Data and Applications : Team 6

Project Phase - 1

Introduction to Mini World :

The database is based on a super stockist’s business. A super stockiest is a business that purchases products from the manufacturers and sells these products to various distributors. The database stores details about various Stock Keeping Units (SKU’s) that are sold to its customers. The business has many employees and departments whose details are also stored in this database. Also it stores monetary details of business.

Purpose of Database :

The database stores the details of all the components that are important for the efficient functioning of the business. It can be used by various stakeholders, the customers etc. and they have access to their exclusive user view which provides them the access to the information that is relevant to them.

Users of Database :

1. Business Owner
2. Chartered Accountants
3. Managers/ Department heads
4. Distributors

Applications of Database:

1. The business owner can get the information about the Stock left, their sales and customers, the details of employees etc.
2. The chartered accountant needs the details of the sales, the different bank accounts, the business loans etc.
3. Manager/ Department heads can use this database to get the details about the employees under their department.
4. Distributors can use this database to get the details of the their pending payments, their sales and the amount they owe to the business, their yearly purchases and the products they have purchased.

Database Requirements :

Strong Entity Types :

1. **Owner:**

   i) Owner Name (Composite Attribute)
   ii) Equity Share
   iii) Owner id (Primary Key)

2. **Bank Account**:

   i) Bank Account Number (Primary Key)
   ii) Name of holder
   iii) Account Type
   iv) Current Balance
   v) Branch IFSC
   vi) Name of Bank
   vii) Bank Address

3. **Loan**:

   i) Loan Provider
   ii) Principal amount
   iii) Interest charge
   iv) Collateral
   v) Loan Tenure

vi) Loan Approval Date
vii) Instalments
viii) Loan i.d. (Primary Key)

4. **Employee** :

i) Name (Composite Attribute)
ii) I.D. Number (Primary Key)
iii) D.O.B
iv) Address
v) Gender
vi) Salary
vii) Account Number (Candidate Key)
viii) Post/ Designation
ix) Dept. Number (Foreign Key)

5. **Department** :

i) Department Name
ii) Department number (Primary Key)
iii) Manger i.d. (Foreign Key)

6. Inventory:

i) Item Number (Primary Key)
ii) Item Name
iii) Availability
iv) Selling Price
v) Profit
vi) MRP
vii) G.S.T
viii) Purchase Cost (Derived attribute)

7. **Distributors** :

i) Distributor Name
ii) Bank Account Number (Candidate Key)
iii) IFSC Number
iv) Area of Jurisdiction
v) Yearly Sales

vi) Area Salesman i.d.
vii) Address
viii) Phone Number
ix) GST Number
x) Order id of pending payment (Multivalued attribute)
xi) Pending Payment

x) Distributor id (Primary Key)

8. **Orders** :

i) Order Number (Primary Key)
ii) Customer_name
iii) Order Date
iv) Net Amount
v) Advance Payment
vi) Order Status
vii) Shipping date

viii) Discount

Weak Entity Types :

1. **Employee Family Details**:

i) Employee id (Partial Key)
ii) Name (Composite)
iii) Relationship
iv) Date of birth
v) Gender

2. **Department Spendings** :

i) Department Number (Partial Key)

ii) Amount Spent

iii) Date Spent

iv) Description

3. **Payments** :

i) Order Number (Partial Key)
ii) Mode of Payment
iii) Cheque Number
iv) Amount of Payment
v) Payment Date

4. **Order Description** :

i) Order Number (Partial Key)

ii) Product Number

iii) Quantity

iv) Selling Price

Relationship Types

Relationship Types	Degree	Participating Entities	Cardinality Ratio	(MIN - MAX) constraint
Employee Family details are Dependents of employee	2	Employee Family Details , Employee	N : 1	(1,1) , (0,N)
Employee works for Department	2	Employee, Department	N : 1	(1 ,1) , (1,N)
Spendings of Department are stored in Department Spendings	2	Department, Department Spendings	1 : N	(0,N) , (1,1)
Order details are in Order Description	2	Orders , Orders Description	1 : N	(1,1) , (1,1)
Payments store payment details of Orders placed by Distributor of the items in Inventory	4	Distributors, Orders, Payments, Inventory	M : 1 : 1 : N	{ (1,1) , (1,N) }, { (1,1) , (0,N) }, { (0,N) , (0,N) }
Bank Branches give Loan to Bank	3	Bank Account, Loan, Bank	1 : N : M	{ (0,N), (1,1) }, { (1,1),(0,N) }

Account		Branches		
Manager manages Employee	1	Employee	1 : N	(1 , N) , (1 , 1)

Degree > 2 Relationship types :

1 . Payments store payment details of Orders placed by Distributor of the items in inventory

- Distributors, Orders, Payments, Inventory

2. Bank Branches give Loan to a Bank Account

- Bank Account, Loan, Bank Branches

Functional Requirements :

Modification :

1. Insert – Inserting the details of an employee.
2. Delete – Deleting the entity of an employee record.
3. Update – Updating the area selling prices of a product

Retrieval :

1. Select – Fetch and display the Details of a Distributor
2. Group – Display records in sorted order
3. Count – Count the total number of employees
4. SUM /AVG – Sum of total loan amount from various sources.
5. Join – Joining two entity types on basis of a common entity
6. Projection – Display the names of all employees

Search :

1. MIN/MAX – Min/Max sales to a distributor.
2. Search_start – Search for all employees with name starting with “A”

Summary :

Business Database is an organized collection of information about the total business operation. Businesses use databases in a variety of ways, including compiling distributor insights, and tracking sales, expenditures, and other financial details

This database describes about product features or functions that a buisness must implement to enable distributor to accomplish their orders. So, it’s important to make them clear both for the production team and the stakeholders. Generally, it describe our business behavior under different conditions. It will enhance efficiency of use , Intuitiveness and Low perceived workload of the system. Further it gives Security ,Reliability and Scalability to a business .