Introduction to Database

Project Title: Coffee Shop Management System

Group: 8

Group Members:

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**■ Introduction:**

A database management system (DBMS) is a system software for creating and managing databases. The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data. A DBMS makes it possible for end users to create, read, update and delete data in a database.

In our project (Coffee Shop Management System) was created by the concept of DBMS.

■ Scenario:

'Apon Coffee Shop' is mainly a coffee catering company that offers coffee along with fast food delivery service. The coffee shop has cs\_name, cs\_address and license. There is one owner of the coffee shop. The system have save the owner\_name, owner\_NID, email, country, and city. Coffee shop have many branches. The system have stored the b\_id, b\_address, and b\_name. Every branch have one manager. The system stored m\_ID, m\_phone\_no, salary, hiredate. Under every manager there are some chefs. The attributes for chefs are identified as c\_id, c\_name, c\_phone\_no, Salary and under every branch there are many employees. The system stored e\_i

d, city, country, e\_phone\_no, Salary, gender, role. The coffee shop offer many items. The coffee shop items are recognized by I\_id, I\_name, and unit price. Those items are made by the chefs. The attributes for customer are identified as cust\_id, cust\_name. A customer can order more than one items. Order details are o\_id, o\_date, o\_time. After receiving the order have to pay the bill includes the bill\_id, i\_id, o\_id, time.

■ Normalization:

Owner………………1……………………..HAS…………………1……………………COFFEE\_SHOP

**UNF:**

▪ Has ( o\_name, o\_NID, email, country, city, licence, cs\_name, cs\_address)

**1NF:**

▪ there is no multivalued attribute

▪ o\_name, o\_NID, email, country, city, licence, cs\_name, cs\_address

**2NF:**

▪ o\_name, o\_NID, email, country, city

▪ Licence, cs\_name, cs\_address

**3NF:**

▪ o\_name, o\_NID, email

▪ city, country

▪ Licence, cs\_name, cs\_address

**Table Creation**:

▪ o\_name, o\_NID, email, **a\_id**

▪ a\_id, city, country

▪ licence, cs\_name, cs\_address, **o.NID**

**Coffee Shop…………1……………………..HAS…………………\*……………………Branch**

**UNF:**

▪ Has (licence, cs\_name, cs\_address, b\_name, b\_id, b\_address)

**1NF:**

▪ there is no multivalued attribute

▪ licence, cs\_name, cs\_address, b\_name, b\_id, b\_address

**2NF:**

▪ licence, cs\_name, cs\_address

▪ b\_name, b\_id, b\_address

**3NF:**

▪ licence, cs\_name, cs\_address

▪ b\_name, b\_id, b\_address

**Table Creation:**

▪ licence, cs\_name, cs\_address

▪ b\_name, b\_id, b\_address, **licence**

**Branch…………1……………………..Work…………………\*……………………Employee**

**UNF:**

▪ Work (b\_name, b\_id, b\_address, gender, role, e\_id, city, country, e\_phone\_no, salary)

**1NF:**

▪ e\_phone\_no is a multivalued attribute

▪ b\_name, b\_id, b\_address, gender, role, e\_id, city, country, e\_phone\_no, salary

**2NF:**

▪ b\_name, b\_id, b\_address

▪ gender, role, e\_id, city, country, e\_phone\_no, salary

**3NF:**

▪ b\_name, b\_id, b\_address

▪ gender, role, e\_id, e\_phone\_no, salary

▪ city, country

**Table Creation:**

▪ b\_name, b\_id, b\_address

▪ gender, role, e\_id, e\_phone\_no, salary, **a\_id**, **b\_id**

▪ a\_id, city, country

**Branch…………\*……………………..Work…………………1……………………Manager**

**UNF:**

▪ manage (b\_name, b\_id, b\_address, m\_id, m\_phone\_no, salary, haredate)

**1NF:**

▪ m\_phone\_no is a multivalued attribute

**▪** b\_name, b\_id, b\_address, m\_id, m\_phone\_no, salary, haredate

**2NF:**

▪ b\_name, b\_id, b\_address

▪ m\_id, m\_phone\_no, salary, haredate

**3NF:**

▪ b\_name, b\_id, b\_address

▪ m\_id, m\_phone\_no, salary, haredate

**Table Creation:**

▪ b\_name, b\_id, b\_address , **m\_id**, **m\_phone\_no**

▪ m\_id, m\_phone\_no, salary, haredate

**Coffee\_Shop…………1……………………..Offer …………………\*…………………………….Item**

**UNF:**

▪ offer (licence, cs\_name, cs\_address, unit price, I\_id, I\_name)

**1NF:**

▪ There is no multivalued attribute

▪ licence, cs\_name, cs\_address, unit price, I\_id, I\_name

**2NF:**

▪ licence, cs\_name, cs\_address

▪ unit price, I\_id, I\_name

**3NF:**

▪ licence, cs\_name, cs\_address

▪ unit price, I\_id, I\_name

**Table Creation:**

▪ licence, cs\_name, cs\_address

▪ unit price, I\_id, I\_name, **licence**

**Chef…………\*…………………………..Make…………………\*…………………………….Item**

**UNF:**

▪ make (c\_name, c\_id , c\_phone\_no, salary ,unit price, I\_id, I\_name)

**1NF:**

▪ c\_phone\_no is a multivalued attribute

▪ c\_name, c\_id, c\_phone\_no, salary ,unit price, I\_id, I\_name

**2NF:**

▪ c\_name, c\_id, c\_phone\_no, salary

▪ unit price, I\_id, I\_name

**3NF:**

▪ c\_name, c\_id, c\_phone\_no, salary

▪ unit price, I\_id, I\_name

**Table Creation:**

▪ c\_name, c\_id, , c\_phone\_no, salary

▪ unit price, I\_id, I\_name

▪ **c\_id**, **c\_phone\_no** ,**I\_id**

**Manager…………1…………………………..Work Under………….\*…………………………Chef**

**UNF:**

▪ work\_under( m\_id, m\_phone\_no, salary, haredate, c\_name, c\_id , c\_phone\_no, salary)

**1NF:**

▪ m\_phone\_no and c\_phone\_no are two multivalued attributes

▪ m\_id, m\_phone\_no, salary, haredate, c\_name, c\_id, c\_phone\_no, salary

**2NF:**

▪ m\_id, m\_phone\_no, salary, haredate

▪ c\_name, c\_id ,c\_phone\_no, salary

**3NF:**

▪ m\_id, m\_phone\_no, salary, haredate

▪ c\_name, c\_id , c\_phone\_no, salary

**Table Creation:**

▪ b\_name, b\_id, b\_address, m\_id, m\_phone\_no

▪ c\_name, c\_id , c\_phone\_no, salary, **m\_id**, **m\_phone\_no**

**Coffee\_Shop…………1…………………Give\_Service………………\*…………………Customer**

**UNF:**

▪ give\_service (licence, cs\_name, cs\_address, cust\_id, cust\_name)

**1NF:**

▪ There is no multivalued attribute

▪ licence, cs\_name, cs\_address, cust\_id, cust\_name

**2NF:**

▪ licence, cs\_name, cs\_address

▪ cust\_id, cust\_name

**3NF:**

▪ licence, cs\_name, cs\_address

▪ cust\_id, cust\_name

**Table Creation:**

▪ licence, cs\_name, cs\_address

▪ cust\_id, cust\_name, **licence**

**Customer…………1…………………Give………………\*…………………Order**

**UNF:**

▪ give ( cust\_id, cust\_name, o\_id, o\_date, o\_time)

**1NF:**

▪ There is no multivalued attribute

▪ cust\_id, cust\_name, o\_id, o\_date, o\_time

**2NF:**

▪ cust\_id, cust\_name

▪ o\_id, o\_date, o\_time

**3NF:**

▪ cust\_id, cust\_name

▪ o\_id, o\_date, o\_time

**Table Creation:**

▪ cust\_id, cust\_name, **o\_id**

▪ o\_id, o\_date, o\_time

**Bill…………1…………………Payment………………1…………………Order**

**UNF:**

▪ payment (I\_id, c\_id, b\_id, o\_id, o\_date, o\_time)

**1NF:**

▪ There is no multivalued attribute

▪ I\_id, c\_id, b\_id, o\_id, o\_date, o\_time

**2NF:**

▪ I\_id, c\_id, b\_id

▪ o\_id, o\_date, o\_time

**3NF:**

▪ I\_id, c\_id, b\_id

▪ o\_id, o\_date, o\_time

**Table Creation:**

▪ I\_id, c\_id, b\_id , **o\_id**

▪ o\_id, o\_date, o\_time

Rough Table:

1. owner\_name, owner\_NID, email, **a.id**
2. a.id, city, country
3. licence, cs.name,cs.address, **o.NID**
4. ~~licence, cs.name, cs.address~~
5. b.name, b.id, b.address, **licence**
6. ~~b.name, b.id, b.address~~
7. gender, role, e.ID, e.phone\_no, salary, **a.id, b.ID**
8. ~~a.ID, city, country~~
9. b.name, b.ID, b.address**, m.ID, m.phone\_no**
10. hiredate, salary, , m.Id, m.phone\_no
11. ~~hiredate, salary, m.Id, m.phone\_no~~
12. c.phone\_no, c.ID, c.name, salary, **m.ID, m.phone\_no**
13. ~~c.phone\_no, c.ID, c.name, salary~~
14. ~~i.ID, i.name, unit\_price~~
15. **c.phone\_no, c.ID, i.ID**
16. ~~licence, cs.name, cs.address~~
17. i.ID, i.name, unit\_price, **licence**
18. ~~licence, cs.name, cs.address~~
19. cust.ID, cust.name, **licence**
20. cust.name, cust.ID, **o.ID**
21. o.ID, o.date, o.time
22. i.ID, c.ID, bill.ID, **o.ID**
23. ~~o.ID, o.date, o.time~~

Final Table:

1. ower\_name, owner\_NID, email, **a.id**
2. a\_id, city, country
3. licence, cs\_name,cs\_address, **o\_NID**
4. b\_name, b\_id, b\_address, **licence**
5. gender, role, e.ID, e.phone\_no, salary, **a.id, b.ID**
6. b.name, b.ID, b.address**, m.ID, m.phone\_no**
7. hiredate, salary, m.Id, m.phone\_no
8. c.phone\_no, c.ID, c.name, salary, **m.ID, m.phone\_no**
9. **c.phone\_no, c.ID, i.ID**
10. i.ID, i.name, unit\_price, **licence**
11. cust.ID, cust.name, **licence**
12. cust.name, cust.ID, **o.ID**
13. o.ID, o.date, o.time
14. i.ID, c.ID, bill.ID, **o.ID**

alter table Employee add constraint ae primary key (e\_id, e\_phone\_no);

alter table Manager add constraint az primary key (m\_id, m\_phone\_no);

alter table Chef add constraint ai primary key (c\_id, c\_phone\_no);

alter table fk\_c1 add constraint ak primary key (c\_id,i\_id,c\_phone\_no);

alter table Bill add constraint ar primary key (c\_id,i\_id,bill\_id);

alter table Owner add constraint ab foreign key (a\_id) references Location (a\_id);

alter table Coffee\_Shop add constraint ac foreign key (owner\_NID) references Owner (owner\_NID);

alter table Brance add constraint ad foreign key (licence) references Coffee\_Shop (licence);

alter table Employee add constraint af foreign key (a\_id) references Location (a\_id);

alter table Employee add constraint ag foreign key (b\_id) references Brance (b\_id);

alter table fk\_b1 add constraint ah foreign key (m\_id,m\_phone\_no) references Manager (m\_id,m\_phone\_no);

alter table Chef add constraint aj foreign key (m\_id,m\_phone\_no) references Manager (m\_id,m\_phone\_no);

alter table fk\_c1 add constraint al foreign key (c\_id,c\_phone\_no) references Chef (c\_id,c\_phone\_no);

alter table fk\_c1 add constraint am foreign key (i\_id) references Item (i\_id);

alter table Item add constraint ao foreign key (licence) references Coffee\_Shop (licence);

alter table Customer add constraint ap foreign key (licence) references Coffee\_Shop (licence);

alter table fk\_cust1 add constraint aq foreign key (o\_id) references Order1 (o\_id);

alter table Bill add constraint au foreign key (o\_id) references Order1 (o\_id);

**DATA INSERTATION:**

**1. Owner:**

insert into owner values ('MD. RAHMAN',6245765237,'rahman@gmail.com',101);

**2. Location:**

insert into location values(101,'Rangpur','Bangladesh');

insert into location values(102,'Dhaka','Bangladesh');

insert into location values(104,'Tangail','Bangladesh');

insert into location values(107,'Khulna','Bangladesh');

**3. Coffee\_Shop:**

insert into Coffee\_Shop values(3489574923,'Apon Coffee Shop','Khilgaon',6245765237);

**4. Branch:**

insert into Brance values('Apon Coffee Shop',1221,'Khilgaon',3489574923);

insert into Brance values('Apon Coffee Shop',1222,'Gulshan',3489574923);

insert into Brance values('Apon Coffee Shop',1223,'Bashundhara r/a',3489574923);

insert into Brance values('Apon Coffee Shop',1224,'Uttara',3489574923);

insert into Brance values('Apon Coffee Shop',1225,'Kuratoli',3489574923);

**5. Employee:**

insert into Employee values('Male','Accountent',073,0173331273,8000,101,1221);

insert into Employee values('Female','Accountent',074,0197331273,8000,102,1224);

insert into Employee values('Male','Waiter',075,0178331273,5000,107,1221);

insert into Employee values('Male','Accountent',076,0189331273,8000,104,1223);

insert into Employee values('Male','Waiter',077,0172331273,5000,104,1224);

insert into Employee values('Female','Waiter',078,0179331273,5000,107,1222);

insert into Employee values('Female','Accountent',079,0173331073,8000,102,1225);

insert into Employee values('Male','Waiter',080,0173331272,5000,101,1223);

insert into Employee values('Female','Accountent',082,0163331273,8000,104,1222);

insert into Employee values('Male','Waiter',085,0153331273,5000,101,1225);

**6. fk\_b1:**

insert into fk\_b1 values('Apon Coffee Shop',1221,'Khilgaon',922,0182376599);

insert into fk\_b1 values('Apon Coffee Shop',1222,'Gulshan',923,0182376590);

insert into fk\_b1 values('Apon Coffee Shop',1223,'Bashundhara r/a',924,0162376587);

insert into fk\_b1 values('Apon Coffee Shop',1224,'Uttara',926,0197676599);

insert into fk\_b1 values('Apon Coffee Shop',1225,'Kuratoli',929,0182907599);

**7. Manager:**

insert into Manager values(to\_date('01-07-2017','dd-mm-yyyy'),15000,922,0182376599);

insert into Manager values(to\_date('01-12-2017','dd-mm-yyyy'),15000,923,0182376590);

insert into Manager values(to\_date('02-06-2017','dd-mm-yyyy'),15000,924,0162376587);

insert into Manager values(to\_date('01-03-2017','dd-mm-yyyy'),15000,926,0197676599);

insert into Manager values(to\_date('03-11-2017','dd-mm-yyyy'),15000,929,0182907599);

**8. Chef:**

insert into Chef values(01321763654,201,'Tanjib',7000,922,0182376599);

insert into Chef values(01321763659,202,'Tushar',7000,923,0182376590);

insert into Chef values(01421763654,203,'Shahriar',7000,924,0162376587);

insert into Chef values(01921763654,207,'Shamsu',7000,926,0197676599);

insert into Chef values(01321763666,208,'Alam',7000,929,0182907599);

**9. fk\_c1:**

insert into fk\_c1 values(01321763654,201,3002);

insert into fk\_c1 values(01321763659,202,3001);

insert into fk\_c1 values(01321763654,201,3003);

insert into fk\_c1 values(01321763659,202,3004);

insert into fk\_c1 values(01421763654,203,3007);

insert into fk\_c1 values(01921763654,207,3005);

insert into fk\_c1 values(01321763666,208,3006);

insert into fk\_c1 values(01421763654,203,3010);

insert into fk\_c1 values(01321763666,208,3008);

insert into fk\_c1 values(01921763654,207,3009);

**10. Item:**

insert into Item values(3001,'Cold Coffee',180,3489574923);

insert into Item values(3002,'Milk Shake',140,3489574923);

insert into Item values(3003,'Hot Coffee',120,3489574923);

insert into Item values(3004,'Oreo Shake',180,3489574923);

insert into Item values(3005,'Mars Shake',170,3489574923);

insert into Item values(3006,'Virgin Mojito',170,3489574923);

insert into Item values(3007,'Blue Lime',180,3489574923);

insert into Item values(3008,'Naga Burger',275,3489574923);

insert into Item values(3009,'Naga Wings',175,3489574923);

insert into Item values(3010,'Pizza',765,3489574923);

**11. Customer:**

insert into Customer values(2209,'Emon',3489574923);

insert into Customer values(2212,'Jeelan',3489574923);

insert into Customer values(2213,'Amit',3489574923);

insert into Customer values(2240,'Tushar',3489574923);

insert into Customer values(2258,'Samiul',3489574923);

insert into Customer values(2269,'Surobe',3489574923);

**12. fk\_cust1:**

insert into fk\_cust1 values(2209,'Emon',01);

insert into fk\_cust1 values(2212,'Jeelan',02);

insert into fk\_cust1 values(2258,'Samiul',05);

insert into fk\_cust1 values(2269,'Surobe',06);

**13. Order1:**

insert into Order1 values(01,to\_date('01-07-2019','dd-mm-yyyy'),0427);

insert into Order1 values(02,to\_date('11-07-2019','dd-mm-yyyy'),0652);

insert into Order1 values(05,to\_date('21-07-2019','dd-mm-yyyy'),0654);

insert into Order1 values(06,to\_date('24-07-2019','dd-mm-yyyy'),0702);

insert into Order1 values(07,to\_date('07-08-2019','dd-mm-yyyy'),0710);

insert into Order1 values(09,to\_date('24-08-2019','dd-mm-yyyy'),0800);

**14. Bill:**

insert into Bill values(3001,2209,01,01);

insert into Bill values(3002,2212,02,02);

insert into Bill values(3003,2213,05,05);

insert into Bill values(3004,2240,06,06);

insert into Bill values(3008,2258,07,07);

insert into Bill values(3009,2269,09,09);

**Conclusion :**

After lots of hard works of all our group member. We are able to create our database project “Coffee Shop Management System”. While doing the project we faced some difficulty and we overcome that. Now we are confident about our project. Hopefully in future we will be able to create a real database system for any purpose.