PAYROLL MANAGEMENT SYSTEM

The calculation of the salary done manually takes a lot of time to compose the employee’s salary. It also delays the salary distribution system. Sometimes the salary is not generated within the stipulated time period thus creating a lot of hassle. Error is the other major problem of the manual system and even with repeated cross check some of the other errors surely persist which can cause a lot of problems. To solve this problem the organization need an PAYROLL MANAGEMENT system that can take care of all these.

Payroll system can be used to speed up the process of calculating pay, ensuring that payments are both accurate and on time. They save you the burden of learning and understanding complex payroll legislation. Trouble free payroll processing is a critical need of any business. Payroll system completes payroll calculations within a fraction of the time. Another huge advantage of running payroll system over a manual process is in the reporting, most systems allow, weekly, month and annually required reports to be run at the press of a button. It is a simple way for information about employee hours worked to be transferred into the payslip. Payroll system also provides the capability of "what-if" calculations. This helps in forecasting and planning staff costs and budgets. Payroll system also allows personnel based data to be stored such as records of annual leave and sick leave.

**Functionality**

1) Add Employee

2)View Employees

3)Generate Payslip

4)Show Payslip

5)Show History

6)Delete Employee

**Modules**

1)ADMIN

Admin is the administrator of the employee payroll system. Admin can add new employees and delete employees.

2)MANAGER

Manager enters the attendance of the employees of his department and can generate his salary.

3)EMPLOYEE

Employee can see the pay slip and the historyof his salary till date .

**Users**

1)ADMIN

• Login

• Add Employee

• Delete Employee

• Logout

2) MANAGER

• Login

• Enter leave days

•Generate Salary

• Logout

3) EMPLOYEE

• Login

• See Payslip.

• See History

• Logout

**CONCEPTS OF JAVA**

1) INHERITANCE

Inheritance in java is a mechanism in which one object acquires all the properties and behaviors of parent object. When you inherit from an existing class, you can reuse methods and fields of parent class, and you can add new methods and fields also.

2) INTERFACES

An interface describes a set of methods that can be called on an object, but does not provide concrete implementations for all the methods. You can declare classes that implement one or more interfaces. Each interface method must be declared in all the classes that explicitly implement the interface. With interfaces, all fields are automatically public, static, and final, and all methods that you declare or define (as default methods) are public.

3) EXCEPTION HANDLING

An Exception can be anything which interrupts the normal flow of the program. When an exception occurs program processing gets terminated and doesn’t continue further.  
Exception can occur at runtime (known as runtime exceptions) as well as at compile-time (known Compile-time exceptions).There can be several reasons for an exception. For example, following situations can cause an exception – Opening a non-existing file, Network connection problem, Operands being manipulated are out of prescribed ranges, class file missing which was supposed to be loaded and so on. Exception handling allows us to control the normal flow of the program by using exception handling in program. It throws an exception whenever a calling method encounters an error providing that the calling method takes care of that error.It also gives us the scope of organizing and differentiating between different error types using a separate block of codes. This is done with the help of try-catch blocks.

4) MULTITHREADING

A multi-threaded program contains two or more parts that can run concurrently and each part can handle a different task at the same time making optimal use of the available resources specially when your computer has multiple CPUs. By definition, multitasking is when multiple processes share common processing resources such as a CPU. Multi-threading extends the idea of multitasking into applications where you can subdivide specific operations within a single application into individual threads. Each of the threads can run in parallel. The OS divides processing time not only among different applications, but also among each thread within an application. Multi-threading enables you to write in a way where multiple activities can proceed concurrently in the same program .

5) AWT (ABSTRACT WINDOW TOOLKIT)

Java AWT (Abstract Window Toolkit) is an API to develop GUI or window-based applications in java.Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavyweight i.e. its components are using the resources of OS.The java.awt package provides classes for AWT api such as TextField, Label, TextArea, RadioButton, CheckBox, Choice, List etc.

6) EVENT HANDLING

Any program that uses GUI (graphical user interface) such as Java application written for windows, is event driven. Event describes the change of state of any object. Example : Pressing a button, Entering a character in Textbox.

Event handling has three main components,

* Events : An event is a change of state of an object.
* Events Source : Event source is an object that generates an event.
* Listeners : A listener is an object that listens to the event. A listener gets notified when an event occurs.

A source generates an Event and send it to one or more listeners registered with the source. Once event is received by the listener, they processe the event and then return. Events are supported by a number of Java packages, like java.util, java.awt and java.awt.event.

7) PACKAGES

Packages in Java is a mechanism to encapsulate a group of classes, interfaces and sub packages. It is easy to organize class files into packages. All we need to do is put related class files in the same directory, give the directory a name that relates to the purpose of the classes, and add a line to the top of each class file that declares the package name, which is the same as the directory name where they reside .In java there are already many predefined packages that we use while programming. Reusability of code is one of the most important requirements in the software industry. Reusability saves time, effort and also ensures consistency. A class once developed can be reused by any number of programs wishing to incorporate the class in that particular program. Easy to locate the files. In real life situation there may arise scenarios where we need to define files of the same name. Packages are a way of avoiding “name-space collisions.

HOW THE SYSTEM WORKS:

There are three end users : admin, manager and employee. These three end users can login the system with the user\_id and passwords allotted to them by the admin .Whenever the user tries to login through the main Login frame the system goes to the saved database to check if the ids and passwords of the user is correct according to their designation. Incase the ids, password and type of designation doesn’t match then their appears a dialog box denying the acces to the system with the appropriate message.

When the admin enters the system , he has the right to access the entire database of the company as only he can add the data of the new employees or delete the data of the employees. By adding the necessary details the entry of the new employee is made in the main database of the system. Or he can delete details about any employee by just entering the id of that particular employee. He can view the entire employee detail table using the View frame.

When the manager enters the system , he updates the number of leave taken by a particular employee of his department only by entering the correct employee id and name. On the basis of the leave taken and he generates the salary of that employee, on the date entered by him. The salary and date are stored in one common history table for future reference of the company.

The employee can login into his account and see his detailed information which the company has including his latest updated salary and leave days information. He can also see his history about his previous salaries generated. But he cannot see the salary information of the other employee from the history database.

Moreover, all the three users can logout from the system whenever they want to.

HOW THE USERS CAN ACCESS THE SYSTEM SIMULTANEOUSLY:

Whenever, one manager is working the other manager cannot login the system to generate salary of employees of his department. He has to wait till the work of the other manager is finished. After the first manager logs out of closes his system the waiting manager is automatically allowed to login.

When admin is working the manger is not able to access the database and he is asked to wait till the admin working. He is notified for the same by an appropriate message. After admin has finished his work the waiting manager is automatically logged in.

Similarly, when one manager is working and an admin tries to enter the system the work of the manager is put to wait .The admin finishes his work and only after the admin has logged out the manager already working is able to resume his work from where it was suspended.