**REPORT**

**CSE 5300-DATABASE SYSTEMS.**

* To Draw the EER diagram I used Draw.io Open source website
* To Draw & Map relatioinal schema I used manula hand writing
* While drawing EER I made few assumpations

1. I assumed Different banks can be there so each bank is identified by unique code
2. I Generalised customers & employees in to people ,because an employee also can have account in same branch
3. Credit card paymnets are also important as like loan payment ,payment\_number,Date,amount
4. Certificate of deposit have Interest\_rate,Duration& amount that’s be shown as subclass of savings

* I got 9 relationships in the EER diagram

1. Branches relation between Bank & Bank\_branch
2. Maintain relation between branch & Account
3. Hold relation between account & people
4. Loan\_branch relation between Branch & Loan
5. Borrow relation between people & loan
6. Loan repayment relation between Payment & loan
7. Creditcards\_payment relation between creditcards & C.C Payment
8. Cust\_banker relation between customer & employee
9. Works for relation between employee & manager ,it’s a recursive relation

* I got 2 weak entities Loan\_Repyament & Creditcard\_payment as their numbers are partial keys I used their entities & these partial keys as primary keys
* I followed standard digramatic notations for EER diagram

**Missing Requirements**

1. Bank Relation
2. Credit\_card repayment relation
3. Generalising Customers & Employess

All these missing requiremnets are assumed and included in while drawing EER digram

* While mapping the EER diagram I chose Multiple relations-Superclass and subclasses design as it involves all the concepts which professor Ranjan\_Dash taught
* With the EER diagram I drew 15 relational schemas

**Below are create table statements**

Bank\_enterprise database

CREATE Database `bank\_enterprise` ;

Bank Table

CREATE TABLE `bank` (

`Code` INT NOT NULL,

`Name` VARCHAR(225) NOT NULL,

`Address` VARCHAR(225) NOT NULL,

PRIMARY KEY (`Code`));

Branch Table

CREATE TABLE `branch`` (

`B\_Code` INT NOT NULL,

`Name` VARCHAR(225) NOT NULL,

`City` VARCHAR(225) NOT NULL,

`Assets` VARCHAR(225) NOT NULL,

PRIMARY KEY (`Name`),

FOREIGN KEY (`B\_code`)

REFERENCES `bank` (`Code`) );

Account Table

CREATE TABLE `account` (

`Acc\_no` INT NOT NULL,

`Balance` INT NULL,

`Date\_of\_recent` DATE NOT NULL,

`Br\_name` VARCHAR(45) NULL,

PRIMARY KEY (`Acc\_no`),

FOREIGN KEY (`Br\_name`)

REFERENCES `branch` (`Name`) );

Savings Table

CREATE TABLE `savings` (

`S\_Acc\_No` INT NOT NULL,

`Deposit` INT NULL,

`With\_drawls` INT NULL,

`S\_Interest\_rate` INT NULL,

PRIMARY KEY (`S\_Acc\_No`),

CONSTRAINT `S\_Acc\_No`

FOREIGN KEY (`S\_Acc\_No`)

REFERENCES .`account` (`Acc\_no`));

C.D Table

CREATE TABLE `certificate\_deposit` (

`C.D.ACC` INT NOT NULL,

`C.D.Amount` INT NULL,

`C.D.Interest\_Rate` INT NULL,

`Tenure` INT NULL,

PRIMARY KEY (`C.D.ACC`),

CONSTRAINT `C.D.ACC`

FOREIGN KEY (`C.D.ACC`)

REFERENCES `account` (`Acc\_no`) );

Checkings Table

CREATE TABLE `checkings` (

`Ch\_Acc\_No` INT NOT NULL,

`Ch\_Deposit` INT NULL,

`Ch\_Withdrawls` INT NULL,

`Over\_Draft` INT NOT NULL,

PRIMARY KEY (`Ch\_Acc\_No`),

CONSTRAINT `Ch\_Acc\_No`

FOREIGN KEY (`Ch\_Acc\_No`)

REFERENCES `account` (`Acc\_no`) );

Creditcard Table

CREATE TABLE `credit\_card` (

`C.C.Acc\_no` INT NOT NULL,

`C.C.Intrest\_rate` INT NOT NULL,

`Credit\_Rating` VARCHAR(45) NOT NULL,

`Out\_Standing` INT NOT NULL,

`Credit\_limit` INT NOT NULL,

PRIMARY KEY (`C.C.Acc\_no`),

CONSTRAINT `C.C.Acc\_no`

FOREIGN KEY (`C.C.Acc\_no`)

REFERENCES `account` (`Acc\_no`) );

Creditcard\_payment Table

CREATE TABLE `c\_c\_payment` (

`C.C\_payment\_No` INT NOT NULL,

`C\_C\_P\_Acc\_No` INT NOT NULL,

`C\_C\_Date\_of\_Paymenbt` DATE NULL,

`C\_C\_Amount` INT NULL,

PRIMARY KEY (`C\_C\_P\_Acc\_No`),

CONSTRAINT `C\_C\_P\_Acc\_No`

FOREIGN KEY (`C\_C\_P\_Acc\_No`) REFERENCES `credit\_card` (`C.C.Acc\_no`));

Loan Table

CREATE TABLE `loan` (

`Loan\_acc` INT NOT NULL,

`Loan\_Amount` INT NOT NULL,

`L\_B\_Name` VARCHAR(45) NOT NULL,

PRIMARY KEY (`Loan\_acc`));

Loan Repayment Table

CREATE TABLE `loan\_repayment` (

`L\_payment\_No` INT NOT NULL,

`Loan\_Acc\_No` INT NOT NULL,

`Loan\_repayment\_Date` DATE NULL,

`Loan\_repayment\_Amount` VARCHAR(45) NULL,

PRIMARY KEY (`Loan\_Acc\_No`),

CONSTRAINT `Loan\_Acc\_No`

FOREIGN KEY (`Loan\_Acc\_No`)

REFERENCES `loan` (`Loan\_acc`) );

People Table

CREATE TABLE `people` (

`SSN` INT NOT NULL,

`Name` VARCHAR(45) NOT NULL,

`Tele\_No` INT NOT NULL,

PRIMARY KEY (`SSN`));

Bank Employee table

CREATE TABLE `bank\_enterprise`.`bank\_employee` (

`E\_SSN`` INT NOT NULL,

`Dependent\_Name` VARCHAR(225) NULL,

`Start\_date` DATE NOT NULL,

`Mgr\_SSN` INT NOT NULL,

PRIMARY KEY (`E\_SSN`),

CONSTRAINT `E\_SSN`

FOREIGN KEY (`E\_SSN`)

REFERENCES `people` (`SSN`),

FOREIGN KEY (`Mgr\_SSN``)

REFERENCES `bank\_employee`` (`B\_SSN``));

Customer Table

CREATE TABLE `customer` (

`C\_SSN` INT NOT NULL,

`Address` VARCHAR(225) NULL,

`B\_SSN` INT NOT NULL,

`Banker\_Type` VARCHAR(45) NOT NULL,

PRIMARY KEY (`C\_SSN`),

CONSTRAINT `B\_SSN`

FOREIGN KEY (`B\_SSN`)

REFERENCES `bank\_employee` (`E\_SSN`) );

CREATE TABLE `borrow` (

`P\_SSN` INT NOT NULL,

`Loan\_Acc` INT NULL,

PRIMARY KEY (`P\_SSN`),

CONSTRAINT `P\_SSN`

FOREIGN KEY (`P\_SSN`)

REFERENCES `bank\_enterprise`.`people` (`SSN`),

CONSTRAINT `Loan\_Acc`

FOREIGN KEY (`Loan\_Acc`)

REFERENCES `loan` (`Loan\_acc`) );

CREATE TABLE `bank\_enterprise`.`account\_holder` (

`P\_Acc\_No` INT NOT NULL,

`People\_SSN` INT NOT NULL,

PRIMARY KEY (`P\_Acc\_No`),

CONSTRAINT `P\_Acc\_No`

FOREIGN KEY (`P\_Acc\_No`)

REFERENCES `bank\_enterprise`.`account` (`Acc\_no`)

CONSTRAINT `People\_SSN`

FOREIGN KEY (`People\_SSN`)

REFERENCE `people` (`SSN`) );