**CHAPTER 6**

**DATABASE DESIGN**

**Database Design**

In the design phase the most important process is database design. In database designing different normalized tables are formed then relationship between these normalized tables is described. After studying the existing system it is decided to develop normalized tables for the database design.

Before describing the tables it is better to understand the concept of Normalization and the different forms of normalization.

There are three main forms of normalization these forms have their own definitions. These are stated below,

**6.1) Normalization:**

The purpose of the normalization is to produce a stable set of relation that is faithful model of the operation of the enterprise. By following the principles of normalization we can achieve a design that is highly flexible, allowing the model to be extended when needed to account for new attributes, entity sets and relationships. We can also reduce redundancy in the database and ensure that the design is free of certain update, insertion and deletion anomalies.

**6.1.1) First Normal Form**

A relationship is in first normal form if and only if every attribute is single valued for each tuple.

In other words we can say that each attribute in each row or each cell of the table is atomic or single valued. Since each attribute is singled valued for each tuple we say that the tables are in first normal form (INF).

**6.1.2) Second Normal Form**

A relationship is in second normal form if and only if it’s is in first normal form and all non-key attributes are fully functionally dependent on the key. If relationship is in first normal form and key consists of single attribute, the relationship is automatically in second normal form. The only case we have to concern about second normal form is when the key is composite.

If there are no composite keys in the tables then so the relations are in second normal form (2NF).

**6.1.3) Third Normal Form**

A relationship is in third normal form it is in second normal form and no non-key attribute is transitively dependent on key.

Since the table are in second normal form and non-key attribute is transitively dependent on key i.e. no non-key attribute is determined another non-key attribute. So the tables are in third normal form.

I would describe it in my words as if no non-key attribute is depending on the other non-key attribute then the relationship is in third normal form (3NF).

**6.2) Normalized Tables:**

**LOGIN TABLE**

**Primary key: user\_id**

**Foreign key: none**

**Purpose: This table is used to store data about users using the system.**

**Structure:**

**User\_id** int (25)

**Name** varchar (255)

**Cell\_no** varchar (255)

**Email** varchar (255)

**User\_pic** varchar (255)

**Password** varchar(255)

**Table Name:** Login

**Fields Table**

**Primary key: field\_id**

**Foreign key: none**

**Purpose: This table is used to store the fields against all the workspaces.**

**Structure:**

**Field\_id** int(25)

**User\_id** int(25)

**Workspace\_id** int(25)

**Field\_name** varchar(255)

**Table Name:** Fields

**Posts Table**

**Primary key:** post\_id

**Foreign key:**  none

**Purpose:**  This table is used to store the name of post above the fields data.

**Structure:**

**Post\_id** int(25)

**User\_id** int(25)

**Workspace\_id**  int(25)

**Title** varchar(255)

**Table Name:** Fields

**Fields\_data Table**

**Primary key: field\_data\_id**

**Foreign key:**

**Purpose:** This table is used to store data about the fields created against workspace.

**Structure:**

**Field\_data\_id** int(25)

**Field\_id** int(25)

**Post\_id** int(25)

**Field\_data** varchar(255)

**User\_id** int(25)

**Table Name:** Fields\_data

**Chat Table**

**Primary key: id**

**Foreign key:**

**Purpose:** This table is used to store data of the chat system.

**Structure:**

**id** int(25)

**name** varchar(255)

**message** varchar(255)

**Table Name:** Chat

**Daily\_diary Table**

**Primary key: diary\_id**

**Foreign key:**

**Purpose:** This table is used to store all the daily diaries created by users.

**Structure:**

**diary\_id** int(25)

**user\_id** int(25)

**title** varchar(255)

**date** varchar(255)

**content** varchar(255)

**Table Name:** daily\_diary

**Suspend Table**

**Primary key: suspend\_id**

**Foreign key:**

**Purpose:**  This table is used to store the users that are or were suspended by admin.

**Structure:**

**suspend\_id** int(25)

**user\_id** int(25)

**username** varchar(255)

**suspend\_date** varchar(255)

**expiration\_date** varchar(255)

**Table Name:** suspend

**Admin\_login Table**

**Primary key: id**

**Foreign key:**

**Purpose:** This table is used to store the data of admins.

**Structure:**

**id** int(25)

**admin\_name** int(25)

**password** varchar(255)

**email** varchar(255)

**admin\_pic** varchar(255)

**Table Name:** admin\_login