Ahsanullah University of Science and Technology (AUST)
Department of Computer Science and Engineering

Project Proposal: Company Revenue Management System

Course No: CSE4126

Course Title: Distributed Database Systems Lab

Semester: Fall 2022

Date of Submission – 18 July 2023

Submitted To-

Ms. Zarin Tasnim Shejuti

Ms. Sanzana Karim Lora

Submitted By-

Member 1:
190204036: Dipon Deb Dipu
Member 2:
190204048: Syeda Samia Sultana
Lab Group: A2
Year: 4th
Semester: 1st
Department: CSE

Company Revenue Management System

Project Description:

In the Company Revenue Management System developed using PL/SQL, companies having multiple branches will be able to manage their expenses, sales and revenue history for years. The system will take all the sales, expense data monthly and can calculate their revenue for months.

Database Schema:

Global Schema:

1. **Admin** (Admin_Id, Name, Email, Password)
2. **Expense** (Expense_Id, Month, Year, Area, Production_Cost, Salary_Cost, Utility_Cost)
3. **Sales** (Sales_Id, Product_Id, Month, Year, Area, Unit, Total_price)
4. **Revenue** (Revenue_Id, Month, Year, Income, Total_expense, Total_sales)
5. **Product** (Product_Id, Name, Per_Unit_Price)

Fragmentation Schema:

Horizontal

1. Sales1 = **PJ** $_{\text{Sales\_id, Product\_id, Month, Year, Area, Unit,Totalt\_price}}$ **SL** $_{\text{Area = "Gazipur"}}$ **Sales**
2. Sales2 = **PJ**$_{\text{Sales\_id, Product\_id, Month, Year, Area, Unit,Totalt\_price}}$ **SL** $_{\text{Area = "Savar"}}$ **Sales**

Vertical

1. Revenue1 = **PJ** $_{\text{Revenue\_id, Month,Year, Income}}$ **Revenue**
2. Revenue2 = **PJ** $_{\text{Revenue\_id, Month,Year,Total\_sales, Total\_expense}}$ **Revenue**

Mixed

1. Expense1_1 = **PJ** $_{\text{Expense\_id, Month, Year, Area, Production\_cost}}$ **SL** $_{\text{Area = "Gazipur"}}$ **Expense**
2. Expense1_2 = **PJ** $_{\text{Expense\_id, Month, Year, Area, Salary\_cost, Utility\_cost}}$ **SL** $_{\text{Area = "Gazipur"}}$ **Expense**
3. Expense2_1 = **PJ** $_{\text{Expense\_id, Month, Year, Area, Production\_cost}}$**SL** $_{\text{Area = "Savar"}}$ **Expense**
4. Expense2_2 = **PJ**$_{\text{Expense\_id, Month, Year, Area, Salary\_cost, Utility\_cost}}$ **SL** $_{\text{Area = "Savar"}}$ **Expense**

Allocation Schema: Sales1^{1} , Sales2^{2} , Revenue1^{1,2} , Revenue2^{1} , Expense1_1^{1} , Expense1_2^{1} , Expense2_1^{2} , Expense2_2^{2}

Reason to be a Distributed Database:

As a company grows and generates more revenue, the system can scale up to accommodate the increased demands. If one branch fails, the system can continue to operate without disruption, ensuring continuous revenue management operations. Revenue data is often sensitive and critical for the company's financial operations and so distributed database systems allow for implementing security measures.