



School of Computer Sciences

CAT201 Integrated Software Development Workshop

EMPLOYEE PAYROLL SYSTEM

Github Link:

<https://github.com/cmariyah/CAT201Project-Group51-Employee-Payroll-System-master.git>

Project members :

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1. Introduction

- Background

Employee Payroll System is a desktop application that is designed to help small business employers manage employee payroll process. This application is developed to help employers to calculate the employee's salary based on their working hours. This application contained an embedded database system (SQLite) that allows employers to store all their employees and employee details. Employers could also store all the employee positions that exist in their company or business and the hourly rate as well as overtime rate for the positions.

Aside from storing Employees and Positions, the system is also built with a clock-in clock-out system that allows employees to punch in and punch out during the work hours. This application will automatically calculate the total hours worked for each employee and store them in the system. It will also help to calculate the salary for employees based on their position's hourly rate and apply the overtime rate to the hours that exceed 8 hours each day.

The application will generate four different tables to allow employers to view all the positions, employees, employee clock-in and clock-out time for each day as well as total hours and salary for each month. A button to filter the attendance based on date and button to filter salary by month and year are added to help easier viewing of the tables when the data gets too big.

This application also enables employers to download all the tables in the application into PDF file for documentation purposes.

All the changes made in the application will be saved and remained after exiting the program as long as the database is not deleted. If the database file is deleted, the application will automatically create a new database file under the same folder as the application the next time the application is being run again.

- Previous Work

The Original Employee Payroll System is a simple desktop application with an embedded database system (SQLite) that is also designed to help employers manage the payroll process. In the original application, it is designed to be used by the owner or employer only. The system allows the user or owner to store the information of their Employee and assign the department of the employee. The System also allows the owner or employer to store list of departments, and the salary details for each department salary for employees is determined by their department.

The application has one main page that allows the owner or employer to view the table containing all the employee's details and salary stored in the database.

2. Motivation

We have chosen this project because it uses 100% Java language and has a simple GUI structure. We also noticed that the project implemented the use of SQLite as an embedded database for the application so we would like challenge ourselves to try and implement a simple database system as well because the input for our previous assignments during first year has only been stored in a simple text file. We are intrigued by the idea of being able to implement the basic database knowledge that we have learned into our system.

So, we gained the motivation to make more structured databases with additional functions and a better GUI using the GUI form in the IntelliJ IDEA. We have decided to change the payroll system so that it will allow the employees to clock in and clock out and automatically calculate the employee's salary based on the total hours. We also took inspiration from our first assignment that required us to do a simple file conversion in Java and

decided to add a function that will convert the table in the system to a pdf document so that the manager can print the table. Mayratdaa, who is in charge of the database and functions works together with Chusnul, who is in charge in the design of GUI to connect between the two elements. We as a team motivate each other as we learn all the new knowledges while doing this project.

3. Enhancement

Original and updated module diagram

Module	Functionality	Team member
Database Manager	<p>Original module</p> <ul style="list-style-type: none"> - This module handles all the back-end side of the application - This module manages the database and the all the logical operations to retrieve and insert data into database, hold all the functions/methods needed to be called by action listener in application's GUI - Connect to database using jdbc SQLite driver - Create SQL Table for login table , table employee table and department table - Create methods for Inserting data into all three SQL tables - Employee Net Salary is store in their department table , all employee in the same department has the same salary <p>Updated module</p> <ul style="list-style-type: none"> - This updated module also still handles all the back-end side of the application - This updated module still manages the database and the all the logical operations to retrieve and insert data into database, hold all the functions/methods needed to be called by action listener in application's GUI - Connect to database using jdbc SQLite driver - Keep the Log-in Table and Employee Table in the original module . Department Table is replaced with Position Table . Position table is used to hold the position name , hourly rate for the position as well as Overtime rate - Add new Attendance table to the date that employee come to work , the time they 	Mayratdaa

	<p>clock in and also the time that they clock out</p> <ul style="list-style-type: none"> - Add Methods to verify if employee already clock in or clock out for the day and method to let employee clock in and also clock out - Add new Employee Salary table to hold the total hours worked and the total pay they earned for each day - Add method to calculate the hours worked from the Employee Attendance table by finding the time difference between the clock-in hours and clock-out hours - Add method to retrieve the hourly rate and overtime rate from Position table for each employee based on their position name - Add method to calculate the total pay each day based on employee total hours , hourly rate as well as overtime rate from Attendance and Position Table to store into the Employee Salary Table - Add method to retrieve array of objects for Employee table data , Position table data and Attendance data in order to be displayed in JTable - Add method to group the salary each day into month and year and store into array of object to be displayed in JTable - Add method to Search for attendance for a specific day only - Add method to Search for salary on specific month and year 	
TableToPDF	<ul style="list-style-type: none"> - This Module doesn't exist in the original source project. - This module handles the back-end logical operation for the button download PDF file in the GUI and is called by the ActionListener in front-end side of the application - Add new functionality to enable user to download the table in the application as a PDF file - Add method to convert the Employee Details Table into PDF file - Add method to convert the Employee Attendance Table into PDF file - Add method to convert the Employee Salary Table into PDF file 	Mayratdaa

UserTypeFrame	To display user type menu for user to choose their account type	Chunsul
ChangeUsernameFrame	Form for user to fill in to change new username for manager user account	
ChangePasswordFrame	Form for user to fill in to change new password for manager user account	
PositionFrame	Display the Position menu frame for user to choose either add, delete the positions data and the table of list of positions that exist in database	
DeletePositionFrame	Form for user to fill in to add a new position	
AddPositionFrame	Form for user to fill in to add a new position	
ManagerLoginFrame	Display Employee menu to login	
DashboardFrame	Display the Dashboard menu frame for user to choose the activity frame that they want to do	
EmployeeSalaryFrame	Display and download The employee salary table that are in the database or user can choose a specific month and year of salary data to display in the employee salary table	
UpdateEmployeeFrame	Form for user to fill in to add a new employee	
DeleteEmployeeFrame	Form for user to fill in to delete a new employee	
AddEmployeeFrame	Form for user to fill in to add a new employee	
EmployeeDetailFrame	Display and download the employee personal detail table list	
EmployeeAttendanceFrame	Display and download The attendance table that are in the database or user can choose a specific date of attendance data to display in the attendance table	
EmployeeFrame	Display Employee menu to login, clock-in, clock-out	Najwa
MenuProfileFrame	Display the Employee Management menu frame for the user to choose to change either username or password	
EmployeeManagementFrame	Display the Employee Management menu frame for user to choose either add, delete or update the employee data	Iffah

4. GUI

- Installation instruction
 - o For GUI element, Chunsul has decided to use GUI Form that is provided in the IntelliJ IDEA. This GUI Form has one java class and a form to design the GUI. There is nothing install as for the GUI elements
- How to use
 - o The Employee Payroll System can be excess and use by opening the executable JAR provided in the project file zip. The executable JAR file is located in the “Executable JAR” folder. Here is the detail to login into the system:
 - Manager Account:

- Username : admin
- Password: 1
- Employee Account :
 - Existing Employee ID : A0001
 - The employee account or detailed can be added in the manager part.

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