

PROJECT PAYROLL DESIGN

The main objective was to design a payroll system which will handle all the finances including payment of salaries at the end of every month. It will also ensure payment of daily wage workers as well as the sales commission for Salaried Employees on every Friday.

I have used a MySQL database and SQL WorkBench for Database management. I have created 5 Classes in total:

- Employee
- FKPayrollDesign(main class)
- Conn
- SalariedEmployee
- HourlyEmployee.

The Employee contains all the details of each employee including ID, password, address, CategoryOfWorker etc. The classes HourlyEmployee and SalariedEmployee inherit Employee class. HourlyPaidEmployee contain methods for finding the daily earning using the hourly rate of each worker and SalariedEmployee contains methods for finding daily sales commission as well as monthly earnings.

The FKPayrollDesign class contains the main function. It contains the main method which will act as a menu in the console for the user. It also contains the method to RunPayRoll() private method.

The Employee contains the functions AddEmployee() and DeleteEmployee(). For this only Name and Mobile number are sufficient for deleting a particular record (It can be further improved by introducing a password field in the database and using this as a validator so that DeleteEmployee() function is not misused).

HourlyEmployee holds the PostTimeCard() as well as CalculateBonusPay() and changeHourlyRate() function.

SalariedEmployee holds the PostSalesReceipt() and CalculateBonusPay() function for calculating commission.

The Conn class contains methods for establishing connection with the MySQL server and database file.

To ensure that only one Post is made by every employee each day, a column is maintained in the database called 'CardFlag' whose value is set to 1 when a Post has been made. That employee cannot make another post in that Day. At the time when RunPayRoll() function starts, all these flags are reset to 0, so the employee can Post again the next Day.

DESIGN IMPROVEMENTS

The design is not perfect now. It can be done a lot better. Now the payroll can be called by any user but a specific user should be created to run that eg admin. The SalariedEmployee and HourlyEmployee classes should be made to implement a Payment Interface which will contains declarations for common methods of handling payments.

I have made a single table for both the type of employees . There should be a separate table for each.

Many important methods like Add/Delete Employee have been declared as protected,they should have been made private and called via other protected functions,to ensure better security.

Also,many of these defined functions contain code that is repeated in these methods. Separate functions should be created to reduce this redundancy in the code, so as to improve the Modularity of the code.



