**Employee Time Tracking and Billing System Database Documentation**

**Overview:**

This database is designed to support an Employee Time Tracking and Billing System, allowing an organization to manage employee time entries, track projects, generate invoices, and handle financial transactions. The system involves multiple tables, each serving a specific purpose in capturing, organizing, and processing relevant data.

**Tables:**

* **Billing Table:**

billing\_id: Unique identifier for each billing record.

employee\_id: Identifier of the employee associated with the billing.

hours\_worked: Date representing the hours worked for billing.

billing\_rate: Hourly rate for the employee.

total\_amount: Total amount calculated based on hours worked and billing rate.

* **Punching Table:**

punching\_table\_id: Unique identifier for each punching record.

employee\_id: Identifier of the employee associated with the punching record.

punch\_in\_time: Date and time of punching in.

punch\_out\_time: Date and time of punching out.

date: Date of the punching record.

* **Time Tracking Table:**

time\_tracking\_id: Unique identifier for each time tracking record.

date\_worked: Date for which time is tracked.

hours\_worked: Total hours worked on the specified date.

* **Transaction Table:**

transaction\_id: Unique identifier for each transaction.

billing\_id: Identifier linking the transaction to a billing record.

transaction\_amount: Amount involved in the transaction.

transaction\_date: Date of the transaction.

transaction\_tablecol: A placeholder column (consider updating its purpose).

* **Clients Table:**

ClientID: Unique identifier for each client.

ClientName: Name of the client.

ClientEmail: Email address of the client.

ClientPhone: Phone number of the client.

* **Employees Table:**

EmployeeID: Unique identifier for each employee.

FirstName: First name of the employee.

LastName: Last name of the employee.

HourlyRate: Hourly rate for the employee's billing.

* **Projects Table:**

ProjectID: Unique identifier for each project.

ProjectName: Name of the project.

ClientID: Identifier linking the project to a specific client.

* **Invoices Table:**

InvoiceID: Unique identifier for each invoice.

ClientID: Identifier linking the invoice to a specific client.

ProjectID: Identifier linking the invoice to a specific project.

InvoiceDate: Date of the invoice.

TotalAmount: Total amount mentioned in the invoice.

* **Payments Table:**

PaymentID: Unique identifier for each payment.

InvoiceID: Identifier linking the payment to a specific invoice.

PaymentDate: Date of the payment.

AmountPaid: Amount paid in the payment.

* **Reports Table:**

ReportID: Unique identifier for each report.

EmployeeID: Identifier linking the report to a specific employee.

ProjectID: Identifier linking the report to a specific project.

ReportDate: Date of the report.

ReportDescription: Description of the report.

* **TimeEntries Table:**

EntryID: Unique identifier for each time entry.

EmployeeID: Identifier linking the time entry to a specific employee.

ProjectID: Identifier linking the time entry to a specific project.

Date: Date of the time entry.

StartTime: Start time of the work.

EndTime: End time of the work.

* **TimeApproval Table:**

ApprovalID: Unique identifier for each time approval record.

EntryID: Identifier linking the approval to a specific time entry.

SupervisorID: Identifier linking the approval to a specific supervisor.

ApprovalStatus: Status indicating whether the time entry is approved.

**Use Cases:**

* Time Tracking:
  + Employees log their working hours using the TimeEntries table. Time entries include
  + details such as project, date, start time, and end time.
* Billing:
  + The Billing table calculates the total amount based on employee hours and hourly rates. Invoices are generated using the Invoices table, associating clients and projects.
* Financial Transactions:
  + Payments are recorded in the Payments table, linking to specific invoices.
* Project Management:
  + Projects are managed in the Projects table, associated with clients.
* Reports:
  + Employee reports are stored in the Reports table, providing insights into employee productivity.
* Time Approval:
  + Supervisors approve time entries in the TimeApproval table.

**Relationships:**

* + Employees are associated with time entries, invoices, and reports. Time entries and projects are linked through the TimeEntries and Projects tables. Financial transactions are connected to billing and invoices.

**ER – Diagram:**

