L1 – DBMS Lab Assessment

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Batch : Java Batch-5

Duration : 3 Hours

Note:

Understand the given problem statement and apply **W3H analysis** then Design **database** and create **ER diagram**.

Create Database using relevant DDL statements and perform **CRUD** operations using appropriate DML statements

1. Bring out the list of tables and attributes required for the database design.
2. Apply Normalization.

QUESTION:

12228	Nagarjun Suresh Babu	Creche management system

W3H Analysis:

CRECHE MANAGEMENT SYSTEM	
1.WHAT?	**2.HOW?**
1. What are the modules required? **Ans:** 1. Admin module 2. User module **2. What are the tables required for this system?** **Ans:** Admin, User and Children,plan. **3. What are the fields required for admin table?** **Ans:** Admin table will require fields like admin id, admin name, admin password. **4. What are the fields required for the user table?** **Ans:** User table should consist of fields like user id, username, user email address, user address, user phone number, child drop and pickup date and time. **5. What are the fields required for children's table?** **Ans:** Children name, children age, children issue details. 6. **What are the fields required for the plan table?** **Ans:** plan_id, duration, amount.	**1. How the user will login?** **Ans: 1.** User will login using username and password. 2. User will login using children's name and password. 3. User will login via email and password. **2. How the admin will login?** **Ans: 1.** Admin will login using username and password. 2. Admin will login via email and password. **3. How the children's pick up and drop date and time are collected?** **Ans:** 1. The children's pick up and drop date and time are collected by providing the calendar module. 2. The children's pick up and drop date and time are collected by providing a text-field to manually enter the data.

3.WHY?	**4.WHY NOT?**
1. How the user will login? **Ans:** 3. User will login via email and password. (Login using email and password paves way to check the originality of the user.) **2. How the admin will login?** **Ans:** 1. The children's pick up and drop date and time are collected by providing the calendar module. (Login using email and password paves way to check the originality of the user.) **3. How the children's pick up and drop date and time are collected?** **Ans:** 1. The children's pick up and drop date and time are collected by providing the calendar module. (Collecting the date and time using the calendar module will be more accurate and it reduces the chances of false data as we can see the day, date and time).	**1. How the user will login?** **Ans: 1.** User will login using username and password. (Login using username and password will not be feasible in the way we have to remember that every time when we need to login). 2. User will login using children name and password. (Login using children's name and password will create name ambiguity as many children can have same name. So, it is not feasible.) **2. How the admin will login?** **Ans: 1.** Admin will login using username and password. (Login using username and password will not be feasible in the way we have to remember that every time when we need to login). **3. How the children's pick up and drop date and time are collected?** **Ans:** 2. The children's pick up and drop date and time are collected by providing a text-field to manually enter the data. (Manually entering date and time will lead to incorrect data. So, it is not followed.)

ER DIAGRAM:

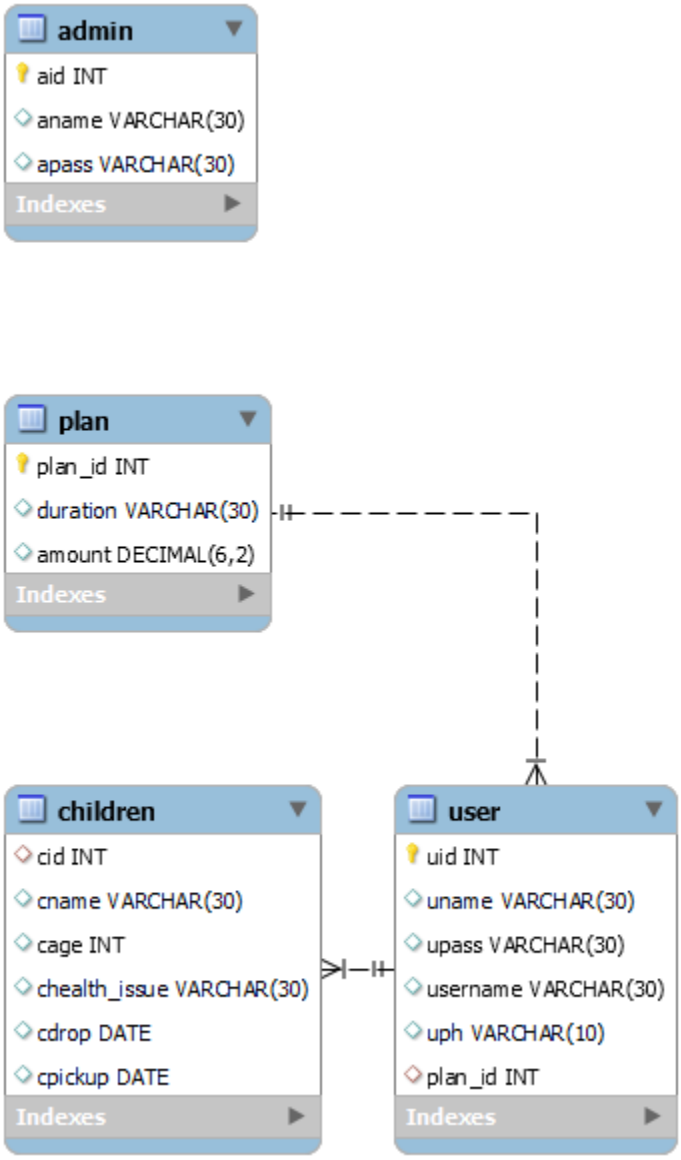
admin
aid INT
aname VARCHAR(30)
apass VARCHAR(30)
Indexes
plan
plan_id INT
duration VARCHAR(30)
amount DECIMAL(6,2)
Indexes
children
cid INT
cname VARCHAR(30)
cage INT
chealth_issue VARCHAR(30)
cdrop DATE
cpickup DATE
Indexes
user
uid INT
uname VARCHAR(30)
upass VARCHAR(30)
username VARCHAR(30)
uph VARCHAR(10)
plan_id INT
Indexes

TABLE STRUCTURE:

ADMIN:

```
mysql> desc admin
    -> ;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| aid   | int         | NO   | PRI | NULL    |       |
| aname | varchar(30) | YES  |     | NULL    |       |
| apass | varchar(30) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

USER:

```
mysql> desc user;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| uid      | int         | NO   | PRI | NULL    |       |
| uname    | varchar(30) | YES  |     | NULL    |       |
| upass    | varchar(30) | YES  |     | NULL    |       |
| username | varchar(30) | YES  |     | NULL    |       |
| uph      | varchar(10) | YES  |     | NULL    |       |
| plan_id  | int         | YES  | MUL | NULL    |       |
+----------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

CHILDREN:

```
mysql> desc children;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| cid           | int         | YES  | MUL | NULL    |       |
| cname         | varchar(30) | YES  |     | NULL    |       |
| cage          | int         | YES  |     | NULL    |       |
| chealth_issue | varchar(30) | YES  |     | NULL    |       |
| cdrop         | date        | YES  |     | NULL    |       |
| cpickup       | date        | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

PLAN:

```
mysql> desc plan;
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| plan_id  | int          | NO   | PRI | NULL    |       |
| duration | varchar(30)  | YES  |     | NULL    |       |
| amount   | decimal(6,2) | YES  |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

TABLE DESIGN:

CRECHE DATABASE:

1.Creating Database:

```
mysql> create database creche;
Query OK, 1 row affected (0.02 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| casc               |
| creche             |
| food_db            |
| information_schema |
| mysql              |
| performance_schema |
| sakila             |
| shopping           |
| sms_db             |
| subqueries         |
| sys                |
| world              |
+--------------------+
12 rows in set (0.01 sec)
```

2. Using the database:

```
mysql> use creche;
Database changed
mysql>
```

ADMIN TABLE:

1. **Creating admin table and viewing the structure:**

```
mysql> create table admin (aid int primary key,aname varchar(30),apass varchar(30));

Query OK, 0 rows affected (0.07 sec)

mysql> desc admin;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| aid   | int         | NO   | PRI | NULL    |       |
| aname | varchar(30) | YES  |     | NULL    |       |
| apass | varchar(30) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

2. Inserting data into the admin table:

```
mysql> insert into admin values (1,'Nagarjun','Arjun@123');
Query OK, 1 row affected (0.01 sec)

mysql> insert into admin values (2,'Suresh','suresh@123');
Query OK, 1 row affected (0.01 sec)
```

3. Viewing all the data in the admin table:

```
mysql> select * from admin;
+-----+----------+------------+
| aid | aname    | apass      |
+-----+----------+------------+
|   1 | Nagarjun | Arjun@123  |
|   2 | Suresh   | suresh@123 |
+-----+----------+------------+
2 rows in set (0.00 sec)
```

4. Updating the data in the admin table:

```
mysql> update admin set aname='Arjun' where aid=1;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from admin;
+-----+--------+------------+
| aid | aname  | apass      |
+-----+--------+------------+
|   1 | Arjun  | Arjun@123  |
|   2 | Suresh | suresh@123 |
+-----+--------+------------+
2 rows in set (0.00 sec)
```

2. USER TABLE:

1.Creating User table:

```
mysql> create table user (uid int primary key,uname varchar(30),upass varchar(30),us
ername varchar(30),uph varchar(10));
Query OK, 0 rows affected (0.08 sec)
```

Table Structure:

```
mysql> desc user;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| uid      | int         | NO   | PRI | NULL    |       |
| uname    | varchar(30) | YES  |     | NULL    |       |
| upass    | varchar(30) | YES  |     | NULL    |       |
| username | varchar(30) | YES  |     | NULL    |       |
| uph      | varchar(10) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

2. Inserting values into the user table:

```
mysql> insert into user values(1,'Babu','Babu@123','babu','1234567898');
Query OK, 1 row affected (0.01 sec)

mysql> insert into user values(1,'Babu','Babu@123','babu','9876543212');
ERROR 1062 (23000): Duplicate entry '1' for key 'user.PRIMARY'
mysql> insert into user values(2,'Raju','Raju@321','Raju','9876543212');
Query OK, 1 row affected (0.01 sec)
```

3. Select Command to view the data in the table:

```
mysql> select * from user;
+-----+-------+----------+----------+------------+
| uid | uname | upass    | username | uph        |
+-----+-------+----------+----------+------------+
|   1 | Babu  | Babu@123 | babu     | 1234567898 |
|   2 | Raju  | Raju@321 | Raju     | 9876543212 |
+-----+-------+----------+----------+------------+
2 rows in set (0.00 sec)
```

4. Update command:

```
mysql> update user set upass="Babu@321" where uname="Babu";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from user;
+-----+-------+----------+----------+------------+
| uid | uname | upass    | username | uph        |
+-----+-------+----------+----------+------------+
|   1 | Babu  | Babu@321 | babu     | 1234567898 |
|   2 | Raju  | Raju@321 | Raju     | 9876543212 |
+-----+-------+----------+----------+------------+
2 rows in set (0.00 sec)
```

5. Delete Command:

```
mysql> delete from user where uname="Babu";
Query OK, 1 row affected (0.01 sec)

mysql> select * from user;
+-----+-------+----------+----------+------------+
| uid | uname | upass    | username | uph        |
+-----+-------+----------+----------+------------+
|   2 | Raju  | Raju@321 | Raju     | 9876543212 |
+-----+-------+----------+----------+------------+
1 row in set (0.00 sec)
```

CHILDREN TABLE:

1.Creating children table and viewing its structure:

```
mysql> create table children( cid int, foreign key(cid) references user(uid) on upda
te cascade,cname varchar(30),cage int, chealth_issue varchar(30), cdrop date,cpickup
 date);
Query OK, 0 rows affected (0.10 sec)

mysql> desc children;
+--------------+------------+------+-----+---------+-------+
| Field        | Type       | Null | Key | Default | Extra |
+--------------+------------+------+-----+---------+-------+
| cid          | int        | YES  | MUL | NULL    |       |
| cname        | varchar(30)| YES  |     | NULL    |       |
| cage         | int        | YES  |     | NULL    |       |
| chealth_issue| varchar(30)| YES  |     | NULL    |       |
| cdrop        | date       | YES  |     | NULL    |       |
| cpickup      | date       | YES  |     | NULL    |       |
+--------------+------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

2. Inserting values:

```
mysql> insert into children(cid,cname,cage,chealth_issue,cdrop,cpickup) values(1,'Babu Bab1',3,'Fever','2034-03-06','2034-04-07');
Query OK, 1 row affected (0.01 sec)

mysql> insert into children(cid,cname,cage,chealth_issue,cdrop,cpickup) values(2,'Baby1',2,'NIL','2024-04-26','2024-04-27');
Query OK, 1 row affected (0.01 sec)

mysql> insert into children(cid,cname,cage,chealth_issue,cdrop,cpickup) values(1,'Babu Baby2',4,'NIL','2034-03-6','2034-04-7');
Query OK, 1 row affected (0.01 sec)

mysql> select * from children;
+------+------------+------+---------------+------------+------------+
| cid  | cname      | cage | chealth_issue | cdrop      | cpickup    |
+------+------------+------+---------------+------------+------------+
|    1 | Babu Bab1  |    3 | Fever         | 2034-03-06 | 2034-04-07 |
|    2 | Baby1      |    2 | NIL           | 2024-04-26 | 2024-04-27 |
|    1 | Babu Baby2 |    4 | NIL           | 2034-03-06 | 2034-04-07 |
+------+------------+------+---------------+------------+------------+
3 rows in set (0.00 sec)
```

3. Updating values and select command in children table:

```
mysql> update children set cname="Raju Baby" where cid =2;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from children;
+------+------------+------+---------------+------------+------------+
| cid  | cname      | cage | chealth_issue | cdrop      | cpickup    |
+------+------------+------+---------------+------------+------------+
|    1 | Babu Bab1  |    3 | Fever         | 2034-03-06 | 2034-04-07 |
|    2 | Raju Baby  |    2 | NIL           | 2024-04-26 | 2024-04-27 |
|    1 | Babu Baby2 |    4 | NIL           | 2034-03-06 | 2034-04-07 |
+------+------------+------+---------------+------------+------------+
3 rows in set (0.00 sec)
```

4. Deleting values:

```
mysql> delete from children where cid=2;
Query OK, 1 row affected (0.01 sec)

mysql> select * from children;
+------+------------+------+--------------+------------+------------+
| cid  | cname      | cage | chealth_issue | cdrop      | cpickup    |
+------+------------+------+--------------+------------+------------+
|    1 | Babu Bab1  |    3 | Fever         | 2034-03-06 | 2034-04-07 |
|    1 | Babu Baby2 |    4 | NIL           | 2034-03-06 | 2034-04-07 |
+------+------------+------+--------------+------------+------------+
2 rows in set (0.00 sec)
```

PLAN TABLE:

1.Table creation:

```
mysql> create table plan (plan_id int primary key,duration varchar(30), amount decimal(6,2));
Query OK, 0 rows affected (0.07 sec)
```

2. Inserting Values:

```
mysql> insert into plan values(1,'0.5 day',1000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into plan values(2,'1 day',1500);
Query OK, 1 row affected (0.01 sec)

mysql> insert into plan values(3,'2 days',2500);
Query OK, 1 row affected (0.01 sec)
```

3. Select Command:

```
mysql> select * from plan;
+---------+----------+---------+
| plan_id | duration | amount  |
+---------+----------+---------+
|       1 | 0.5 day  | 1000.00 |
|       2 | 1 day    | 1500.00 |
|       3 | 2 days   | 2500.00 |
+---------+----------+---------+
3 rows in set (0.00 sec)
```

4. Table Structure:

```
mysql> desc plan;
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| plan_id  | int          | NO   | PRI | NULL    |       |
| duration | varchar(30)  | YES  |     | NULL    |       |
| amount   | decimal(6,2) | YES  |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

5. Update Command:

```
mysql> update plan set plan_id=55 where plan_id=4;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from plan;
+---------+----------+---------+
| plan_id | duration | amount  |
+---------+----------+---------+
|       1 | 0.5 day  | 1000.00 |
|       2 | 1 day    | 1500.00 |
|       3 | 2 days   | 2500.00 |
|      55 | 5 days   | 9000.00 |
+---------+----------+---------+
4 rows in set (0.00 sec)
```

6. Delete Command:

```
mysql> delete from plan where plan_id=55;
Query OK, 1 row affected (0.01 sec)

mysql> select * from plan;
+---------+----------+---------+
| plan_id | duration | amount  |
+---------+----------+---------+
|       1 | 0.5 day  | 1000.00 |
|       2 | 1 day    | 1500.00 |
|       3 | 2 days   | 2500.00 |
+---------+----------+---------+
3 rows in set (0.00 sec)
```

ADDING 'plan_id' FOREIGN KEY TO USER TABLE:

```
mysql> alter table user add column plan_id int;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> alter table user add foreign key(plan_id) references plan(plan_id);
Query OK, 4 rows affected (0.22 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

ADDING 'cid' Foreign key to Children table:

```
mysql> create table children( cid int, foreign key(cid) references user(uid) on update cascade,cname varchar(30),cage int, chealth_issue varchar(30), cdrop date,cpickup dat
e);
Query OK, 0 rows affected (0.10 sec)
```

Primary and Foreign Keys in the 'creche' database:

Admin Table:

Primary key – aid, Foreign key- null

User Table:

Primary key – uid, Foreign key- plan_id

Plan Table:

Primary key – plan_id, Foreign key- null

Children Table:

Primary key – null, Foreign key- cid