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# Global Billing System

**[1] Saurabh Vyas, [2] Deepak Kapgate**

[1] PG Scholar, CSE GHRAET
Nagpur, Maharashtra, India

[2] Professor, CSE GHRAET
Nagpur, Maharashtra, India

**Abstract -** The Global Billing system is an open platform developing in J2EE and having database in MySQL. Global Billing system is an application, middleware and key application. Global Billing system is a software and application program for consultancy services. It has 3 basic modules 1.ADMINISTRATOR 2.HR 3.EMPLOYEE. It helps to manage the data about employee, company/organization, employee outsourcing and manages the salary slip of employee i.e. generating salary slip of employees. The report on Global billing manager discuss on data of different employee, organization/company. It manages overall data which is given by employees and organization to consultant. It provides the Internal Billing Activity according different scheme of different companies. The purpose of this application is to ease the Billing of system. It manages staff outsourcing and services. The application can manage the details about the Employee Details having their key feature, key skills, and their proposed work area. The "Global Billing System" encompasses information from the database, as well as from files on the server system. This system will be completely application base, Add support the client server environment. This system is useful for internal billing system for any organization.

***Keywords* - J2EE, MySql, Apache Tomcat Server.**

## 1. Introduction

The "Global Billing System" encompasses information from the database, as well as from files on the server system. This system will be completely application base, Add support the client server environment. This system is useful for internal billing system for any organization. This Software Requirements Specification provides a complete description of all the functions and specifications of the "Global Billing System" designed for Consultancy services. The expected audiences of this document are employees of Different organization, software developers, Software testers, including the users who will use this system. Global Billing system designed for internal Billing manager activity. There are 3 modules in the software.

They are:

- Admin
- HR
- Employee

## 2. Theoretical Background / Literature Survey:-

### After Recruitment of Employee:

1. Employee registered or hired for the given company.
2. Enter all the details in different register format as per employee type.

i. Contract basis
ii. Direct basis
iii. Invoice basis

3. Also maintain the details of employee for company itself.

4. Company fills the timesheet of employee at the end of the month in excel sheet format & send it to consultancy via currier or mail.

5. After getting details of employee working days, two types of bills are generated.

- Invoice bills
- Salary slips

6. Invoice bills:
It generated on company side as per the bond of hiring the employee with the company.

7. Salary slips:
As per working day & bond with company salary slip is generated.

8. He or she got the payment in terms of cheque payment.

### 2.1 Existing System

In the existing system the transactions are done only manually but in proposed system we have to computerize all the banking transaction using the software financial management system.

### 2. 1.1 Problems with Existing System

- Lack of security of data.
- More man power.
- Time consuming.
- Consumes large volume of pare work.
- Needs manual calculations.
- No direct role for the higher officials.
- Damage of machines due to lack of attention.

To avoid all these limitations and make the working more accurately the system needs to be computerized.

### 2.2 Proposed System

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work.

### 2. 2. 1 Advantages of the Proposed System

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

- Security of data.
- Ensure data accuracy's.
- Proper control of the higher officials.
- Reduce the damages of the machines.
- Minimize manual data entry.
- Minimum time needed for the various processing.
- Greater efficiency.
- Better service.
- User friendliness and interactive.
- Minimum time required.

## 3. System Analysis

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

## 4. System Design

### 4.1 Introduction

Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. The term "design" is defined as "the process of applying various techniques and principles for the purpose of defining a process or a system in sufficient detail to permit its physical realization". It may be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm that is used. The system design develops the architectural detail required to build a system or product. As in the case of any systematic approach, this software too has undergone the best possible design phase fine tuning all efficiency, performance and accuracy levels. The design phase is a transition from a user oriented document to a document to the programmers or database personnel. System design goes through two phases of development: Logical and Physical Design. [6][7]

### 4.1.1 Logical Design

The logical flow of a system and define the boundaries of a system. It includes the following steps:

- Reviews the current physical system – its data flows, file content, volumes , frequencies etc.
- Prepares output specifications – that is, determines the format, content and frequency of reports.
- Prepares input specifications – format, content and most of the input functions.
- Prepares edit, security and control specifications.
- Specifies the implementation plan.
- Prepares a logical design walk through of the information flow, output, input, controls and implementation plan.

- Reviews benefits, costs, target dates and system constraints. [6][7]

### 4.1.2 Physical Design

Physical system produces the working systems by define the design specifications that tell the programmers exactly what the candidate system must do. It includes the following steps.

- Design the physical system.
- Specify input and output media.
- Design the database and specify backup procedures.
- Design physical information flow through the system and a physical design Walk through.
- Plan system implementation.
- Prepare a conversion schedule and target date.
- Determine training procedures, courses and timetable.
- Devise a test and implementation plan and specify any new hardware/software.
- Update benefits , costs , conversion date and system constraints. [6][7]

**Design/Specification Activities:**

- Concept formulation.
- Problem understanding.
- High level requirements proposals.
- Feasibility study.
- Requirements engineering.
- Architectural design.

### 4.1.3 Input Design

The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur. [6][7]

### 4.1.4 Output Design

A quality output is one, which meets the requirements of the end user and presents the information clearly. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should :

- Identify the specific output that is needed to meet the requirements.
- Select methods for presenting information.
- Create document, report, or other formats that contain information produced by the system.

### 4.1.5 DATABASE DESIGN

A database is an organized mechanism that has the capability of storing information through which a user can retrieve stored information in an effective and efficient manner. The data is the purpose of any database and must be protected.

The database design is a two level process. In the first step, user requirements are gathered together and a database is designed which will meet these requirements as clearly as possible. This step is called Information Level Design and it is taken independent of any individual DBMS.

In the second step, this Information level design is transferred into a design for the specific DBMS that will be used to implement the system in question. This step is called Physical Level Design, concerned with the characteristics of the specific DBMS that will be used. A database design runs parallel with the system design. The organization of the data in the database is aimed to achieve the following two major objectives.

- Data Integrity
- Data independence
- Normalization is the process of decomposing the attributes in an application, which results in a set of tables with very simple structure. The purpose of normalization is to make tables as simple as possible. Normalization is carried out in this system for the following reasons.
- To structure the data so that there is no repetition of data , this helps in saving.
- To permit simple retrieval of data in response to query and report request.
- To simplify the maintenance of the data through updates, insertions, deletions.
- To reduce the need to restructure or reorganize data which new application requirements arise.[8]

## 5. Development Tools

Application programming may be the most technically challenging job that a programmer can have. The top level programs may require the best from both programmer and computer. Global Billing System is a simple Application that makes it easy to build transaction for the organization to define its own move. In this article, a interactive # tire application is developed. Program in coded in JSP, J2EE and MySql as Backend for certain image processing tasks and data storage.

### 5.1 Methodology

The important essential part of the system development phase, after designing the software, is system testing. We cannot say that every program or system design is perfect & because of lack of communication between the user & the designer, some error is there in the software development. The number of error & nature of error & nature of designed system depends on some usual factors like communication between the user & the designer, the programmer's ability to generate a code reflects exactly the systems specification & the time frame for design.
A newly designed system should have all the parts or sub-system in working order. The purpose of system is to consider all the likely variation to which it will be subjected & then push the system to its limits. Software testing is the process of executing a program with an objective of finding an error.

### 5.2 Detail Description about Technology used

#### 5.2.1 Front-end

JSP is extension to the servlet technology. It is 100% java oriented. It means all the classes & interfaces of JSP are developed using the technology Java. Itcanbe combined with any other java technology such as Jdbc, Servlet, RMI, Beans with any of core Java.[3][5]

#### 5.2.2 Backend

My SQL is used as a Backend in these project. It is user friendly database A database is an organized collection of data, which can easily be retrieved. A dictionary, which is present in every house, is also a database. It is a database of words in English language. You can also consider your personal address book or telephone directory provides by telecom department as other examples of database.[13]

#### 5.2.3 Middleware

Servlet is used as a middle ware it is a server side language it performs the communications between the front end and backend for performing the dynamic task.[11][12]

### 5.3 Roles and Responsibilities

#### 5.3.1 Admin can:

- Add and Edit Employee, assign username and password for employees.
- Add and Edit, Search Master entries (Employee, Company, Service Company, Pan No, Service Tax No, Designation).
- Add Invoices (Contractual, Permanent and Services).
- Search Employee, Company, Service Company and Timesheet filled by Employees.
- Generating and View Salary Slip.
- Report Generation (Invoices and Salary Slip).
- Maintain the Recycle Bin for deleted Invoice (Contractual, Permanent and Salary Slip).

#### 5.3.2 HR can:

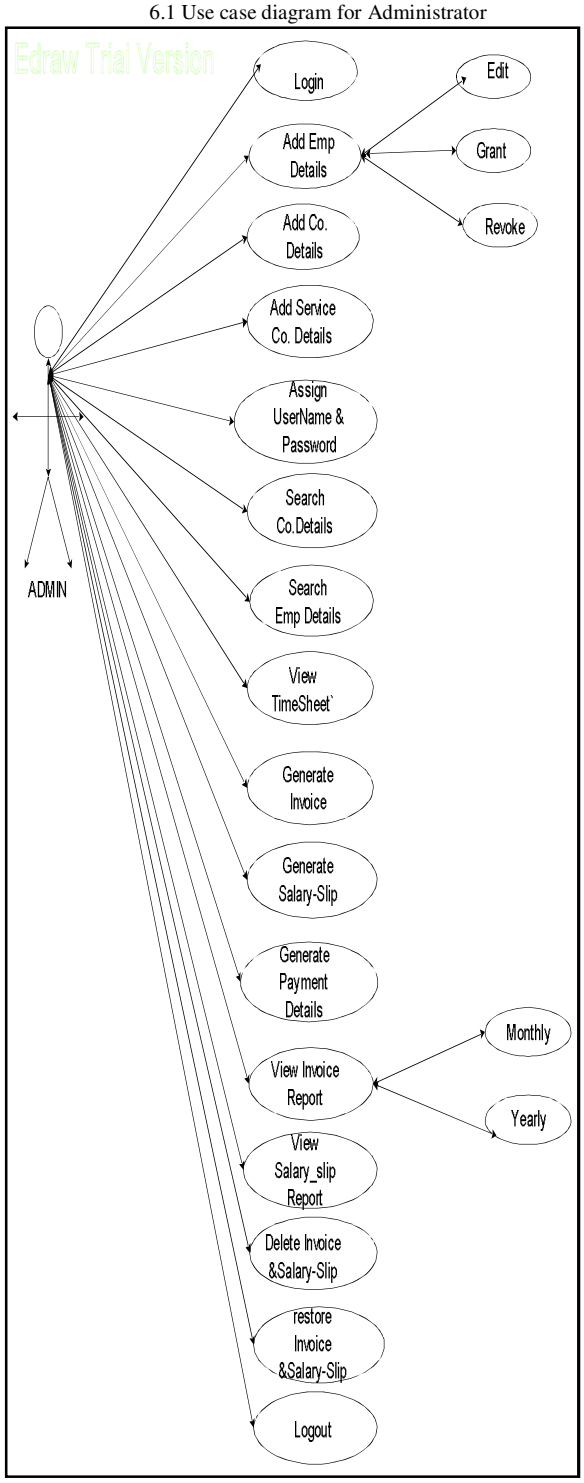
- Add and Edit Master Entries (Employee, Company, Service Company, Designation, Pan no, Service tax no)
- Search Company, Service Company and Timesheet.
- Generating and View the Salary Slip

#### 5.3.3 Employee can:

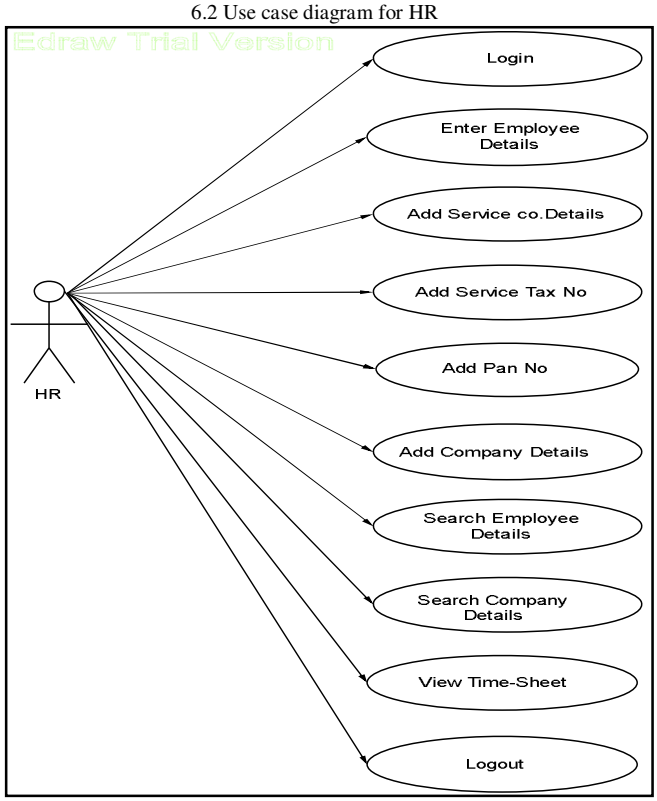
- Add, Edit and view the daily work Timesheet.
- Add and edit project details.

# 6. Experimental Result

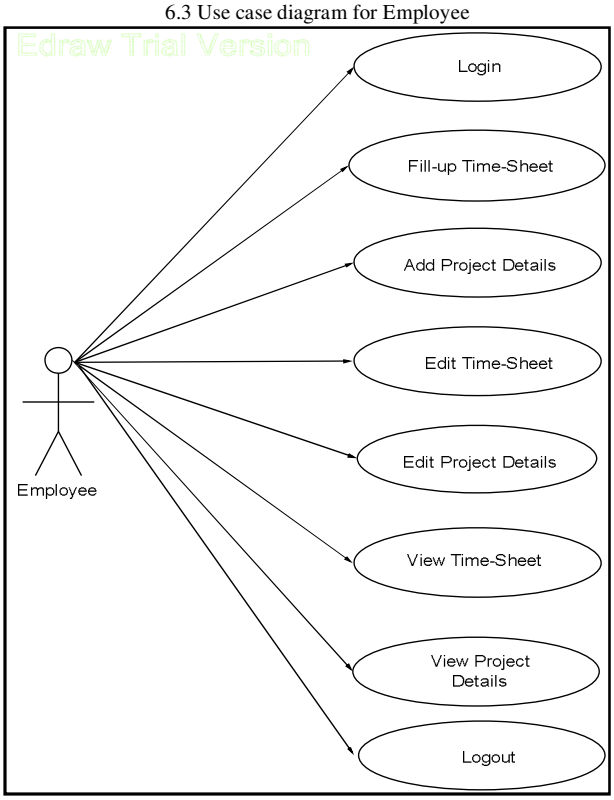
6.1 Use case diagram for Administrator



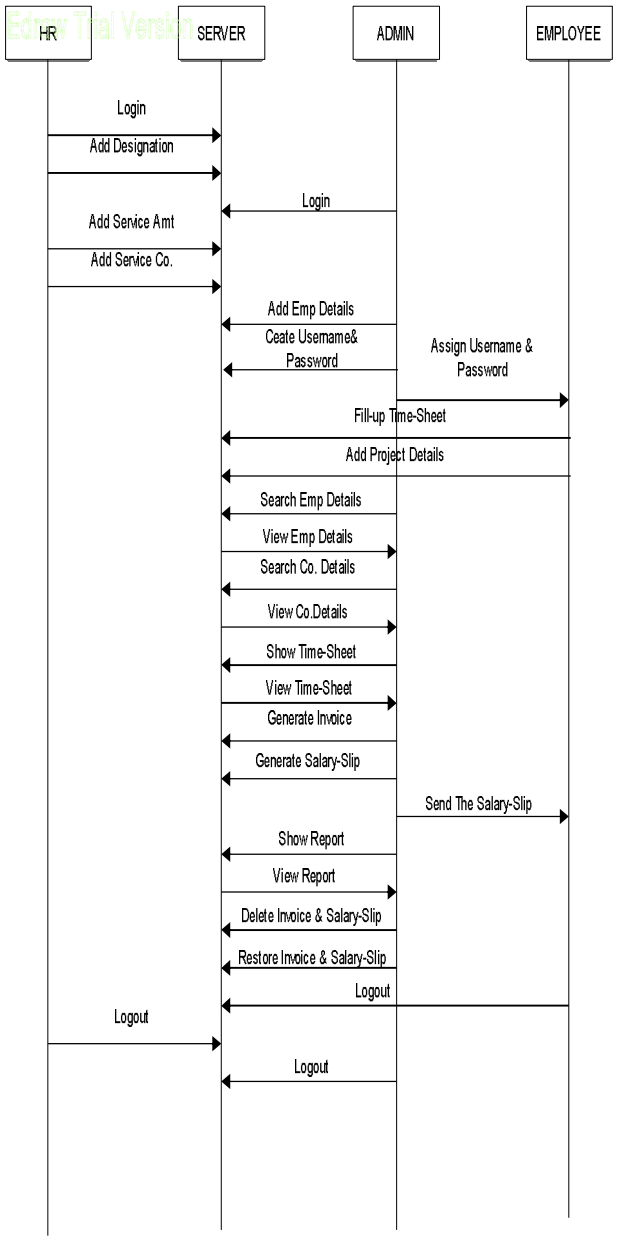

6.2 Use case diagram for HR




6.3 Use case diagram for Employee



6.4 Sequence diagram for Administrator




6.5 Salary Slip of Employee

**GLOBAL BILLING SYSTEM**

Add.: GBS, station road, Wardha -442001..
**Tel. No.** (7152) 244679, **TeleFax :** 07152244697,
**Email:** gbsinfo@gbs.com **WebSite :** www.gbs.com

**Salary Slip for** January-2012

Name : Ritesh Thakre — Date :01/02/2012
EMP I.D. : G00707 — Month :January-2012

| SALARY | | DEDUCTION | |
|---|---|---|---|
| Details | Amount | Details | Amount |
| **Basic** | **6238.61** | **Profession Tax** | **250.00** |
| **D.A.** | **9357.91** | **Income Tax** | **0.00** |
| **HRA** | **6760.78** | **Other Deduction** | **0.00** |
| **Performance** | **2705.68** | | |
| **Conveyance** | **2033.79** | | |
| **Other** | | | |
| **Gross Pay** | **27096.77** | | |
| **Net Pay :** | **26846.77** | | |
| **Net Pay(Rounded) :** | **26847.00** | | |

**Net Pay(In Words) :Twenty Six Thousand Eight Hundred and Fourty Seven only**

**Month Days :31** — **Paid Days :28**
**Absent Days :3.0** — **Extra Days :0.0**

Receivers Signature — **For GBS** — Authorised Signatory

Print Report

6.6 Service Bill:

**GLOBAL BILLING MANAGER**

Add.: GBS, Station road, Wardha -442001..
Tel. No. (7152) 244697, TeleFax : 07152244697,
Email: gbsinfo@gbs.com WebSite : www.gbs.com

To, HCL

No : 22
Date : 03/01/2012

| SR NO. | PARTICULARS | AMOUNT RS |
|---|---|---|
| TITLE:Hardware pheripheral sipplier.. | | |
| 1 | 17' Lcd Monitor - 10 nos | 67000 |
| 2 | HCL 107 layout Keyboard - 10 nos | 5300 |
| 3 | HCL optial Mouse - 10 nos | 3800 |
| 4 | HCL ATX cabinet - 10 nos | 92000 |
| 5 | 4 3pin Spikes - 10 nos | 1250 |

Deduction Particulars :
Deduction :
Service Tax At : 12.36
Service Tax no. : 123nhhks455
Pan No : AJQPK 3639Q

Net Amount Payable : 190282

Receivers Signature — For GBMS — Authorised Signatory

Print Report

## 7. Future Work

This project was developed to fulfill user and business requirement; however there is lots of scope to improve the performance of the eBilling and Invoice System in the area of user interface, database performance, and query processing time. Etc. So there are many things for future enhancement of this project. The (Admin) can manage the Employees and their billing invoices

The future enhancements that are possible in the project are as follows.

- Linking and integration of any legacy system for accounting.
- Integration with travel agent through Web Services
- Connection to third-party OLAP applications
- Electronic Data Interchange (EDI) system between banks, other credit verification agency and their vendors
- In the area of data security and system security.
- Provide more online tips and help.
- To optimize the query this is embedded in the system.
- Purpose of this application is to ease the Billing of system. It manages staff outsourcing and services.
- With the help of this application of billing manager manages staff outsourcing and services.

## 8. Conclusion

Global Billing System is an innovation in getting input from the users and this input can be successfully used for performing different computing tasks. One of the project goals was simplicity – making it easy for handling and understanding. The project can be extended to further applications such as performing OS. The success of the application fairly depends on how accurately the data input by user and further bill or salary slip were generate by inputted data. We believe an optimal solution for this system is a combination of direct mode and data provided by user. The direct mode can generate all details about employee and services provided to organization.

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