

## **Employee Expense Report Processing**

**Problem Statement:** A large health care provider is looking to make its current business process of reimbursing their employee expenses. At present the health care organization has 10000+ employees who submit their paper-based expense reports. This causes huge delays and backlogs to process them in a timely manner owing to delays in timely approval of these reports by their supervisors. Furthermore, employees do not have visibility of their expense report status once they have submitted the manual reports. The accounting team also face challenges to book expenses which causes further delays to perform month end close adding burden to the organizations accounting team.

The health care provider is looking for an automated solution which will help them to solve their four biggest challenges

- Timely employee reimbursement
- Visibility for the employees on the status of their expense report
- Automated accounting which will aid to perform faster month end close
- Ability for the auditor to audit employee expense reports to enforce organization expense policies

### **Solution:**

The organization has engaged database engineers to conduct stakeholder interviews and come up with a solution that will address the above issue. Based on the outcome of the stakeholder interview the engineers have proposed the below ERD for employee expense reimbursement

### **User Requirements:**

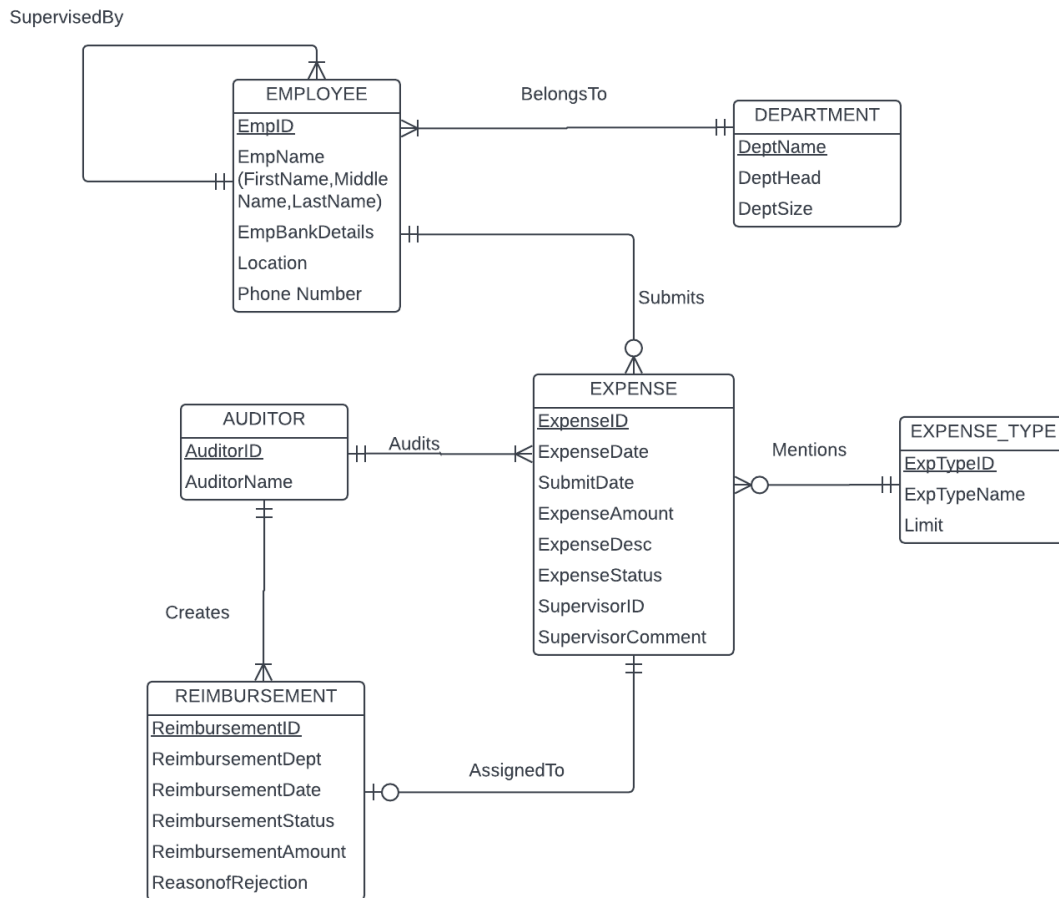
- Employee should submit a separate expense per type per date
- Employee must attach the expense receipts as supporting documents
- Employee must submit report within 30 days of incurring the expense.
- Supervisor must be able to review all expenses filed by the employee
- Supervisor must be able to approve/reject the request within two working days.
- If status not updated by Supervisor in 2 days, it will be updated to Declined
- Auditor must review the expense reports and start reimbursement process
- Auditor should be able to decline reimbursement if expense do not abide by company policy

### **Business Rules:**

- Employee has unique identifier EmpID
  - Other attributes of Employee are EmpName, EmpBankDetails, Location, Contact

- **Each employee belongs to only one Department**
- Department is uniquely identified by DeptID. Other attributes of Department are DeptName, DeptHead, DeptSize
- **One Department has one or many Employees**
- Employee can submit their Expense for reimbursement
  - Expense is uniquely identified by ExpenseID
  - Other attributes of Expense are ExpenseDate, SubmitDate, ExpenseAmount, ExpenseDesc, SupervisorID, ExpenseStatus, Supervisor comment (Supervisor Rejection reason)
  - Employee should attach receipts as supporting document to each expense
  - **Employee should submit new expense for each expense type and Expense date**
  - **Employee can submit only one expense for each expense type and for one date**
  - **Each expense can have only one Expense Type**
  - ExpenseType is uniquely identifies by ExpTypeID. Other attributes are ExpTypeName and Limit
  - **One ExpenseType can be in none, one or multiple expenses**
- Auditor will start auditing a new expense which is not started by any other auditor
  - Each expense will have exactly one auditor
  - Auditor is uniquely identified by AuditorID. Another attribute of Auditor is AuditorName
  - **Auditor will check the expense and create a new reimbursement entry for each approved expense**
  - Auditor can decline the reimbursement for supervisor approved expense if it does not abide by company policies
- There will be exactly one reimbursement entry for each approved expense
  - Reimbursement can be uniquely identified by ReimbursementID
  - Other reimbursement attributes are ReimbursementDept, ReimbursementDate, ReimbursementAmount, ReimbursementStatus, Reason Of Rejection
  - **There will be no reimbursement entry for declined expenses**
  - **Each reimbursement entry will be created by exactly one auditor, and one auditor can create multiple reimbursement entries for multiple expenses the auditor is working on**

## ERD:



## Entity Types:

Table Names	Functionality
<b>EMPLOYEE</b>	This table stores information related to employees and their personal details
<b>DEPARTMENT</b>	This table stores information related to different departments in the company
<b>EXPENSE</b>	This table stores information about each expense submitted for reimbursement
<b>EXPENSE_TYPE</b>	This is pre-defined table storing information on different Expense Type reimbursed by company like Airfare, Food, etc and their limits
<b>AUDITOR</b>	This table stores Auditor details of the company
<b>REIMBURSEMENT</b>	This table stores reimbursement details for each approved expense by the company

**Benefits of ERD Solution:**

- Only one expense per Expense Type and Expense Date, Easy for supervisor to Approve or Decline. No need to check multiple entries
- Employee can access all submitted expenses and check Expense Status and Reimbursement Status easily
- Any auditor can work on any expense, thus no biasing based on employee, Supervisor, Department or Expense Type
- Accounting manager can easily check all reimbursements without having to look at all the expenses