**Three Tier Architecture**

201356229 : Akhil Batra

201356033: Shubham Rathi

**1) Presentation Layer:**

At the presentation layer, the Data Base Management Application System sends

HTTP request where it accepts the returned HTML (Containing js, css, image

files etc.) and is displayed. The user inputs are accepted after a variety of

controls or validations on a form. The data received is displayed after a series of

user inputs taken and is displayed in the desired form.

**2) Application Layer:**

1. Sever : Apache
2. Server Script : PHP
3. Also used the MYSQL + PHP embedded statements to interact with the database and dynamically retrieve the data as per the user inputs from the presentation layer.

**3) Persistence Layer:**

The database is created through simple MYSQL statements. And for the

date and time functions Triggers are created using MYSQL commands. The list

of Data De finition language (DDL) statements are as follows

**1. Employees** :- CREATE TABLE 'employees' (

'EmployeeSr' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'employee\_id' varchar(10) DEFAULT NULL,

'name' varchar(100) NOT NULL,

'contact\_number' int(10) NOT NULL DEFAULT '0',

'bank\_account\_number' varchar(40) NOT NULL DEFAULT '',

'date\_of\_joining' date DEFAULT NULL,

'salary' mediumint(8) DEFAULT '0',

'loan\_amount\_allowed' mediumint(8) DEFAULT '0',

'bonus' mediumint(6) DEFAULT '0',

'Password' varchar(60) NOT NULL DEFAULT 'iiit123',

'AccessLevel' int(1) NOT NULL DEFAULT '0',

PRIMARY KEY ('EmployeeSr'),

UNIQUE KEY 'EmployeeSr' ('EmployeeSr'),

UNIQUE KEY 'AccessLevel' ('AccessLevel'),

UNIQUE KEY 'employee\_id' ('employee\_id'),

) ;

**2. expenditure** :- CREATE TABLE 'expenditure' (

'ExpSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'purpose' text NOT NULL,

'amount' float NOT NULL DEFAULT '0',

'date\_of\_payment' date NOT NULL,

'signee' varchar(100) NOT NULL,

PRIMARY KEY ('ExpSR'),

UNIQUE KEY 'ExpSR' ('ExpSR'),

) ;

**3. Input** :- CREATE TABLE 'input' (

'InpSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'product' varchar(50) NOT NULL,

'raw\_inputs' text NOT NULL,

'weight' int(11) NOT NULL,

'volume' mediumtext NOT NULL,

'initial\_temp' int(11) NOT NULL,

PRIMARY KEY ('InpSR'),

UNIQUE KEY 'product' ('product'),

UNIQUE KEY 'InpSR' ('InpSR')

) ;

**4. Intermediate** :- CREATE TABLE 'intermediate' (

'MediateSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'product' varchar(50) DEFAULT NULL,

'concentration' float NOT NULL,

'temp' float NOT NULL,

'transfer\_rate' float NOT NULL,

'time\_taken' float NOT NULL,

'amount' float NOT NULL,

PRIMARY KEY ('MediateSR'),

UNIQUE KEY 'MediateSR' ('MediateSR'),

FOREIGN KEY ('product') REFERENCES 'input' ('product') ON DELETE CASCADE ON UPDATE CASCADE;

) ;

**5. Orders** :- CREATE TABLE 'orders' (

'OrderSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'org\_paid' varchar(75) NOT NULL,

'mode\_of\_shipment' enum('air','sea','road','rail') DEFAULT NULL,

'date\_of\_delivery' date DEFAULT NULL,

'amount\_paid' float NOT NULL,

PRIMARY KEY ('OrderSR'),

) ;

**6. Output**:- CREATE TABLE 'output' (

'OutputSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'product' varchar(50) NOT NULL,

'volume' float NOT NULL,

'temp' float NOT NULL,

'storage\_needed' float DEFAULT NULL,

'curr\_market\_val' float NOT NULL,

PRIMARY KEY ('OutputSR'),

UNIQUE KEY 'OutputSR' ('OutputSR'),

FOREIGN KEY ('product') REFERENCES 'input' ('product') ON DELETE CASCADE ON UPDATE CASCADE;

) ;

**7. Preorder**:- CREATE TABLE 'preorder' (

'PreSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'good\_name' varchar(50) NOT NULL,

'transacting\_org' varchar(75) NOT NULL,

'country' varchar(75) NOT NULL,

'currency' enum('USD','INR','EUR','POUND') DEFAULT NULL,

'currency\_rate' float DEFAULT NULL,

'import\_duty' float NOT NULL,

'availability' int(11) DEFAULT NULL,

PRIMARY KEY ('PreSR'),

UNIQUE KEY 'PreSR' ('PreSR')) ;

**8. raw\_material** :- CREATE TABLE 'raw\_material' (

'RawSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'material' varchar(50) NOT NULL,

'market\_rate' int(11) NOT NULL,

'volume' float NOT NULL,

'expected\_use' varchar(50) NOT NULL,

'final\_use' varchar(50) NOT NULL,

'date\_of\_next\_order' date DEFAULT NULL,

'expiry' date NOT NULL,

PRIMARY KEY ('RawSR'),

UNIQUE KEY 'RawSR' ('RawSR'),

FOREIGN KEY ('expected\_use') REFERENCES 'input' ('product') ON DELETE CASCADE ON UPDATE CASCADE,

FOREIGN KEY ('final\_use') REFERENCES 'input' ('product') ON DELETE CASCADE ON UPDATE CASCADE;

) ;

**9. Resale**:-

CREATE TABLE 'resale' (

'ResaleSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'available' float NOT NULL,

'tax' float DEFAULT '0',

'market\_rate' float NOT NULL,

'cost\_price' float NOT NULL,

PRIMARY KEY ('ResaleSR'),

UNIQUE KEY 'ResaleSR' ('ResaleSR')

) ;

**10. Stock** :- CREATE TABLE 'stock' (

'StockSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'product' varchar(50) NOT NULL,

'market\_rate' int(11) NOT NULL,

'shelf\_life' int(11) NOT NULL,

PRIMARY KEY ('StockSR'),

UNIQUE KEY 'StockSR' ('StockSR'),

FOREIGN KEY ('product') REFERENCES 'input' ('product') ON DELETE CASCADE ON UPDATE CASCADE;

) ;

**11. Tasks**:-

CREATE TABLE 'tasks' (

'TaskSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'task\_name' varchar(255) NOT NULL,

'assigned\_to' varchar(10) NOT NULL,

'role' varchar(100) NOT NULL,

'tasks' text,

'due\_date' date DEFAULT NULL,

PRIMARY KEY ('TaskSR'),

UNIQUE KEY 'TaskSR' ('TaskSR'),

FOREIGN KEY ('assigned\_to') REFERENCES 'employees' ('employee\_id') ON DELETE CASCADE ON UPDATE CASCADE;

) ;

**12. Tax**:- CREATE TABLE 'tax' (

'TaxSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'authority' varchar(200) DEFAULT NULL,

'tax\_slab' mediumtext,

'tax\_rate' int(11) NOT NULL,

'commodity\_name' varchar(100) NOT NULL,

PRIMARY KEY ('TaxSR'),

UNIQUE KEY 'TaxSR' ('TaxSR')

)

**13. Transit**:- CREATE TABLE 'transit' (

'TranSR' bigint(20) unsigned NOT NULL AUTO\_INCREMENT,

'carrier' varchar(50) NOT NULL,

'route' varchar(150) NOT NULL,

'documents\_required' text,

'place\_of\_delivery' varchar(50) NOT NULL,

PRIMARY KEY ('TranSR'),

UNIQUE KEY 'TranSR' ('TranSR')

) ;