appropriately. We understand that employers must document events such as absences, early departures, and supplement time worked, in order to do so.

All administrative users of JEV's employee time clock will have access to additional features, such as modifying clock ins and clock outs, viewing absent requests, adding new users, etc. This is very helpful for changes in work circumstances, as well as correcting errors.

Seeing as time monitoring is vital, our company, JEV, perceives that our employee time clock will absolutely be worth the investment. For this reason, JEV anticipates a satisfactory rate of sale, regarding our employee time clock. JEV believes the market potential for our project to be substantial, while the initial investment minimal, and the return on the investment great. We also expect to have positive client reactions.

JEV assumes that we will be done developing our employee time clock on the 3rd of December, in the year of 2021. We trust that minimal risk will be involved and the development process will progress smoothly.

PROJECT PLAN



This page contains team 9, JEV's first project plan and schedules including milestones according to the deliverable requirements.

Phase one of our team project consists of delivering our project concept summary and proof.

This includes each team member's bios, contact information, strengths, weaknesses, commitment to our team, leadership arrangement, and communication preference.

Considering that these tasks can easily be accomplished, JEV will attempt to have the task done within the first week of the team project being assigned.

As for our project concept summary, JEV anticipates that more time will be needed for this deliverable. We plan to have our initial reports fully completed by the 14th of November, in the year of 2021. This will give us roughly one month to do so.

Our goal will have been met if all documents are satisfactory and coding has begun by the 17th of November, in the year of 2021.

JEV plans to submit all of Phase one deliverables in a timely manner and according to the due date of the 19th of November, in the year of 2021

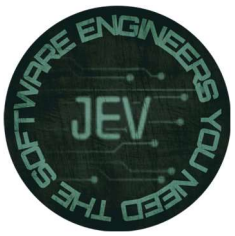
Phase two of our team project consists of delivering our fully completed reports and code.

This includes a completed SRS, DDS, architectural design outline, project plan, executive summary, instruction manual, software prototype, reference page, and appendix.

JEV anticipates that more time will be needed for these deliverables compared to the deliverables of phase one. We plan to have our reports fully completed by the 10th of December, in the year of 2021. This will give us roughly one additional month to do so.

Our goal will have been met if all documents are satisfactory and coding has been completed by the 15th of December, in the year of 2021.

REQUIREMENTS DEFINITION (SRS DOCUMENT)



PRODUCT SCOPE

Employee time clocks monitor employee activity, record attendance, and check employee personal and salary information. Employers use employee monitoring to track performance, minimize legal liability, and address other security concerns.

PRODUCT FUNCTIONALITY

Administrative user capabilities:

Access system using id and password

Add and or remove employee and employee details

Submit time punch

Change employee password

Approve or deny request

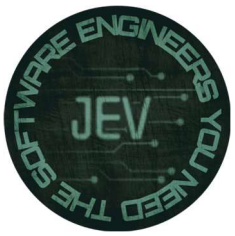
Standard user capabilities:

Access system using id and password

Submit time punch

Submit request

REQUIREMENTS DEFINITION (SRS DOCUMENT) continued



OPERATING ENVIRONMENT:

Hardware: PC

Operating System: Windows, macOS, and Linux

Versions: Windows 7 and newer, Mac OS X 10.11 or higher, Linux: RHEL 6/7

DESIGN AND IMPLEMENTATION CONSTRAINTS:

Hardware Constraints: Minimum 1GB Ram

Device Constraints: Designed only for PC

Language Constraints: Only in Python

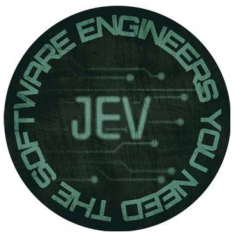
Time Constraints: One month

User Documentation:

A user manual will be provided with employee time clock.

External Interface Requirements:

Application will contain a main screen, standard user interface and administrative user interface.



ADD EMPLOYEE

Administrative user can add employee using sign in credentials

Stimulus: Request add employee

Response: System displays user profile

Priority level = High

LOGIN

Administrative user generates sign in credentials for employee login

Stimulus: Request login to profile

Response: System removes employee details from database

Priority level = High

REMOVE EMPLOYEE

Administrative user can remove employee using sign in credentials

Stimulus: Request remove employee

Response: System removes employee details from database

Priority level = Normal

MARK ATTENDANCE

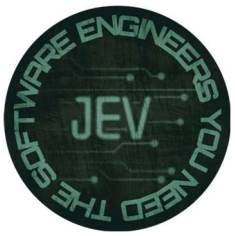
Administrative user can view employee attendance

Stimulus: Request view employee attendance

Response: System displays employee attendance

Priority level = High

REQUIREMENTS DEFINITION (SRS DOCUMENT) continued



SOFTWARE QUALITY ATTRIBUTES

Usability: This application will be designed for ease of use to accomplish desired tasks. Users will have access to support provided with the system.

Security: This application will be secure, protect data, and defend information from unauthorized access. This application will not create any safety or security hazards for any users of product.

Functionality: This application will work as intended. Appropriate responsibilities will be assigned to congruent architectural elements.

Reliability: This application will aid Administrative users and Payroll users in attendance monitoring. The application will be stable and available for daily use.

Learnability: This application will have clear and concise user instructions, tutorials, and user manuals. Application will require minimal time and training for user's use.

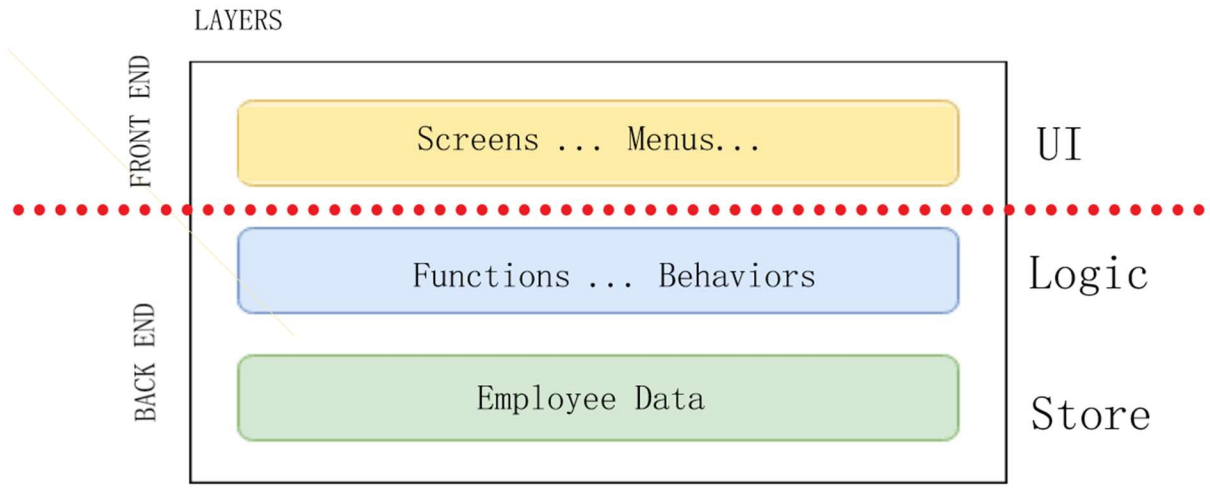
ARCHITECTURAL DESIGN

Layered Architecture Pattern

Team 9 chose to create a user interface on top of a database.

Team 9 chose a layered architecture pattern, because it is easy to develop and maintain, and with three members, specific time constraints, and possibly inexperienced software engineers, a layered architectural design with simplicity was an excellent choice.

A basic visual aide for understanding our approach to developing JEV's Employee Time Clock is displayed below.



This diagram shows the front-end development of JEV's Employee Time Clock, which consists of the various screens and menus a user will interact with in order to use the function and features in the back-end portion of development. Considering they have permissions to access a certain data, once selected, the data is displayed on the screen.

ARCHITECTURAL DESIGN continued

Backend

TABLE DESIGNS

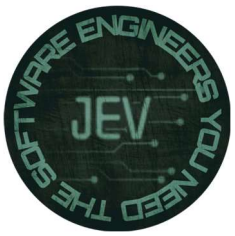


Table for user credential storage:

login		
employeeUID	password	adminq

Table to store employee personal info:

employee				
first_name	last_name	address	social	birthday

Table that stores request messages:

calendar	
employee	date

Table to store time punches:

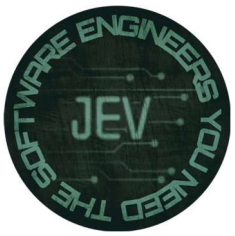
clocks		
employeeID	date	clockTimes

TEST SPECIFICATION

“Exit Program”button exits program

“Login”button calls “LOGIN”window

incorrect credential displays error message



standard user credential display standard user welcome screen

“Create Time Punch”button opens confirm punch window

“Punch”button displays message for user and adds to time keeping database

“Request”button opens Request window

“submit”button send request to to request database

admin user credentials display welcome admin user screen

“Submit Punch”button opens confirm punch window

“Punch”button displays message for user and adds to time keeping database

“View Records”button opens user records window

“Show Records”button shows record query

“Edit Record button displays pre populated field window when a id is enter and clicked

“Update Record”button updates user record when clicked

“Delete Record from Database”button deletes record of corresponding oid when clicked

“Add Record to Database”button submits record to employee info database

“Time Records” button opens the time record window.

“Delete Punch”button removes time record from query and database

Add Manual Punch”button opens new window with fields

“ADD Punch”button submits manual punch to database

“Update Punch”button open new prepopulate when number is enter in OID field and clicked

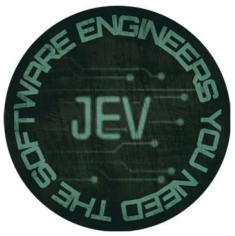
“Update Punch”button submits updated record to database

“Create Login”button opens login modifications screen

TEST SPECIFICATION continued

“Show Login Records”button displays query in new window

“Edit Login”button opens prepopulated editor window when and OID is enter in the field box



“Update Login”button adds record to login credential database

“Delete Login”button deletes a record of login credential when oid is entered in the field.

Create Login”button adds new record to database when info is entered in form

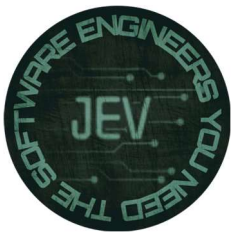
“View Request”button displays request query

“Delete Request”button deletes the record link to the OID enter, when clicked

EXECUTIVE SUMMARY

“The software engineers you need”.

“We listen, comprehend, and deliver, in order to provide customer satisfaction”.



JEV is a group of tWOcomputer scientists that joined together to create a software program to assist companies in completing a standard procedure. After much thought, we determined that developing an employee time clock would benefit both companies and us.

The employee time clock we have created is fully functional and allows for two levels of users with multiple user access. Of these users, there are administrative users, capable of creating, deleting, and modifying the time punches of any user. These are privileges that come in handy when an employee forgets to clock in or clock out.

Administrative users can also add new users to and remove existing users from the employee time clock system. But all users are capable of creating multiple clock-ins and clock-outs during their arrival, departure, and lunch breaks. A message portal has been established to provide a means of communication between users and admins. This will come in handy when an employee wants to request a day off.

Moving forward, JEV would like to expand our horizons by adding a payroll user to our functioning pc version. We also have a future goal of creating a mobile application version of our product.

We look forward to our future growth.

JEV

REFERENCES

BUILDING A GUI FOR A DATABASE